United States
Environmental Protection
Agency

Office of Air Quality
Planning and Standards
Research Triangle Park, NC 27711

EPA-454/R-99-032b
August 1999

Air

EPA

Primary Lead Smelter

Doe Run
Herculaneum, Missouri

Volume II of III

FINAL REPORT
PRIMARY LEAD SMELTER
DOE RUN
HERCULANEUM, MISSOURI

VOLUME II OF III
APPENDIX B.1

EPA Contract No. 68D70069
Work Assignment No. 2-09

Prepared for:

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Work Assignment Manager
SCGB, EMC, EMAD, OAQPS
U.S. Environmental Protection Agency
Research Triangle Park, NC 27711

August 1999
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Submitted by:

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ANALYTICAL DATA

VOLATILE ORGANICS

TRIANGLE LABS

CASE NARRATIVE

Analysis of Samples for the Presence of

Volatile Analytes by

High-Resolution Gas Chromatography / Low-Resolution Mass Spectrometry

METHOD 8240A Rev. 1 (7/92)

Date : July 25, 1997

Client ID : Pacific Environmental Services

TLI Project Number : 42284

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Objective: Analysis of eighteen VOST tube pairs for Method 8240 Table 2 and Clean Air Act (CAA) volatile compounds and Tentatively Identified Compounds (TIC's).

Method:

Nineteen VOST tube pairs were received at Triangle Laboratories, Inc. on June 30, 1997 at 20°C and in good condition. The samples were stored in a refrigerator at 4°C prior to analysis. The first field blank pair was not analyzed per client request. The remaining VOST tube sample pairs were analyzed in tandem according to the guidelines of Methods 8240A and 5040. The internal standards and surrogate standards were added in the amount of 0.25 micrograms (ug) immediately prior to analysis by GC/MS. The internal standards are bromochloromethane, 1,4-difluorobenzene, and chlorobenzene-d_5 and the surrogate standards reported are 1,2-dichloroethane-d_4, benzene-d_6, and toluene-d_8. The results reported relate only to the items tested.

The GC/MS analysis conditions are listed below:

Purge and trap:	Tekmar LSC-2000
Purge:	11 min.
Desorb Temperature:	250 C
Desorb Time:	3 min.
GC Conditions:	
Column:	30 m x .53 mm x 0.3μ J&W DB624 0 C hold .5 min, 10 C/min to 45C, 6 C/min to 90C, hold 1.5 min, 50 C/min to 200C.
MS Conditions:	
Instrument:	VG-TRIO-1 Lab Base data system
Scan:	35-350 amu at .6s/scan
Interface:	Jet Separator, 200 C

Report:

Enclosed with the case narrative are copies of the sample identification index, the project summary sheets, client paperwork, sample log-in sheets, and log book pages. A sample identification index summarizes the client sample name, TLI sample number, and analytical file name for each sample and blank. The project summary lists the amounts for detected analytes in gray. The estimated detection limits will be listed in parentheses when the target analytes are not detected.

The data are reported as quantitation reports, chromatograms, interim reports, and spectra of detected target analytes and TIC's. The quantitation report header lists the TLI project number, analysis method, instrument sample file name, client sample name, client project number, TLI sample number, calibration file, date received, and analysis date. The response factors used for all calculations are from the calibration file listed in the header. All initial and continuing calibration data are located in the back of the data package. The amount is reported in total ug for the VOST tubes. The retention time (RT) will be

listed for all internal standards and analytes which are detected. If a target analyte is not detected, it will be flagged with a "U" and a detection limit will be listed. Estimated detection limits are calculated for all analytes which were not found in the samples by using an area of 2000. The estimated detection limits reported are the average detection limits achievable over time on an instrument type. The actual detection limit for a given compound on a given day may vary from the estimate reported. The quantitation limit for all analytes is half of the low point of the initial calibration. Below this point the calibration cannot be considered to be linear. Any amount reported at a level below the quantitation limit will be flagged with a "J" and should be considered estimated. If any compounds are found at a level above the upper calibration range, the analyte will be flagged with an "E" and the amounts reported should be considered estimated. If any target analytes found in the laboratory blanks are detected in the associated samples, they will be flagged with a "B" on each sample topsheet. All analytes are quantitated against the internal standard preceding them on the target analyte list. Surrogate standards are quantitated against the internal standard with the matching internal standard reference number. For example, toluene-d_8 has 3 in the IS Ref column and would be quantitated against the internal standard which has IS3 listed in the flag column. If an internal standard area is above or below the quality control limits as defined by the continuing calibration, it will be flagged with "High" or "Low" in the flag column.

In addition to the quantitation report, a tentatively identified compound (TIC) report is also present. The TIC report includes the TIC name, retention time and area, and the internal standard retention time and area. TIC's are reported when they elute within a window of minus one minute from the first and plus one minute from the last target analytes' retention times, and are greater than ten percent of the nearest internal standard area. The results should be considered estimates because they are calculated using the total ion current areas of the internal standards. These TIC's were searched against the NIST library and the best three matches were obtained. From this information a tentative identification was assigned. All of the spectral searches are included in the data package behind the spectra of the target analytes.

Results:

There were minor discrepancies between the sample identifications listed on the client chain of custody and those listed on the samples which arrived. The identifications on the sample labels were used for analytical and reporting purposes.

The VOST tube pairs were analyzed within the fourteen day sampling to analysis holding time. The VOST tubes were analyzed in tandem per client request.

Several target analytes were found at an amount above the upper calibration limit of one microgram in several of the samples. These compound is flagged with "E" and the amounts reported should be considered estimated.

All internal standard areas and surrogate standard percent recoveries were within quality control limits for all samples and blanks.

Up to ten of the largest non-target peaks were reported as TIC's. The majority of non-target analytes were siloxanes and hydrocarbons.

The laboratory blanks contained target analytes at amounts below the quantitation limit. The target analytes in the laboratory blanks should not be considered as truly present in the native samples unless found at a level at least five times the amount found in the associated blank. In the event that the amount of a target analyte found in the samples is twenty times the amount found in the associated blank, the contribution from the blank can be considered negligible.

Sample Calculations:

Response Factor (RF) = $\frac{\text{(area analyte) x (amt IS)}}{\text{(area IS) x (amt analyte)}}$

Amount (ug) = $\frac{\text{(area analyte in sample) x (amt IS)}}{\text{(area IS) x (avg ical RF)}}$

TIC amount (ug) = $\frac{\text{(Total Ion Current Area of TIC) x (amt IS)}}{\text{(Total Ion Current Area of IS)}}$

Where:

amt IS = amount of internal standard = 0.25 ug
ical = initial calibration

The data in this package has been judged to be valid according to the guidelines of Methods 8240A and 5040 except as noted above. Should you have any questions, please feel free to contact our Project Scientist, Amy Boehm, at (919) 544-5729, ext. 268.

For Triangle Laboratories, Inc.,

Report Preparation:

Tracy Wardell

Tracy Wardell
Report Preparation Chemist

Quality Control:

Sarah A Hubbard

Sarah A. Hubbard
Report Preparation Chemist

The total number of pages in this data package is 699.

TRIANGLE LABS

TRIANGLE LABORATORIES, INC.

LIST OF CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

American Association for Laboratory Accreditation. Expires July 31, 1997. Certificate Number 0226-01. Accreditation for technical competence in Environmental Testing.(Including Waste Water, Sol/Haz Waste, Pulp/Paper, and Air Matrices) Parameters are AOX/TOX, Volatiles, Pesticides, PCB's, SNA's, and Dioxin/Furan. Method 1613 for Drinking Water.

State of Alabama, Department of Environmental Management. Expires December 31, 1997. Laboratory I.D. # 40950. Dioxin in drinking water.

State of Alaska, Department of Environmental Conservation. Expires December 21, 1997. Certificate number OS-00397. Dioxin in drinking water.

State of Arizona, Department of Health Services. Expires May 26, 1997. Certificate #AZ0423. Drinking Water for Dioxin, Dioxin in WW and S/H Waste.

State of Arkansas, Department of Pollution Control and Ecology. Expires February 18, 1998. Pulp/paper, soil, water, and Hazardous Waste for Dioxin/Furan: AOX/TOX.

State of California, Department of Health Services. Expires August 31, 1997. Certificate #1922. Selected Metals in Waste Water; Volatiles, Semi-volatiles, and Dioxin/furan in WW and Sol/Haz Waste. Dioxin in drinking water.

State of Connecticut, Department of Health Services. Expires September 30, 1997. Registration # PH-0117. Dioxin in drinking water.

Delaware Health and Social Services. Expires December 31, 1997. Certificate #NC 140. Dioxin in drinking water.

Florida Department of Health and Rehabilitative Services. Expires June 30, 1997.Dioxin in DW. Drinking Water ID HRS# 87424. Metals, Extractable Organics (GC/MS), Pesticides/PCB's (GC) and Volatiles (GC/MS) in Environmental Samples. Environmental water ID HRS# E87411.

Revised 5/30/97 jm

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Hawaii Department of Health. Expires March 1, 1998. Dioxin in drinking water. "Accepted" status for regulatory purposes.

Idaho Department of Health and Welfare. Expires November 30, 1997. Dioxin in drinking water.

State of Kansas, Department of Health and Environment. Expires January 31, 1998. Environmental Analyses/Non potable Water and Solid and Hazardous Waste. Method 1613 for drinking water. ID #'s - Drinking water and/or pollution control - E-215. Solid or Hazardous Waste - E-1209.

Commonwealth of Kentucky, Department for Environmental Protection. Expires December 31, 1997. ID#90060. Dioxin in drinking water.

Maryland Department of Health and Mental Hygiene. Expires September 30, 1997. Certification #235. Drinking water by Method 1613A.

State of Michigan, Department of Public Health. Expires March 31, 1997. Drinking water by Method 1613.

Mississippi State Department of Health. No expiration date.. Dioxin in drinking water.

Montana Department of Health and Environmental Services. Expires December 31, 1997. Dioxin in drinking water.

State of New Jersey, Department of Environmental Protection and Energy. Extended by state. Temporary certificate until June 30, 1997 or sooner. ID #67851. BNAs and Volatiles. Dioxin in drinking water.

State of New Mexico, Environment Department. Expires July 31, 1997. Dioxin in drinking water.

New York State Department of Health. Expires June 30, 1997. ID #11026. Environmental Analyses of non-potable Water, Solid and Hazardous Waste. Method 1613 in DW.

State of North Carolina, Department of Environment Health and Natural Resources Expires December 31, 1997. Certificate # 37751. Dioxin in drinking water.

State of North Carolina, Department of Environment, Health, and Natural Resources, Division of Environmental Management. Expires December 31, 1997. Certificate # 485. Metals, pesticides & PCBs, semi-volatiles and volatiles; TCLP.

North Dakota State Department of Health and Consolidated Laboratories. Expires December 31, 1997. Certificate # R-076. Effective October 4, 1993. Dioxin in drinking water.

Revised May 23, 1997 jm

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Oklahoma Department of Environmental Quality. Expires October 31, 1997. Laboratory #9612. Dioxin by 1613A, 8290 and 8280.

State of South Carolina, Department of Health and Environmental Control. Expires April 1, 1997. Certificate number #99040001 (drinking water). Expires August 31, 1997. Certificate number #99040002 (other parameters). Dioxin/Furans, BNA, Volatiles, and PCBs/pesticides under Clean Water Act. 2,3,7,8-TCDD for Drinking Water, and Organic extractables for Solid and Hazardous Waste.

State of Tennessee. Department of Environment and Conservation. Expires February 5, 1999. ID #02992. Method 1613 Drinking water only.

U.S. Department of Agriculture Soil Permit. Expires September 30, 2002. Permit No. S-4958. Under the authority of the Federal Plant Pest Act, permission is granted to receive foreign soil samples for use in laboratory analysis.

U.S. Army Corps of Engineers. Expires November 30, 1997. Validated to perform methods 8280 & 8290 for Lockbourne Landfill Site Investigation, Defense Distribution Depot Projects, and assorted projects for the USACE North Pacific Division Laboratory.

U.S. EPA Region V. Expires November 14, 1999. Dioxin in drinking water.

U.S. EPA Region VIII, for the State of Wyoming. Expires November 13, 1997. Dioxin in drinking water.

State of Utah, Department of Health. Expires December 31, 1997. Certificate Number E-166. Certification for the following parameters: Semi-Volatiles and Volatiles under RCRA; Volatiles under Clean Water Act; Dioxin/furans by Method 8280; Drinking water for Dioxin by Method 1613; Metals including Mercury and Microwave Digestion.

Commonwealth of Virginia, Department of General Services, Division of Consolidated Laboratory Services. Expires June 30, 1997. ID # 00341. Dioxin in drinking water.

State of Washington, Department of Ecology. Expires September 11, 1997. Lab Accreditation Number C067. Scope of Accreditation applies to water analyses for Polychlorinated Dibenzo-p-dioxins and Polychlorinated Dibenzofurans, BNA Extr (Semivolatile) Organics and Purgeable (Volatile) Organics.

State of Washington, Department of Health. Expires April 30, 1998. Dioxin in drinking water. Lab I.D. 129

State of West Virginia, Department of Health. Expires December 31, 1997. Certificate No. 9923(C). Dioxin in drinking water.

State of Wisconsin, Department of Natural Resources. Expires June 30, 1997. Laboratory ID Number 999869530. Certification for the following categories of Organics: Purgeable, Base/Neutral, Acid, PCBs, and Dioxin. Expires November 14, 1999. Laboratory ID 999869530. Dioxin in drinking water.

PHARMACEUTICAL

Drug Enforcement Agency (DEA). Expires November 30, 1997. Registration number RT01195835. Controlled substance registration for schedules 1,2,3,3N,4,5.

N.C. Department of Human Resources. Expires October 31, 1997. Registration number NC-PT 0000 0031. North Carolina controlled substances registration. Application submitted for renewal.

Food & Drug Administration (FDA) Registration. Expires July 1997. ID #'s 001500 1053481. Annual registration of drug establishment. Annual registration of drug establishment.

OTHER

Clinical Laboratory Improvement Amendments (CLIA) Registration. Expires May 30, 1999. ID # 34D0705123. Department of Health & Human Services, Health Care Financing Administration.

U.S. EPA Large Quantity Hazardous Waste Generator. No expiration date. EPA ID #NCD982156879. Permit indicates that the laboratory is a large generator of hazardous waste.

North Carolina Radioactive Materials License. Expires April 30 1998. License No. 032-0954-1. License authorizes the licensee to receive, acquire, own, possess, transfer, import and use such radioactive materials as designated.

North Carolina General License for Radiation Protection. No. expiration date. License No. 032-875-OG. The general license applies only to radioactive material contained in devices which have been manufactured and labeled in accordance with specific requirements.

Revised May 23, 1997 jm

Printed May 23, 1997

Triangle Laboratories of RTP
Sample Identification Index for Project: 42284

Client Id:	TLI Id:	File Name:
VOST-1 SET 1 TUBEA/B T/TC	173-46-1A,B	HS351
VOST-1 SET 2 TUBEA/B T/TC	173-46-2A,B	HS352
VOST-1 SET 3 TUBEA/B T/TC	173-46-3A,B	HS353
VOST-1 SET 4 TUBEA/B T/TC	173-46-4A,B	HS354
VOST-2 SET 1 TUBEA/B T/TC	173-46-6A,B	HS355
VOST-2 SET 2 TUBEA/B T/TC	173-46-7A,B	HS365
VOST-2 SET 3 TUBEA/B T/TC	173-46-8A,B	HS366
VOST-2 SET 4 TUBEA/B T/TC	173-46-9A,B	HS367
VOST-3 SET 1 TUBEA/B T/TC	173-46-10A,B	HS368
VOST-3 SET 2 TUBEA/B T/TC	173-46-11A,B	HS369
VOST-3 SET 3 TUBEA/B T/TC	173-46-12A,B	HS370
VOST-3 SET 4 TUBEA/B T/TC	173-46-13A,B	HS371
VOST FB 2 TUBEA/B T/TC	173-46-14A,B	HS349
VOST FB 3 TUBEA/B T/TC	173-46-15A,B	HS350
VOST-4 SET 1 TUBEA/B T/TC	173-46-16A,B	HS372
VOST-4 SET 2 TUBEA/B T/TC	173-46-17A,B	HS373
VOST-4 SET 3 TUBEA/B T/TC	173-46-18A,B	HS374
VOST-4 SET 4 TUBEA/B T/TC	173-46-19A,B	HS375
VOSTBLK 070897 T/TC	VOSTBLK 070897	HS348
VOSTBLK 070997 T/TC	VOSTBLK 070997	HS364

Triangle Laboratories of RTP
Project Summary for Project 42284

Client ID:	VOST-1 SET 1 TUBEA/B T/TC	VOST-1 SET 2 TUBEA/B T/TC	VOST-1 SET 3 TUBEA/B T/TC	VOST-1 SET 4 TUBEA/B T/TC	VOST-2 SET 1 TUBEA/B T/TC
Filename :	HS351	HS352	HS353	HS354	HS355
TLI Id :	173-46-1A,B	173-46-2A,B	173-46-3A,B	173-46-4A,B	173-46-6A,B
Matrix :	VOST	VOST	VOST	VOST	VOST
Units :	ug	ug	ug	ug	ug
Chloromethane	0.169	0.114	0.120	0.171	0.217
Vinyl Chloride	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
1,3-Butadiene	0.122	0.091	0.134	0.180	0.112
Bromomethane	0.017	0.018	0.024	0.018	0.022
Chloroethane	(0.001)	(0.001)	0.003	0.004	0.009
Vinyl bromide	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Trichlorofluoromethane	1.461	1.026	0.039	0.064	0.074
1,1-Dichloroethene	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Iodomethane	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Carbon disulfide	0.322	0.253	0.313	0.420	0.419
Acetone	0.108	0.094	0.082	0.091	0.059
Allyl chloride	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Methylene chloride	1.385	1.220	0.359	2.798	1.264
trans-1,2-Dichloroethene	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
tert-Butyl methyl ether	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Acrylonitrile	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
n-Hexane	0.412	0.209	0.178	1.272	0.814
1,1-Dichloroethane	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
1,2-Epoxybutane	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
cis-1,2-Dichloroethene	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Chloroform	0.007	0.006	(0.001)	(0.001)	(0.001)
1,2-Dichloroethane	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Isooctane	0.018	0.011	0.008	0.051	0.038
Vinyl acetate	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
2-Butanone	0.011	0.008	0.013	0.016	0.016
1,1,1-Trichloroethane	0.006	0.006	(0.001)	(0.001)	(0.001)
Carbon tetrachloride	0.004	(0.001)	(0.001)	0.008	(0.001)
Benzene	0.810	0.741	0.743	1.108	1.743
Trichloroethene	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
1,2-Dichloropropane	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Ethyl acrylate	0.016	(0.001)	(0.001)	(0.001)	(0.001)
Methyl methacrylate	0.258	0.103	0.095	0.097	0.087
Bromodichloromethane	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
cis-1,3-Dichloropropene	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
trans-1,3-Dichloropropene	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)

( )-Estimated Detection Limit

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Savar v3.5
Printed: 22:45:50 07/25/97

Triangle Laboratories of RTP
Project Summary for Project 42284

Client ID:	VOST-1 SET 1 TUBEA/B T/TC	VOST-1 SET 2 TUBEA/B T/TC	VOST-1 SET 3 TUBEA/B T/TC	VOST-1 SET 4 TUBEA/B T/TC	VOST-2 SET 1 TUBEA/B T/TC
Filename :	HS351	HS352	HS353	HS354	HS355
TLI Id :	173-46-1A,B	173-46-2A,B	173-46-3A,B	173-46-4A,B	173-46-6A,B
Matrix :	VOST	VOST	VOST	VOST	VOST
Units :	ug	ug	ug	ug	ug
1,1,2-Trichloroethane	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Dibromochloromethane	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Ethylene dibromide	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Bromoform	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
4-Methyl-2-pentanone	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Toluene	0.284	0.263	0.271	0.357	0.506
Tetrachloroethene	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
2-Hexanone	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Chlorobenzene	0.003	0.003	0.004	0.007	0.004
Ethylbenzene	0.057	0.050	0.049	0.050	0.104
m-/p-Xylene	0.108	0.092	0.098	0.122	0.147
o-Xylene	0.039	0.035	0.037	0.045	0.080
Styrene	0.242	0.250	0.215	0.239	0.281
1,1,2,2-Tetrachloroethane	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Cumene	0.007	0.006	0.005	0.005	0.006

( )-Estimated Detection Limit

Triangle Laboratories of RTP, Inc.
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Phone: (919) 544-5729 • Fax: (919) 544-5491

Triangle Laboratories of RTP
Project Summary for Project 42284

Client ID:	VOST-2 SET 2 TUBE A/B T/TC	VOST-2 SET 3 TUBE A/B T/TC	VOST-2 SET 4 TUBE A/B T/TC	VOST-3 SET 1 TUBE A/B T/TC	VOST-3 SET 2 TUBE A/B T/TC
Filename :	HS365	HS366	HS367	HS368	HS369
TLI Id :	173-46-7A,B	173-46-8A,B	173-46-9A,B	173-46-10A,B	173-46-11A,B
Matrix :	VOST	VOST	VOST	VOST	VOST
Units :	ug	ug	ug	ug	ug
Chloromethane	0.093	0.099	0.152	0.161	0.232
Vinyl Chloride	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
1,3-Butadiene	0.143	0.114	0.124	0.182	0.195
Bromomethane	0.019	0.013	0.018	0.028	0.015
Chloroethane	0.004	(0.001)	0.004	(0.001)	0.013
Vinyl bromide	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Trichlorofluoromethane	0.053	0.044	0.051	0.125	0.048
1,1-Dichloroethene	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Iodomethane	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Carbon disulfide	0.490	0.396	0.742	0.434	0.446
Acetone	0.082	0.068	0.097	0.127	0.095
Allyl chloride	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)
Methylene chloride	0.349	0.206	0.232	3.024	0.979
trans-1,2-Dichloroethene	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
tert-Butyl methyl ether	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Acrylonitrile	(0.003)	(0.003)	0.025	0.525	0.665
n-Hexane	0.210	0.119	0.161	1.755	0.492
1,1-Dichloroethane	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
1,2-Epoxybutane	(0.003)	(0.003)	(0.004)	(0.003)	(0.003)
cis-1,2-Dichloroethene	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Chloroform	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
1,2-Dichloroethane	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Isooctane	(0.001)	(0.001)	(0.001)	0.077	0.021
Vinyl acetate	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
2-Butanone	0.013	(0.006)	0.013	0.019	0.014
1,1,1-Trichloroethane	(0.001)	(0.001)	(0.001)	0.005	(0.001)
Carbon tetrachloride	(0.001)	(0.001)	(0.001)	0.011	0.009
Benzene	0.959	0.948	1.246	0.772	0.637
Trichloroethene	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
1,2-Dichloropropane	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Ethyl acrylate	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Methyl methacrylate	0.027	0.077	0.249	0.011	(0.001)
Bromodichloromethane	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
cis-1,3-Dichloropropene	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
trans-1,3-Dichloropropene	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)

( )-Estimated Detection Limit

Triangle Laboratories of RTP, Inc.
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Phone: (919) 544-5729 • Fax: (919) 544-5491

Triangle Laboratories of RTP
Project Summary for Project 42284

Client ID:	VOST-2 SET 2 TUBEA/B T/TC	VOST-2 SET 3 TUBEA/B T/TC	VOST-2 SET 4 TUBEA/B T/TC	VOST-3 SET 1 TUBEA/B T/TC	VOST-3 SET 2 TUBEA/B T/TC
Filename :	HS365	HS366	HS367	HS368	HS369
TLI Id :	173-46-7A,B	173-46-8A,B	173-46-9A,B	173-46-10A,B	173-46-11A,B
Matrix :	VOST	VOST	VOST	VOST	VOST
Units :	ug	ug	ug	ug	ug
1,1,2-Trichloroethane	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Dibromochloromethane	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Ethylene dibromide	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Bromoform	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
4-Methyl-2-pentanone	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Toluene	0.433	0.314	0.438	0.343	0.269
Tetrachloroethene	0.001	(0.001)	0.006	(0.001)	(0.001)
2-Hexanone	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Chlorobenzene	0.005	0.003	0.005	0.011	0.008
Ethylbenzene	0.066	0.050	0.068	0.043	0.043
m-/p-Xylene	0.145	0.114	0.166	0.135	0.137
o-Xylene	0.063	0.048	0.065	0.046	0.043
Styrene	0.273	0.239	0.313	0.106	0.103
1,1,2,2-Tetrachloroethane	0.015	(0.001)	(0.001)	(0.001)	(0.001)
Cumene	0.007	0.004	0.006	0.004	0.003

( )-Estimated Detection Limit

Triangle Laboratories of RTP, Inc.
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Triangle Laboratories of RTP
Project Summary for Project 42284

Client ID:	VOST-3 SET 3 TUBEA/B T/TC	VOST-3 SET 4 TUBEA/B T/TC	VOST FB 2 TUBEA/B T/TC	VOST FB 3 TUBEA/B T/TC	VOST-4 SET 1 TUBEA/B T/TC
Filename :	HS370	HS371	HS349	HS350	HS372
TLI Id :	173-46-12A,B	173-46-13A,B	173-46-14A,B	173-46-15A,B	173-46-16A,B
Matrix :	VOST	VOST	VOST	VOST	VOST
Units :	ug	ug	ug	ug	ug
Chloromethane	0.191	0.287	0.005	0.002	0.250
Vinyl Chloride	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
1,3-Butadiene	0.768	0.714	(0.001)	(0.001)	0.324
Bromomethane	0.020	0.020	0.004	(0.001)	0.032
Chloroethane	(0.001)	0.137	(0.001)	(0.001)	0.070
Vinyl bromide	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Trichlorofluoromethane	0.031	0.031	0.014	(0.001)	0.030
1,1-Dichloroethene	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Iodomethane	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Carbon disulfide	1.667	1.107	(0.001)	(0.001)	0.419
Acetone	0.063	0.136	0.045	0.037	0.050
Allyl chloride	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Methylene chloride	0.811	1.275	1.547	0.044	0.356
trans-1,2-Dichloroethene	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
tert-Butyl methyl ether	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Acrylonitrile	3.297	6.424	(0.003)	(0.003)	1.732
n-Hexane	0.257	0.517	0.950	0.013	0.333
1,1-Dichloroethane	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
1,2-Epoxybutane	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
cis-1,2-Dichloroethene	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Chloroform	(0.001)	(0.001)	0.001	(0.001)	(0.001)
1,2-Dichloroethane	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Isooctane	(0.001)	(0.001)	0.042	(0.001)	0.006
Vinyl acetate	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
2-Butanone	0.014	0.019	(0.005)	(0.006)	0.025
1,1,1-Trichloroethane	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Carbon tetrachloride	(0.001)	(0.001)	0.003	(0.001)	(0.001)
Benzene	0.947	1.838	0.042	0.050	0.890
Trichloroethene	(0.001)	(0.001)	(0.001)	(0.001)	0.001
1,2-Dichloropropane	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Ethyl acrylate	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Methyl methacrylate	0.015	0.103	(0.001)	(0.001)	0.137
Bromodichloromethane	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
cis-1,3-Dichloropropene	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
trans-1,3-Dichloropropene	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)

( )-Estimated Detection Limit

Triangle Laboratories of RTP, Inc.
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Triangle Laboratories of RTP

Project Summary for Project 42284

Client ID:	VOST-3 SET 3 TUBEA/B T/TC	VOST-3 SET 4 TUBEA/B T/TC	VOST FB 2 TUBEA/B T/TC	VOST FB 3 TUBEA/B T/TC	VOST-4 SET 1 TUBEA/B T/TC
Filename :	HS370	HS371	HS349	HS350	HS372
TLI Id :	173-46-12A,B	173-46-13A,B	173-46-14A,B	173-46-15A,B	173-46-16A,B
Matrix :	VOST	VOST	VOST	VOST	VOST
Units :	ug	ug	ug	ug	ug
1,1,2-Trichloroethane	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Dibromochloromethane	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Ethylene dibromide	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Bromoform	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
4-Methyl-2-pentanone	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Toluene	0.351	1.099	0.051	0.011	0.433
Tetrachloroethene	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
2-Hexanone	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Chlorobenzene	0.009	0.012	(0.001)	(0.001)	0.006
Ethylbenzene	0.050	0.175	0.002	(0.001)	0.058
m-/p-Xylene	0.142	0.252	0.004	(0.001)	0.154
o-Xylene	0.048	0.092	0.002	(0.001)	0.062
Styrene	0.325	1.987	0.003	(0.001)	0.166
1,1,2,2-Tetrachloroethane	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Cumene	0.004	0.006	0.001	(0.001)	0.004

( )-Estimated Detection Limit

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Project Summary for Project 42284

Client ID:	VOST-4 SET 2 TUBEA/B T/TC	VOST-4 SET 3 TUBEA/B T/TC	VOST-4 SET 4 TUBEA/B T/TC	VOSTBLK 07 0897 T/TC	VOSTBLK 07 0997 T/TC
Filename :	HS373	HS374	HS375	HS348	HS364
TLI Id :	173-46-17A,B	173-46-18A,B	173-46-19A,B	VOSTBLK 0708	VOSTBLK 0709
Matrix :	VOST	VOST	VOST	VOST	VOST
Units :	ug	ug	ug	ug	ug
Chloromethane	0.300	0.192	0.209	(0.001)	(0.001)
Vinyl Chloride	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
1,3-Butadiene	0.421	0.246	0.259	(0.001)	(0.001)
Bromomethane	0.016	0.020	0.017	(0.001)	(0.001)
Chloroethane	0.053	0.092	0.235	(0.001)	(0.001)
Vinyl bromide	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Trichlorofluoromethane	0.033	0.037	0.025	(0.001)	(0.001)
1,1-Dichloroethene	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Iodomethane	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Carbon disulfide	0.744	0.398	0.511	(0.001)	(0.001)
Acetone	0.053	0.041	0.041	0.028	0.022
Allyl chloride	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Methylene chloride	0.358	0.771	0.070	0.007	0.014
trans-1,2-Dichloroethene	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
tert-Butyl methyl ether	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Acrylonitrile	2.295	0.618	0.816	(0.004)	(0.004)
n-Hexane	0.281	0.353	0.114	(0.001)	(0.001)
1,1-Dichloroethane	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
1,2-Epoxybutane	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
cis-1,2-Dichloroethene	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Chloroform	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
1,2-Dichloroethane	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Isooctane	(0.001)	0.017	(0.001)	(0.001)	(0.001)
Vinyl acetate	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
2-Butanone	0.027	0.011	0.023	(0.006)	(0.007)
1,1,1-Trichloroethane	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Carbon tetrachloride	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Benzene	1.519	1.139	1.205	0.026	0.037
Trichloroethene	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
1,2-Dichloropropane	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Ethyl acrylate	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Methyl methacrylate	0.218	0.016	0.020	(0.001)	(0.001)
Bromodichloromethane	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
cis-1,3-Dichloropropene	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
trans-1,3-Dichloropropene	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)

( )-Estimated Detection Limit

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Triangle Laboratories of RTP
Project Summary for Project 42284

Client ID:	VOST-4 SET 2 TUBEA/B T/TC	VOST-4 SET 3 TUBEA/B T/TC	VOST-4 SET 4 TUBEA/B T/TC	VOSTBLK 07 0897 T/TC	VOSTBLK 07 0997 T/TC
Filename :	HS373	HS374	HS375	HS348	HS364
TLI Id :	173-46-17A,B	173-46-18A,B	173-46-19A,B	VOSTBLK 0708	VOSTBLK 0709
Matrix :	VOST	VOST	VOST	VOST	VOST
Units :	ug	ug	ug	ug	ug
1,1,2-Trichloroethane	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Dibromochloromethane	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Ethylene dibromide	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Bromoform	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
4-Methyl-2-pentanone	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Toluene	0.621	0.435	0.428	0.008	0.009
Tetrachloroethene	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
2-Hexanone	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Chlorobenzene	0.011	0.006	0.007	(0.001)	(0.001)
Ethylbenzene	0.080	0.049	0.061	(0.001)	(0.001)
m-/p-Xylene	0.214	0.137	0.149	(0.001)	(0.001)
o-Xylene	0.090	0.059	0.062	(0.001)	(0.001)
Styrene	0.263	0.194	0.199	(0.001)	(0.001)
1,1,2,2-Tetrachloroethane	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Cumene	0.007	0.004	0.004	(0.001)	(0.001)

( )-Estimated Detection Limit

Triangle Laboratories of RTP, Inc.
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PACIFIC ENVIRONMENTAL SERVICES, INC.

Central Park West
5001 South Miami Boulevard, P.O. Box 12077
Research Triangle Park, North Carolina 27709-2077
(919) 941-0333 FAX: (919) 941-0234

Chain of Custody Record

Project Num: S407-003
Project Name: US EPA EMC/ESD LEAD SMELTER
Samplers: Abernathy
SW-846 M0030 (Volatile Organic Sampling Train)

Date	Time	Field Sample ID	Sample Description	8240	Combined Analysis						Remarks
6/25/97	1012	V-1-1-A	VOST Run 1 Set 1 Tube A	•	1						Analyze A+B
6/25/97	1012	V-1-1-B	VOST Run 1 Set 1 Tube B	•							TUBES TOGETHER
6/25/97	1026	V-1-2-A	VOST Run 1 Set 2 Tube A	•	2						
6/25/97	1026	V-1-2-B	VOST Run 1 Set 2 Tube B	•							
6/25/97	1046	V-1-3-A	VOST Run 1 Set 3 Tube A	•	3						
6/25/97	1046	V-1-3-B	VOST Run 1 Set 3 Tube B	•							
6/25/97	1109	V-1-4-A	VOST Run 1 Set 4 Tube A	•	4						
6/25/97	1109	V-1-4-B	VOST Run 1 Set 4 Tube B	•							
6/25/97	1530	V-FB1-A	~~VOST Field Blank 1 Tube A~~								BROKEN - NOT INCLUDED
6/25/97	1530	V-FB1-B	~~VOST Field Blank 1 Tube A~~	•							
6/25/97	1509	V-2-1-A	VOST Run 2 Set 1 Tube A	•	5						
6/25/97	1509	V-2-1-B	VOST Run 2 Set 1 Tube B	•							
6/25/97	1525	V-2-2-A	VOST Run 2 Set 2 Tube A	•	6						
6/25/97	1525	V-2-2-B	VOST Run 2 Set 2 Tube B	•							
6/25/97	1543	V-2-3-A	VOST Run 2 Set 3 Tube A	•	7						
6/25/97	1543	V-2-3-B	VOST Run 2 Set 3 Tube B	•							
6/25/97	1600	V-2-4-A	VOST Run 2 Set 4 Tube A	•	8						
6/25/97	1600	V-2-4-B	VOST Run 2 Set 4 Tube B	•							

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
	6/26/97	6/26/97	6/30/97		6/30/97 1545
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for lab by: (Signature)	REMARKS		

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PACIFIC ENVIRONMENTAL SERVICES, INC.

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Research Triangle Park, North Carolina 27709-2077
(919) 941-0333 FAX: (919) 941-0234

Chain of Custody Record

Project Num: S407-003
Project Name: US EPA EMC/ESD LEAD SMELTER
Samplers: McDonnell, Dickerson
Analysis Requested: SW-846 M0010 (Semi-volatiles)

Date	Time	Field Sample ID	Sample Description	8240	Analysis						Remarks
6/26/97	928	V-3-1-A	VOST Run 3 Set 1 Tube A	•	9						
6/26/97	928	V-3-1-B	VOST Run 3 Set 1 Tube B	•							
6/26/97	943	V-3-2-A	VOST Run 3 Set 2 Tube A	•	10						
6/26/97	943	V-3-2-B	VOST Run 3 Set 2 Tube B	•							
6/26/97	958	V-3-3-A	VOST Run 3 Set 3 Tube A	•	11						
6/26/97	958	V-3-3-B	VOST Run 3 Set 3 Tube B	•							
6/26/97	1013	V-3-4-A	VOST Run 3 Set 4 Tube A	•	12						
6/26/97	1013	V-3-4-B	VOST Run 3 Set 4 Tube B	•							
6/26/97	1400	V-FB2-A	VOST Field Blank 2 Tube A	•	13						
6/26/97	1400	V-FB2-B	VOST Field Blank 2 Tube A	•							
6/26/97	1400	V-FB3-A	VOST Field Blank 3 Tube A	•	14						
6/26/97	1400	V-FB3-B	VOST Field Blank 3 Tube A	•							
6/26/97	1420	V-4-1-A	VOST Run 4 Set 1 Tube A	•	15						
6/26/97	1420	V-4-1-B	VOST Run 4 Set 1 Tube B	•							
6/26/97	1436	V-4-2-A	VOST Run 4 Set 2 Tube A	•	16						
6/26/97	1436	V-4-2-B	VOST Run 4 Set 2 Tube B	•							
6/26/97	1457	V-4-3-A	VOST Run 4 Set 3 Tube A	•	17						
6/26/97	1457	V-4-3-B	VOST Run 4 Set 3 Tube B	•							

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
	6/26/97 PM	6/26/97	6/30/97		6/30/97 1545
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for lab by: (Signature)	REMARKS		

Page: 2 of 3

GI 6/30/97

IE JDD 7-28-97

19 20

COPY

PACIFIC ENVIRONMENTAL SERVICES, INC.

Central Park West
5001 South Miami Boulevard, P.O. Box 12077
Research Triangle Park, North Carolina 27709-2077
(919) 941-0333 FAX: (919) 941-0234

Chain of Custody Record

Project Num	Project Name			Analysis Requested							Remarks
S407-003	US EPA EMC/ESD LEAD SMELTER										
Samplers: McDonnell, Dickerson	SW-846 M0010 (Semi-volatiles)										
Date	Time	Field Sample ID	Sample Description	8240							
6/26/97	1511	V-4-4-A	VOST Run 4 Set 4 Tube A	•	18						
6/26/97	1511	V-4-4-B	VOST Run 4 Set 4 Tube B	•							

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[signature]	6/26/97 1900	[signature] 6/26/97	[signature] 6/30/97		[signature] 6/30/97 1545
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for lab by: (Signature)	REMARKS		

Page: 3 of 3

COPY CZ 6/30/97

TRIANGLE LABORATORIES, INC. -- LOG IN RECORD/CHAIN OF CUSTODY

Custody Seal : Absent
Chain of Custody : Present
Sample Tags : Absent
Sample Tag Numbers: Not Listed on Chain of Custody
SMO Forms : N/A

Sample Seals: Absent
Container...: Intact

TLI Project Number 42284
Client: PES03 - Pacific Environmental Services

Date Received 06/30/97 By

Carrier and Number

Book 173 Page 46

Ice Chest ICE Temp 20.0 C

TLI Number.. mR/H:CPM.	Client Sample ID..... Client COC ID..... *	Matrix Location.....	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	DISPOSED Date/Init
173-46-1A	VOST-1 SET 1 TUBEA V-1 1-A *	TENAX R026									
173-46-1B	VOST-1 SET 1 TUBEB V-1 1-B *	TNX/CHAR R026									
173-46-2A	VOST-1 SET 2 TUBEA V-1 2-A *	TENAX R026									
173-46-2B	VOST-1 SET 2 TUBEB V-1 2-B *	TNX/CHAR R026									
173-46-3A	VOST-1 SET 3 TUBEA V-1 3-A *	TENAX R026									
173-46-3B	VOST-1 SET 3 TUBEB V-1 3-B *	TNX/CHAR R026									
173-46-4A	VOST-1 SET 4 TUBEA V-1 4-A *	TENAX R026									
173-46-4B	VOST-1 SET 4 TUBEB V-1 4-B *	TNX/CHAR R026									
173-46-5	VOST FB SET1 TUBE B V-FB1-B *	TNX/CHAR R026									
173-46-6A	VOST-2 SET 1 TUBEA V-2 1-A *	TENAX R026									
173-46-6B	VOST-2 SET 1 TUBEB V-2 1-B *	TNX/CHAR R026									
173-46-7A	VOST-2 SET 2 TUBEA V-2 2-A *	TENAX R026									
173-46-7B	VOST-2 SET 2 TUBEB V-2 2-B *	TNX/CHAR R026									
173-46-8A	VOST-2 SET 3 TUBEA V-2 3-A *	TENAX R026									

Receiving Remarks:

Archive Remarks:

TRIANGLE LABORATORIES, INC. -- LOG IN RECORD/CHAIN OF CUSTODY

Custody Seal : Absent
Chain of Custody : Present
Sample Tags : Absent
Sample Tag Numbers: Not Listed on Chain of Custody
SMO Forms : N/A

Sample Seals: Absent
Container...: Intact

TLI Project Number 42284
Client: PES03 - Pacific Environmental Services

Date Received 06/20/97 By

Carrier and Number

Book 173 Page 46

Ice Chest ICE Temp 20.0 C

TLI Number.. mR/H:CPM.	Client Sample ID..... Client COC ID..... *	Matrix Location.....	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	DISPOSED Date/Init
173-46-8B	VOST-2 SET 3 TUBEB V-2 3-B *	TNX/CHAR R026									
173-46-9A	VOST-2 SET 4 TUBEA V-2 4-A *	TENAX R026									
173-46-9B	VOST-2 SET 4 TUBEB V-2 4-B *	TNX/CHAR R026									
173-46-10A	VOST-3 SET 1 TUBEA V-3 1-A *	TENAX R026									
173-46-10B	VOST-3 SET 1 TUBEB V-3 1-B *	TNX/CHAR R026									
173-46-11A	VOST-3 SET 2 TUBEA V-3 2-A *	TENAX R026									
173-46-11B	VOST-3 SET 2 TUBEB V-3 2-B *	TNX/CHAR R026									
173-46-12A	VOST-3 SET 3 TUBEA V-3 3-A *	TENAX R026									
173-46-12B	VOST-3 SET 3 TUBEB V-3 3-B *	TNX/CHAR R026									
173-46-13A	VOST-3 SET 4 TUBEA V-3 4-A *	TENAX R026									
173-46-13B	VOST-3 SET 4 TUBEB V-3 4-B *	TNX/CHAR R026									
173-46-14A	VOST FB 2 TUBEA V-FB2-A *	TENAX R026									
173-46-14B	VOST FB 2 TUBEB V-FB2-B *	TNX/CHAR R026									
173-46-15A	VOST FB 3 TUBEA V-FB3-A *	TENAX R026									

Receiving Remarks:

Archive Remarks:

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TRIANGLE LABORATORIES, INC. -- LOG IN RECORD/CHAIN OF CUSTODY

Custody Seal : Absent
Chain of Custody : Present
Sample Tags : Absent
Sample Tag Numbers: Not Listed on Chain of Custody
SMO Forms : N/A

Sample Seals: Absent
Container...: Intact

TLI Project Number 42284
Client: PES03 - Pacific Environmental Services

Date Received 06/30/97 By

Carrier and Number

Book 173

Page 46

Ice Chest ICE Temp 20.0 C

TLI Number.. mR/H:CPM.	Client Sample ID..... Client COC ID.....*	Matrix Location.....	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	DISPOSED Date/Init
173-46-15B	VOST FB 3 TUBEB V-FB3-B *	TNX/CHAR R026									
173-46-16A	VOST-4 SET 1 TUBEA V-4 1-A *	TENAX R026									
173-46-16B	VOST-4 SET 1 TUBEB V-4 1-B *	TNX/CHAR R026									
173-46-17A	VOST-4 SET 2 TUBEA V-4 2-A *	TENAX R026									
173-46-17B	VOST-4 SET 2 TUBEB V-4 2-B *	TNX/CHAR R026									
173-46-18A	VOST-4 SET 3 TUBEA V-4 3-A *	TENAX R026									
173-46-18B	VOST-4 SET 3 TUBEB V-4 3-B *	TNX/CHAR R026									
173-46-19A	VOST-4 SET 4 TUBEA V-4 4-A *	TENAX R026									
173-46-19B	VOST-4 SET 4 TUBEB V-4 4-B *	TNX/CHAR R026									

Receiving Remarks:

Archive Remarks:

Form Revised 05/27/1997 -- Page 3 OF 3

Triangle Laboratories, Inc.
Run Log

Column Type	Column #	Analysis*	Acquisition Method	GC Method*	Find DBs*	Other*
DB624	3274056	8240	VOA	SHORT	M0031	NTRCAA

Standards		
Internal / Surrogate / Recovery	Internal / Surrogate / Recovery	Analyte
VS8-109-1 exp 7/21/97 / VS8-109-2 exp 7/21/97		

Extract / Sample volume _____ µL mL (Circle unit)

Carl S. Anderson 7/8/97
Signature Date

Date**	Time**	Project	Sample#	Client ID	Filename	pH*	Operator/Date	Backup*	Proc	Comments***
7/8/97	11:52	42273C	173-35-4A	M0031-4A 212117 T	HS334		CA 7/8/97	CA 7/10/97	CA	Lots of moisture purged out
	12:17	42273C	173-35-5A	M0031-5A 212120 T	HS335		CA 7/8/97		CA	
	1241	42273C	173-35-6A	M0031-6A 212127 T	HS336		CA 7/8/97		CA	
	1306		2.0 ul VS8-106-4 exp. 7/14/97	BFB	HS337		Jch 7/8/97		Jch	SCAN #445
	1341	2.5 ul VS8-107-3 exp. 7/21/97	10 ul VS8-106-1 exp. 7/9/97	VOSTD0.25 T/TC	HS338		Jch 7/8/97		Jch	
	1431	1.0 ul VS8-107-3 exp. 7/21/97	10 ul VS8-104-2 exp. 7/9/97	VOSTD0.10 T/TC	HS339		Jch 7/8/97		Jch	ICAL pt.
	1510	5.0 ul VS8-107-3 exp. 7/21/97	10 ul VS8-104-4 exp. 7/9/97	VOSTD0.50 T/TC	HS340		Jch 7/8/97		Jch	ICAL pt.
	1531	7.5 ul VS8-107-3 exp. 7/21/97	10 ul 105-2 VS8-105-5 exp. 7/9/97	VOSTD0.75 T/TC	HS341		Jch 7/8/97		Jch	ICAL pt.
	1601	10 ul VS8-107-3 exp. 7/21/97	10 ul VS8-105-3 exp. 7/9/97	VOSTD1.00 T/TC	HS342		Jch 7/8/97		Jch	ICAL pt.
	16:42	2.5 ul VS8-107-3 exp. 7/21/97	10 ul VS8-109-5 exp. 7/21/97	VOSTD0.25 T/TC	HS343		Jch 7/8/97		Jch	ICAL pt.

* Volatile Data Only ** Transcribed Data *** Dated Signature/Initials Required

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Triangle Laboratories, Inc.
Run Log

Column Type	Column #	Analysis*	Acquisition Method	GC Method*	Find DBs*	Other*
DB624	3274056	8240	VOA	Short	NT2CAA	

Standards		
Internal / Surrogate / Recovery	Internal / Surrogate / Recovery	Analyte
VS8-106-4 Exp. 7-16-97 @25ug/ml		

Extract / Sample volume 5 µL (mL) — Circle unit

Angela S. Brown 7/8/97
Signature Date

Date**	Time**	Project	Sample#	Client ID	Filename	pH*	Operator/Date	Backup*	Proc	Comments***
7/8/97	17:23	2.5ul VS8-107-3 Exp. 7-21-97	10.0ul VS8-107-3 Exp. 7-21-97	VOSTD0.25 T/TC	HS344		ABB 7/8/97	to 7/10/97	ABB	
	17:59		10.0ul VS8-106-4 Exp. 7-16-97	VOSTBLK T/TC	HS345		ABB 7/8/97		ABB	
	18:29		↓	VOSTBLK T/TC	HS346		ABB 7/8/97		ABB	
	19:07		↓	VOSTBLK T/TC	HS347		ABB 7/8/97		ABB	
	20:22		↓	VOSTBLK T/TC	HS348		ABB 7/8/97		ABB	
	21:02	42284	173-46-14A/B	VOST FB 2 Tube A/B T/TC	HS349		ABB 7/8/97		ABB	
	21:29	42284	173-46-15A/B	VOST FB 3 Tube A/B T/TC	HS350		ABB 7/8/97		ABB	
	21:53	42284	173-46-1A/B	VOST-1 Set 1 Tube A/B T/TC	HS351		ABB 7/8/97		ABB	
	22:19	42284	173-46-2A/B	VOST-1 Set 2 Tube A/B T/TC	HS352		ABB 7/8/97		ABB	
↓	22:43	42284	173-46-3A/B	VOST-1 Set 3 Tube A/B T/TC	HS353		ABB 7/8/97	↓	ABB	

* Volatile Data Only ** Transcribed Data *** Dated Signature/Initials Required

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SRVR1\QA\FORMS\LRRUNLOG.DOC (1/23/97)

Triangle Laboratories, Inc.
Run Log

Column Type	Column #	Analysis*	Acquisition Method	GC Method*	Find DBs*	Other*
DB624	3274056	8240	VOA	Short	NT2CAA	

Standards		
Internal / Surrogate / Recovery	Internal / Surrogate / Recovery	Analyte
VS8-106-4 Exp. 7-16-97 @ 25ug/ml		

Extract / Sample volume 5 µL mL (Circle unit)

Signature: [illegible] Date: 7/8/97

Date**	Time**	Project	Sample#	Client ID	Filename	pH*	Operator/Date	Backup*	Proc	Comments***
7/8/97	23:07	42284	173-46-4A/B	Vost-1 Set 4 T/TC Tube A/B	HS354		[illegible] 7/8/97	10 7/10/97	[illegible]	
↓	23:53	42284	173-46-6A/B	Vost-2 set 1 T/TC Tube A/B	HS355		[illegible] 7/8/97		[illegible]	
7/9/97	07:28		2.0D VS8-100-4 Exp 7/16/97	BFB	HS356		CA 7/9/97		CA	
	—	25L VS9-107-3 Exp 7/21/97	10.0D VS9-104-3 Exp 7/21/97	VOSTD0.25 T/TC	HS357		CA 7/9/97		CA	DAKE out method w/ condensed lines
	—	↓	↓	↓	HS358		CA 7/9/97		CA	↓
	—				HS359		CA 7/9/97		CA	
	10:10		2.0D VS8-106-4 Exp 7/16/97	BFB	HS360		CA 7/9/97		[illegible]	SCAN #448
	10:31	25L VS8-107-3 Exp. 7-21-97	10.0uL VS8-104-3 Exp. 7-21-97	VOSTD0.25 T/TC	HS361		[illegible] 7/9/97		[illegible]	
	11:39	↓	↓	VOSTD0.25 T/TC	HS362		[illegible] 7/9/97		[illegible]	
	12:17		2.0D VS8-106-4 Exp 7/16/97	VOSCBLK T/TC	HS363		CA 7/9/97		[illegible]	

* Volatile Data Only ** Transcribed Data *** Dated Signature/Initials Required

SRVR1\QA\FORMS\LRRUNLOG.DOC (1/23/97)

Triangle Laboratories, Inc.
Run Log

Column Type	Column #	Analysis*	Acquisition Method	GC Method*	Find DBs*	Other*
DB624	3274056	8240	VOA	SHort	NT2CAA	

Standards		
Internal / Surrogate / Recovery	Internal / Surrogate / Recovery	Analyte
VS8-106-4 exp 7/16/97 @ 26 pmL		

Extract / Sample volume 5 µL mL (Circle unit)

Carl S. Anderson 7/9/97
Signature Date

Date**	Time**	Project	Sample#	Client ID	Filename	pH*	Operator/Date	Backup*	Proc	Comments***
7/9/97	12:46		10.0 ul VS8-106-4 Exp. 7-16-97	VOSTBLK T/TC	HS364		CA 7/9/97	CA 7/10/97	ASB	
	13:18	42284	173-46-7A/B	Vost-2 Set 2 Tube A/B T/TC	HS365	•	ASB 7/9/97		ASB	
	13:45	42284	173-46-8A/B	Vost-2 Set 3 Tube A/B T/TC	HS366		ASB 7/9/97		ASB	
	14:12	42284	173-46-9A/B	Vost-2 Set 4 Tube A/B T/TC	HS367		ASB 7/9/97		ASB	
	14:39	42284	173-46-10A/B	Vost-3 Set 1 Tube A/B T/TC	HS368		ASB 7/9/97		ASB	
	15:07	42284	173-46-11A/B	Vost-3 Set 2 Tube A/B T/TC	HS369		ASB 7/9/97		ASB	
	15:32	42284	173-46-12A/B	Vost-3 Set 3 Tube A/B T/TC	HS370		ASB 7/9/97		ASB	
	15:56	42284	173-46-13A/B	Vost-3 Set 4 Tube A/B T/TC	HS371		ASB 7/9/97		ASB	
	16:20	42284	173-46-16A/B	Vost-4 Set 1 Tube A/B T/TC	HS372		ASB 7/9/97		ASB	
	16:44	42284	173-46-17A/B	Vost-4 Set 2 Tube A/B T/TC	HS373		ASB 7/9/97		ASB	

* Volatile Data Only ** Transcribed Data *** Dated Signature/Initials Required

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SRVR1\\QA\FORMS\LRRUNLOG.DOC (1/23/97)

Triangle Laboratories, Inc.
Run Log

Column Type	Column #	Analysis*	Acquisition Method	GC Method*	Find DBs*	Other*
DB624	3274056	8240	VOA	Short	NT2CAA	M0031

Standards		
Internal / Surrogate / Recovery	Internal / Surrogate / Recovery	Analyte
VS8-106-4 Exp. 7-16-97 @ 25ug/ml		

Extract / Sample volume 5 µL (mL) Circle unit

Angela S. Brown 7/9/97
Signature Date

Date**	Time**	Project	Sample#	Client ID	Filename	pH*	Operator/Date	Backup*	Proc	Comments***
7/9/97	17:14	42284	173-46-18A/B	VOST-4 Set 3 Tube A/B T/TC	HS374		ASB 7/9/97	10 7/10/97	ASB	
/	18:02	42284	173-46-19A/B	VOST-4 Set 4 Tube A/B T/TC	HS375		ASB 7/9/97		ASB	
	1911	42335	173-97-A/B	Run 1.2	HS376		JL 7/9/97		JL	Baked extra
	2011	5.0 µl VS8-105-4 exp. 7/10/97	10 µl VS8-106-4 exp. 7/10/97	LCS	HS377		JL 7/9/97		JL	contamination
	2045	↓	↓	LCS	HS378		JL 7/9/97		JL	Is low / contamin.
7/10/97	07:18		2.0 µl VS8-106-4 exp 7/16/97	BFB	HS379		CA 7/10/97		CA	
	07:52		10 µl VS8-100-4 exp 7/16/97	System Blank	HS380		CA 7/10/97	7/11/97	CA	
	08:55		↓	↓	HS381		CA 7/10/97		CA	
	09:23	2.5 µl VS8-107-2 exp 7/21/97	10 µl VS8-107-1 exp 7/21/97	VS6D050	HS382		CA 7/10/97		CA	2.5 µl VS8-107-3 exp 7/21/97 Bakeout
		↓	↓	↓	HS383		CA 7/10/97		CA	

* Volatile Data Only ** Transcribed Data *** Dated Signature/Initials Required

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SRVR1\\QA\FORMS\LRRUNLOG.DOC (1/23/97)

Pacific Environmental Services

Project Number: 42284 | **Method 8240A VOST**
Sample File: HS351 | **Sample ID: VOST-1 SET 1 TUBEA/B T/TC**

Client Project: S407-003 | **Date Received: 06/30/97** | **Response File: ICALH708**
TLI ID: 173-46-1A,B
Date Analyzed : 07/08/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
Bromochloromethane		IS 1	4.51		
Chloromethane	0.169		0.94		0.05
Vinyl Chloride		U		0.001	0.05
1,3-Butadiene	0.122		1.09		0.05
Bromomethane	0.017	J	1.43		0.05
Chloroethane		U		0.001	0.05
Vinyl bromide		U		0.001	0.05
Trichlorofluoromethane	1.461	E	1.85		0.05
1,1-Dichloroethene		U		0.001	0.05
Iodomethane		U		0.001	0.05
Carbon disulfide	0.322		2.51		0.05
Acetone	0.108	B	2.58		0.05
Allyl chloride		U		0.001	0.05
Methylene chloride	1.385	BE	2.98		0.05
trans-1,2-Dichloroethene		U		0.001	0.05
tert-Butyl methyl ether		U		0.001	0.05
Acrylonitrile		U		0.003	0.05
n-Hexane	0.412		3.57		0.05
1,1-Dichloroethane		U		0.001	0.05
1,2-Epoxybutane		U		0.003	0.05
cis-1,2-Dichloroethene		U		0.001	0.05
Chloroform	0.007	J	4.66		0.05
1,2-Dichloroethane		U		0.001	0.05
Isooctane	0.018	J	5.30		0.05
1,4-Difluorobenzene		IS 2	5.67		
Vinyl acetate		U		0.001	0.05

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

Triangle Laboratories of RTP, Inc.
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

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Printed: 15:01 07/22/1997

Pacific Environmental Services

Project Number: 42284 | **Method 8240A VOST**
Sample File: HS351 | **Sample ID: VOST-1 SET 1 TUBEA/B T/TC**

Client Project: S407-003 | **Date Received: 06/30/97** | **Response File: ICALH708**
TLI ID: 173-46-1A,B
Date Analyzed : 07/08/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
2-Butanone	0.011	J	4.39		0.05
1,1,1-Trichloroethane	0.006	J	4.75		0.05
Carbon tetrachloride	0.004	J	4.93		0.05
Benzene	0.810	B	5.14		0.05
Trichloroethene		U		0.001	0.05
1,2-Dichloropropane		U		0.001	0.05
Ethyl acrylate	0.016	J	6.23		0.05
Methyl methacrylate	0.258		6.49		0.05
Bromodichloromethane		U		0.001	0.05
cis-1,3-Dichloropropene		U		0.001	0.05
trans-1,3-Dichloropropene		U		0.001	0.05
1,1,2-Trichloroethane		U		0.001	0.05
Dibromochloromethane		U		0.001	0.05
Ethylene dibromide		U		0.001	0.05
Bromoform		U		0.001	0.05
Chlorobenzene-d_5		IS 3	9.79		
4-Methyl-2-pentanone		U		0.001	0.05
Toluene	0.284	B	7.60		0.05
Tetrachloroethene		U		0.001	0.05
2-Hexanone		U		0.001	0.05
Chlorobenzene	0.003	J	9.84		0.05
Ethylbenzene	0.057		10.12		0.05
m-/p-Xylene	0.108		10.36		0.10
o-Xylene	0.039	J	11.06		0.05
Styrene	0.242		11.11		0.05
1,1,2,2-Tetrachloroethane		U		0.001	0.05

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

Triangle Laboratories of RTP, Inc.
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

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Printed: 15:01 07/22/1997

Pacific Environmental Services

Project Number: 42284 | Method 8240A VOST
Sample File: HS351 | Sample ID: VOST-1 SET 1 TUBEA/B T/TC

Client Project: S407-003 | Date Received: 06/30/97 | Response File: ICALH708
TLI ID: 173-46-1A,B
Date Analyzed : 07/08/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ng
Cumene	0.007	J	11.85		0.05

Surrogate Summary	Amount (ug)	RT	IS Ref	%REC
1,2-Dichloroethane-d_4	0.277	5.11	1	111
Benzene-d_6	0.286	5.10	2	114
Toluene-d_8	0.281	7.51	3	112

Reviewed by TW Date 7/22/97

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

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Savar v3.5
Printed: 15:01 07/22/1997

Pacific Environmental Services

Project Number: 42284 Method 8240A
Sample File: HS351 Sample ID: VOST-1 SET 1 TUBEA/B T/TC

Client Project:	S407-003	Date Received:	06/30/97
TLI ID:	173-46-1A,B	Date Analyzed:	07/08/97
	Dilution Factor:	1.00	

Tentatively Identified Compounds

Name	RT	Area	IS RT	IS Area	Amount, ug
1 Methylbutane Isomer	1.640	136906976	4.511	5104886	6.705
2 Hexamethylcyclotrisiloxane	8.691	96524680	9.791	10613405	2.274
3 Unknown	0.72	33730636	4.511	5104886	1.652
4 C4H8 Isomer	1.03	10855208	4.511	5104886	0.532
5 C5H8 Isomer	2.210	7988264	4.511	5104886	0.391
6 Methyl Propane Isomer	0.87	5992627	4.511	5104886	0.293
7 Pentane	1.96	4933298	4.511	5104886	0.242
8 Tetrahydrodimethyl Pyranone Isomer	4.120	3436458	4.511	5104886	0.168
9 C6H12 Isomer	3.48	2442128	4.511	5104886	0.120

Triangle Laboratories, Inc.
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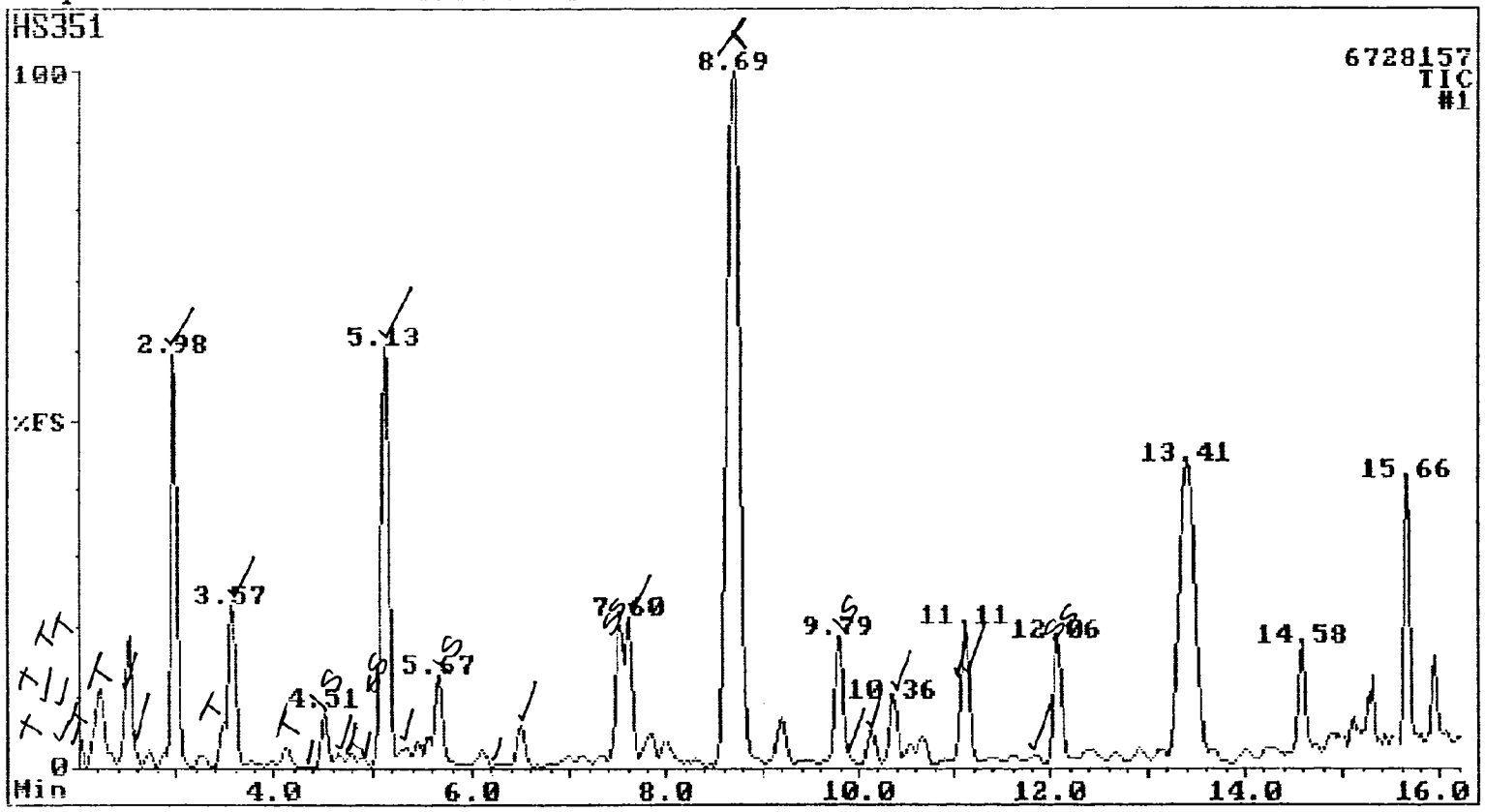
07-08-97 21:53 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 1 TUBEA/B T/TC 173-46-1A/B TLI#42284 Instrument H



Data Review: TW
Date: 7-17-97

QUAN DB : HS351 LAB-BASE QUAN 07-08-97 22:24

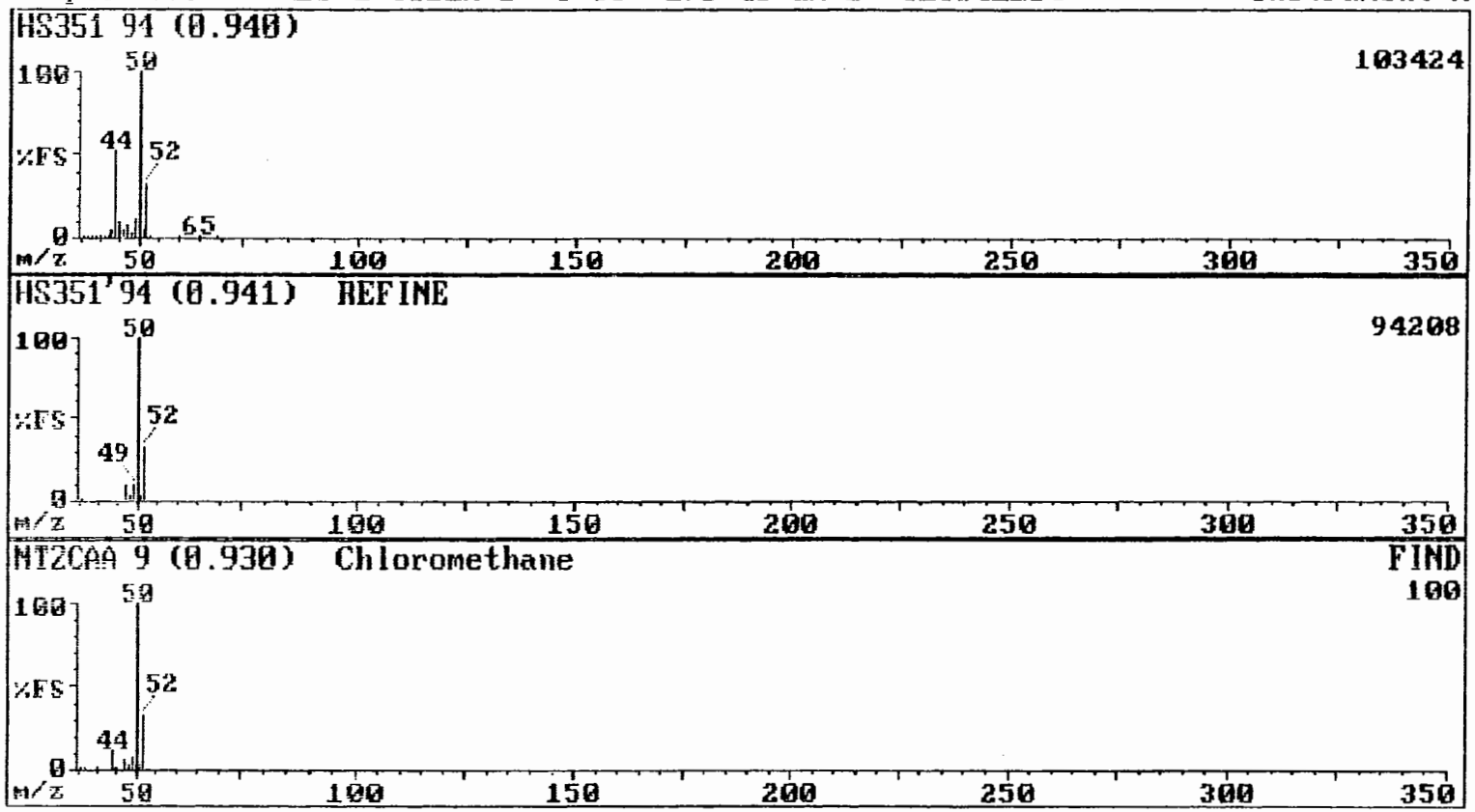
No.	MAT	FOR	REV	Delta	Area	P.Flags	RT	QM	Name
1	100	91	99	0	359816	bb	4.51	128	Bromochloromethane
2	100	92	97	1	2204376	bb	5.67	114	1,4-Difluorobenzene
3	100	96	98	-3	2834564	bv	9.79	117	Chlorobenzene-d5
4	58	23	70	1	1073968	bv	5.11	65	1,2-Dichloroethane-d4
5	100	82	84	0	2918552	bv	5.10	84	Benzene-d6
6	100	90	98	1	3619080	bv	7.51	98	Toluene-d8
~~7~~	~~28~~	~~11~~	~~37~~	~~-15~~	~~38160~~	~~vv~~	~~12.39~~	98	o-Xylene-d10
8	100	87	94	0	1802496	vv	12.06	95	4-Bromofluorobenzene
9	100	85	92	1	510304	vv	0.94	50	Chloromethane
10	0	0	0	0	0		0.00	62	Vinyl Chloride
11	~~100~~	~~70~~	~~100~~	~~0~~	~~[illegible]~~	~~A~~	~~1.02~~ 1.09	39	1,3-Butadiene
12	89	49	95	1	53160	bb	1.43	94	Bromomethane
13	0	0	0	0	0		0.00	64	Chloroethane
14	0	0	0	0	0		0.00	106	Vinyl bromide
15	100	92	99	1	6042424	bb	1.85	101	Trichlorofluoromethane
16	0	0	0	0	0		0.00	96	1,1-Dichloroethene
17	0	0	0	0	0		0.00	142	Iodomethane
18	100	79	99	1	2921032	bv	2.51	76	Carbon disulfide
19	78	47	81	1	202534	vb	2.58	43	Acetone
20	0	0	0	0	0		0.00	76	Allyl chloride
21	100	90	98	1	3926276	bv	2.98	84	Methylene chloride
22	0	0	0	0	0		0.00	96	trans-1,2-Dichloroethene
~~23~~	~~55~~	~~44~~	~~48~~	~~3~~	~~5340~~	~~bb~~	~~3.34~~	73	tert-Butyl methyl ether
~~24~~	~~26~~	~~8~~	~~35~~	~~1~~	~~15582~~	~~bv~~	~~3.26~~	53	Acrylonitrile
25	100	98	100	0	2772796	bv	3.57	57	n-Hexane
26	0	0	0	0	0		0.00	63	1,1-Dichloroethane
~~27~~	~~58~~	~~47~~	~~57~~	~~7~~	~~134189~~	~~vv~~	~~4.12~~	42	1,2-Epoxybutane
28	0	0	0	0	0		0.00	96	cis-1,2-Dichloroethene
29	47	11	64	0	39600	bv	4.66	83	Chloroform
30	0	0	0	0	0		0.00	62	1,2-Dichloroethane
31	94	60	91	1	419180	bv	5.30	57	Isooctane
~~32~~	~~34~~	~~31~~	~~62~~	~~-28~~	~~2235863~~	~~bv~~	~~3.57~~	43	Vinyl acetate
33	92	72	75	0	3784	A	4.39	72	2-Butanone
34	38	14	48	-1	26308	bb	4.75	97	1,1,1-Trichloroethane
35	29	10	37	1	14348	bb	4.93	117	Carbon tetrachloride
36	100	91	99	0	9053578	bv	5.14	78	Benzene
37	0	0	0	0	0		0.00	130	Trichloroethene
~~38~~	~~19~~	~~18~~	~~42~~	~~31~~	~~640512~~	~~A~~	~~5.67~~	~~63~~	1,2-Dichloropropane
39	69	43	70	1	71876	A	6.23	55	Ethyl acrylate
40	100	96	99	-1	550304	vv	6.49	69	Methyl methacrylate
41	0	0	0	0	0		0.00	83	Bromodichloromethane
42	0	0	0	0	0		0.00	75	cis-1,3-Dichloropropene
43	0	0	0	0	0		0.00	75	trans-1,3-Dichloropropen
44	0	0	0	0	0		0.00	97	1,1,2-Trichloroethane
45	0	0	0	0	0		0.00	129	Dibromochloromethane
46	0	0	0	0	0		0.00	107	Ethylene dibromide
47	0	0	0	0	0		0.00	173	Bromoform
~~48~~	~~53~~	~~5~~	~~84~~	~~3~~	~~71699~~	~~A~~	~~7.52~~	43	4-Methyl-2-pentanone
49	100	94	99	1	2383344	bv	7.60	92	Toluene
50	0	0	0	0	0		0.00	164	Tetrachloroethene

Data Review: TW
Date: 7-17-97

No.	MAT	FOR	REV	Delta	Area	P.Flags	RT	QM	Name
~~51~~	~~33~~	~~7~~	~~51~~	~~10~~	~~174445~~	~~vv~~	~~8.71~~	43	2-Hexanone
52	48	15	63	1	36824	bb	9.84	112	Chlorobenzene
53	100	89	98	0	332296	bv	10.12	106	Ethylbenzene
54	100	86	94	0	782144	vv	10.36	106	m-/p-Xylene
55	97	76	83	0	269684	bv	11.06	106	o-Xylene
56	100	94	98	0	2763012	bv	11.11	104	Styrene
~~57~~	~~18~~	~~4~~	~~47~~	~~19~~	~~20904~~	~~p~~	~~12.32~~	83	1,1,2,2-Tetrachloroeth
58	68	39	73	1	167072	vv	11.85	105	Cumene

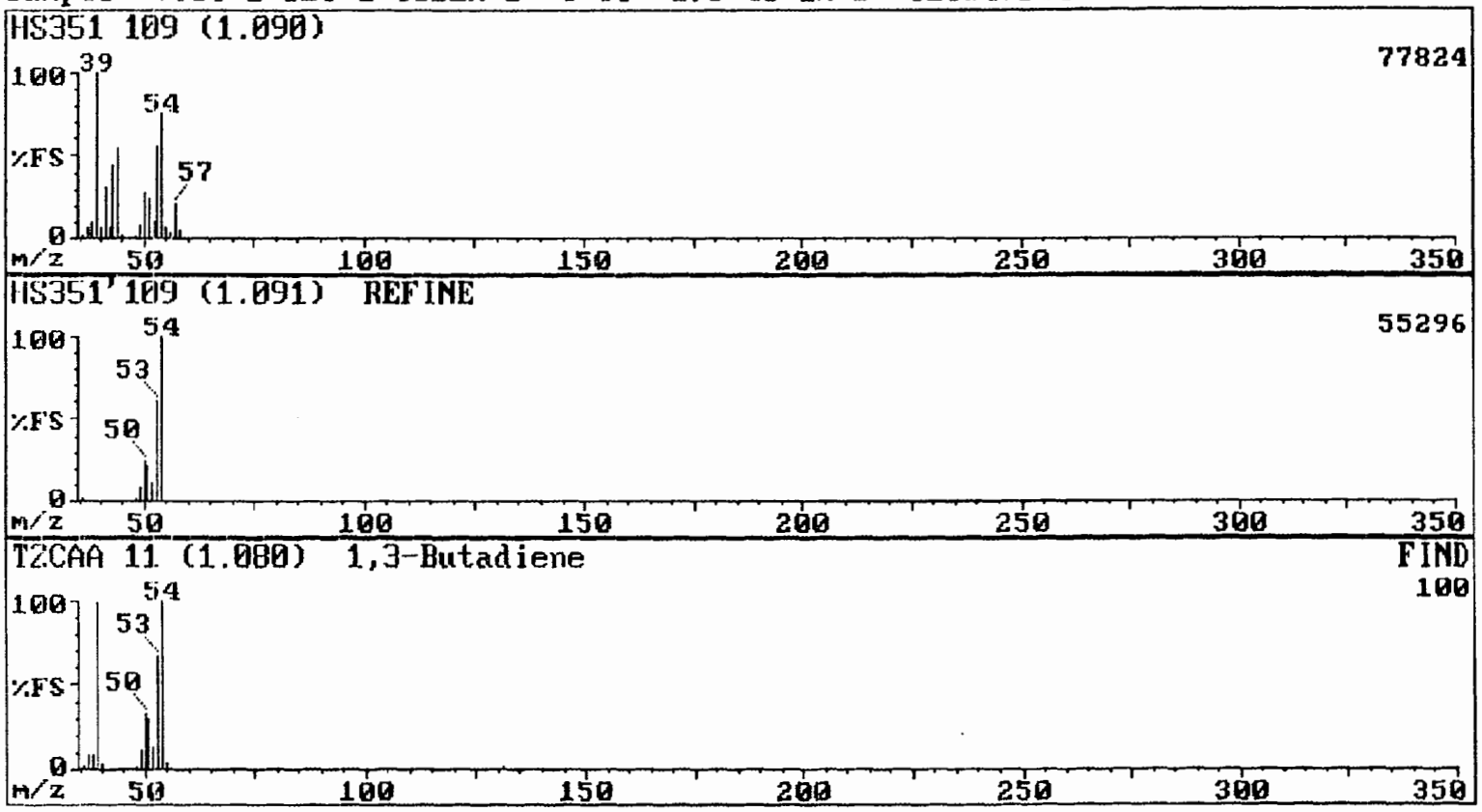
07-08-97 21:53 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 1 TUBEA/B T/TC 173-46-1A/B TLI#42284 Instrument H



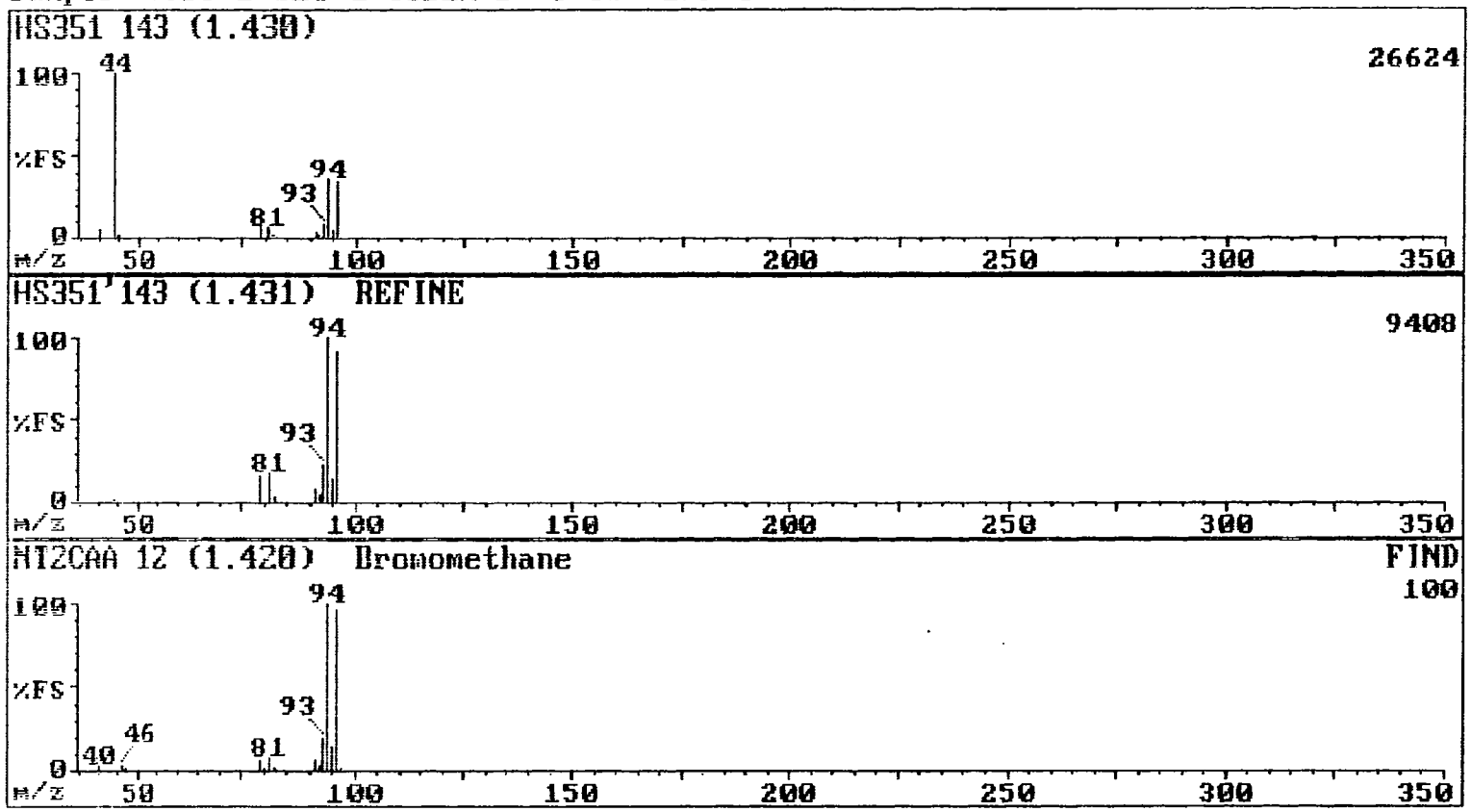
08-Jul-97 21:53 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 1 TUBEA/B T/TC 173-46-1A/B TLI#42284 Instrument H



07-08-97 21:53 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 1 TUBEA/B T/TC 173-46-1A/B TLI#42284 Instrument H



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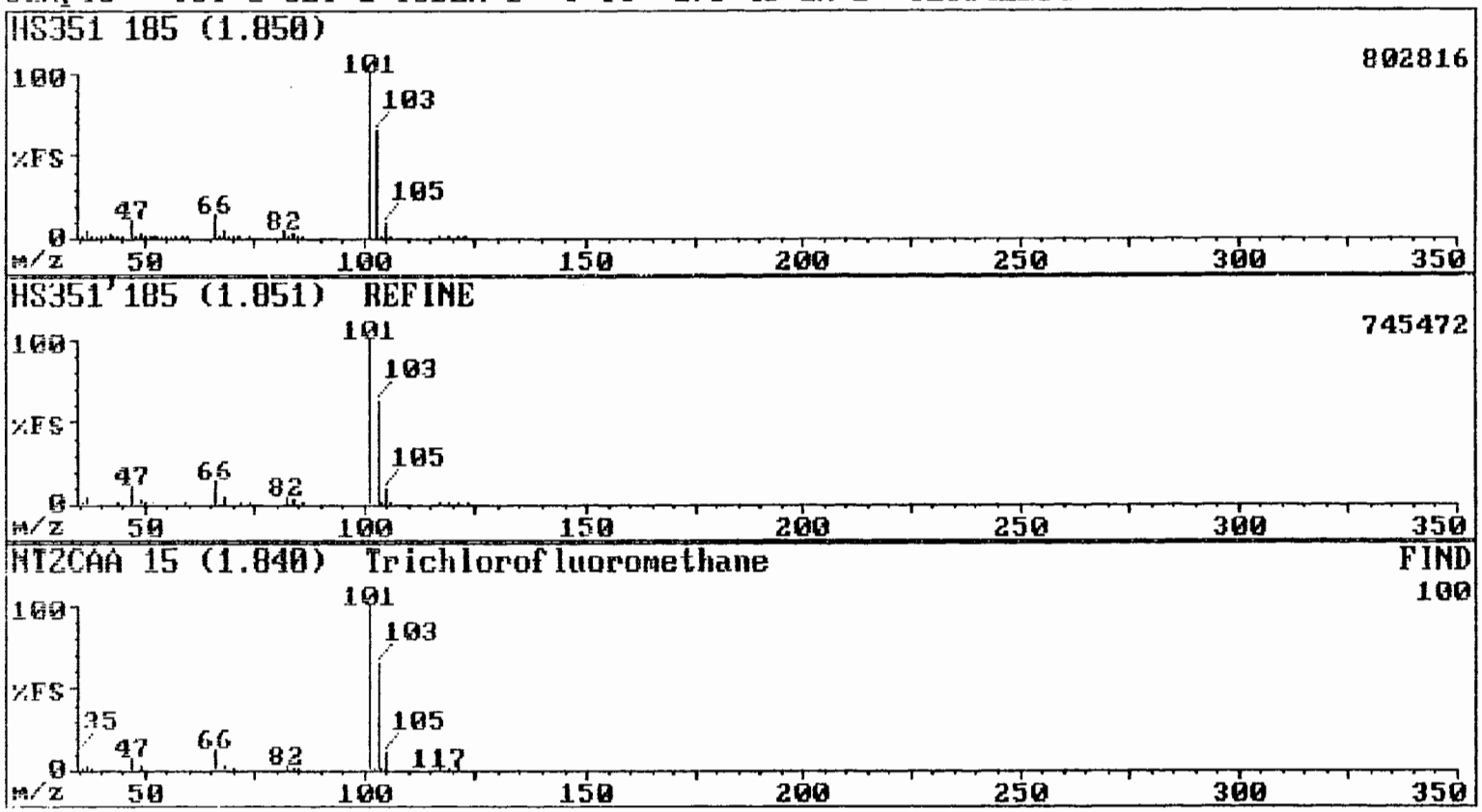
Sample: VOST-1 SET 1 TUBEA/B T/TC 173-46-1A/B TLI#42284 Instrument H



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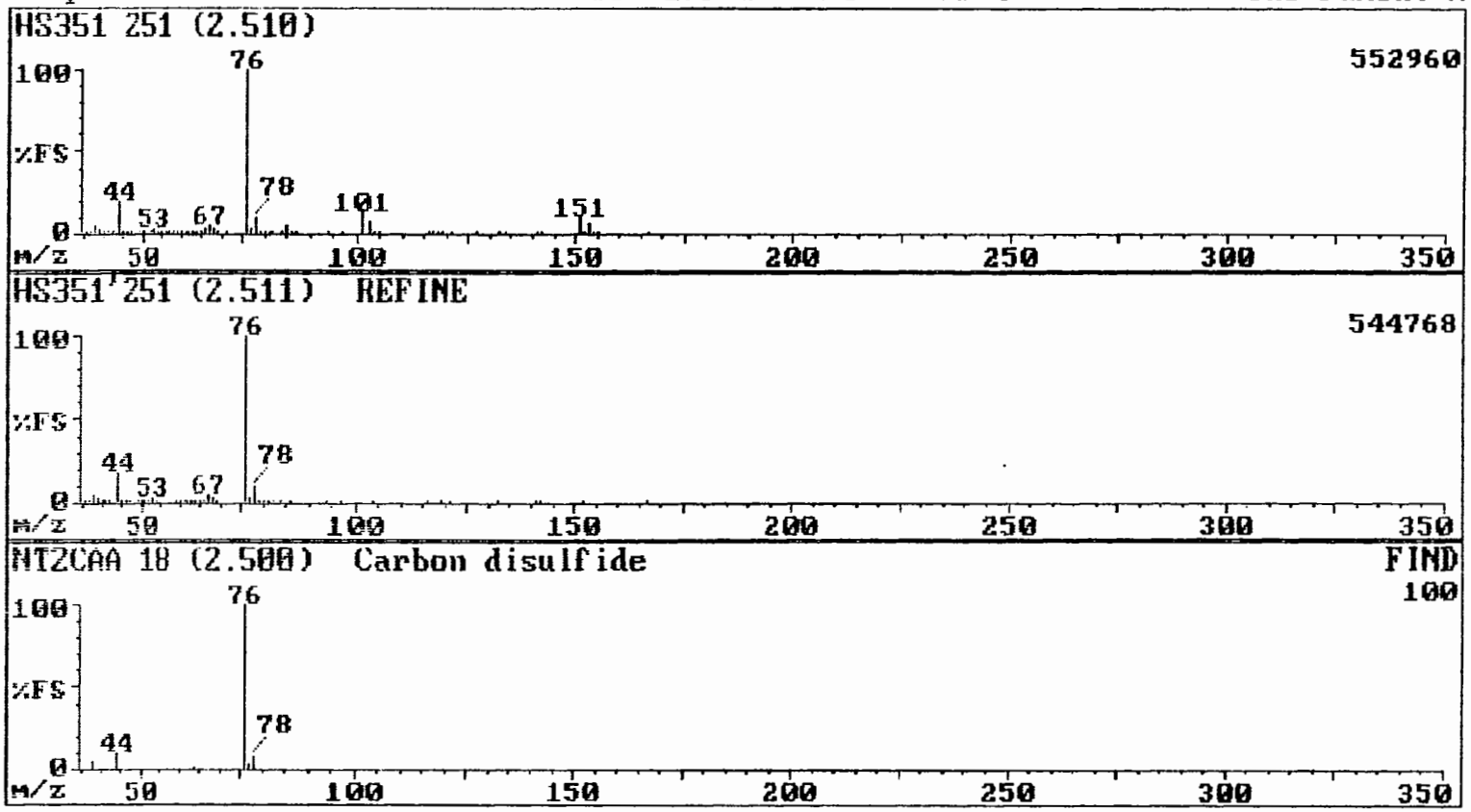
Sample: VOST-1 SET 1 TUBEA/B T/TC 173-46-1A/B TLI#42284 Instrument H



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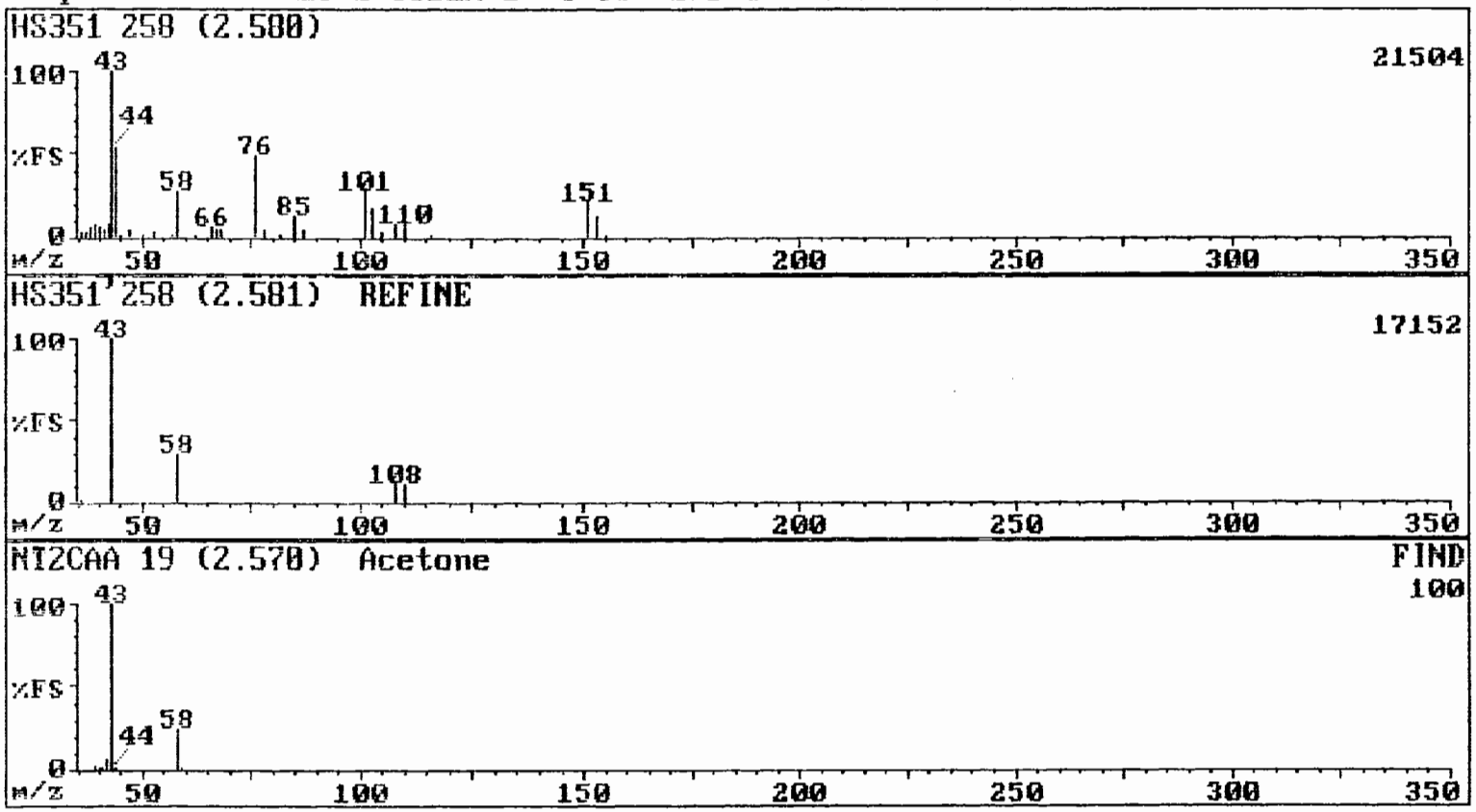

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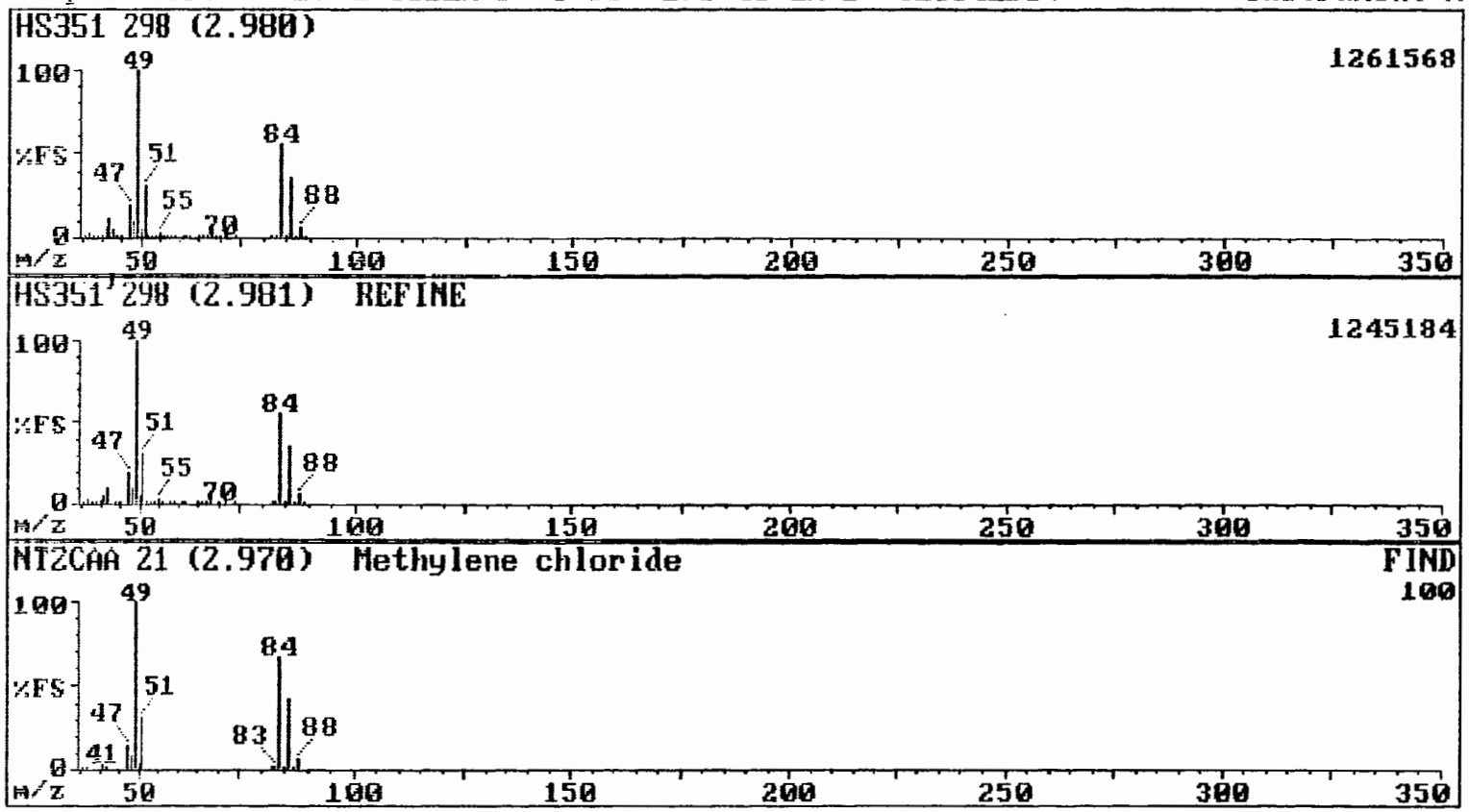

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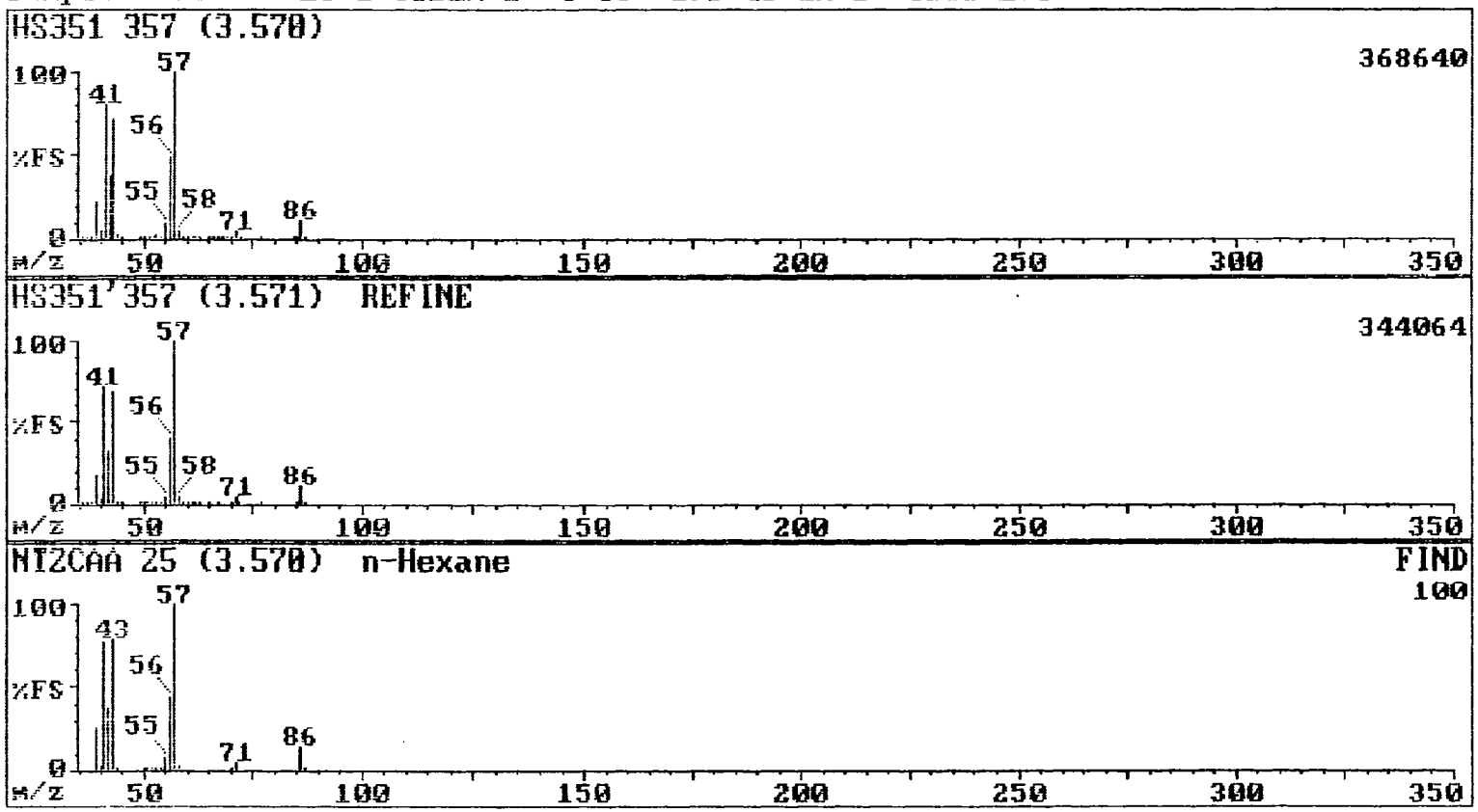

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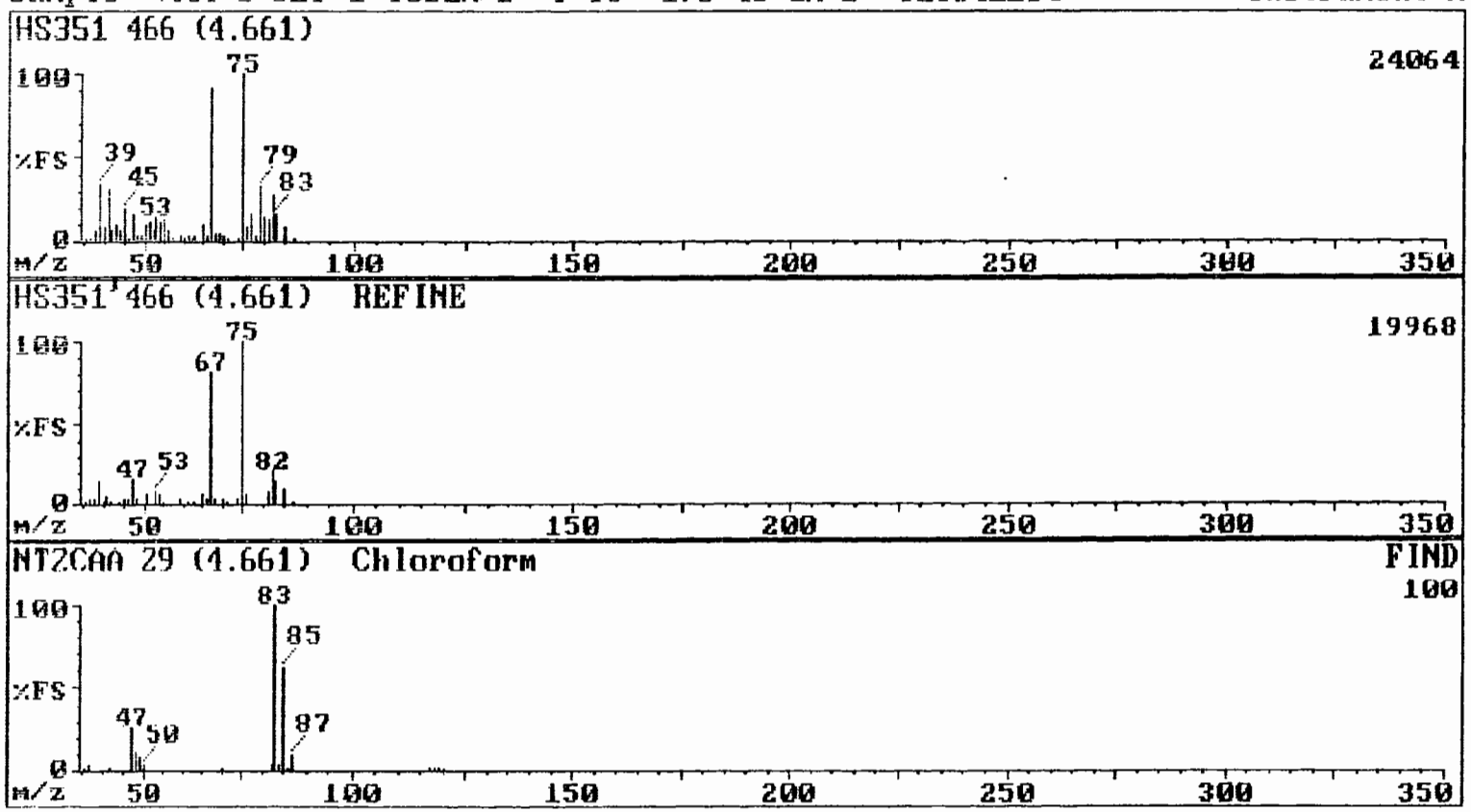
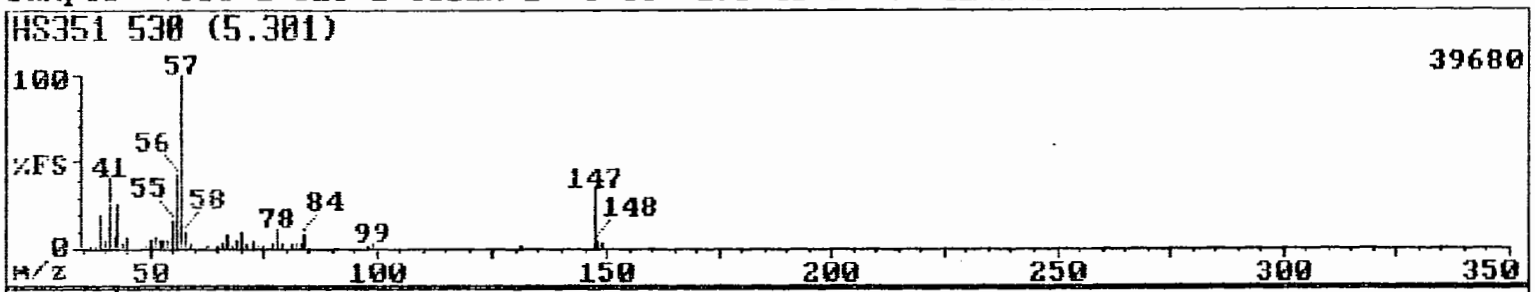
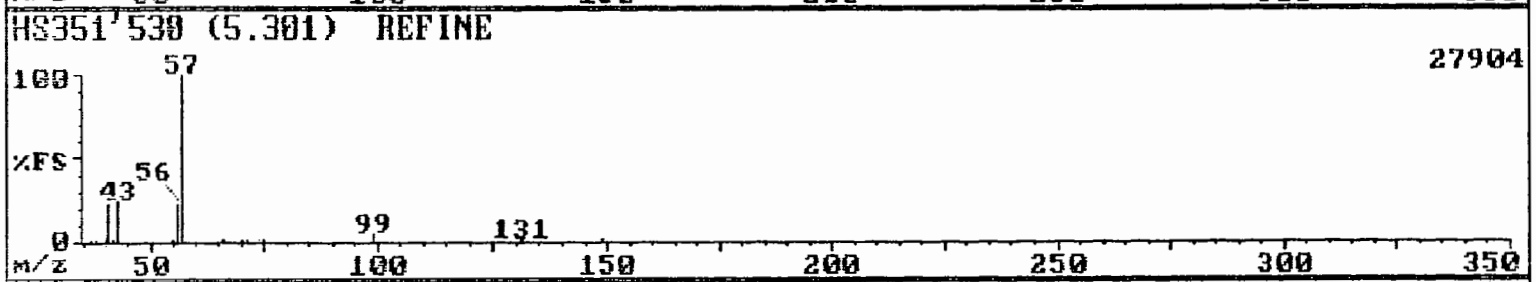
Sample: VOST-1 SET 1 TUBEA/B T/TC 173-46-1A/B TLI#42284 Instrument H

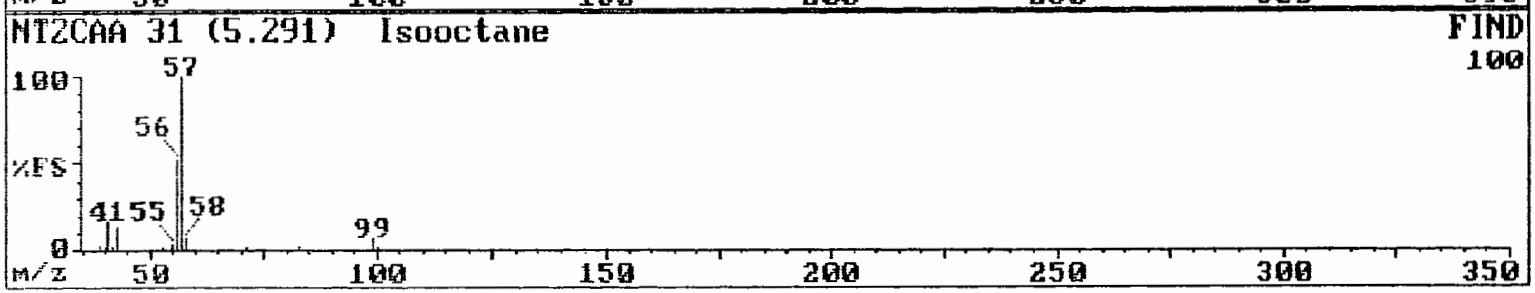


07-08-97 21:53 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 1 TUBEA/B T/TC 173-46-1A/B TLI#42284 Instrument H







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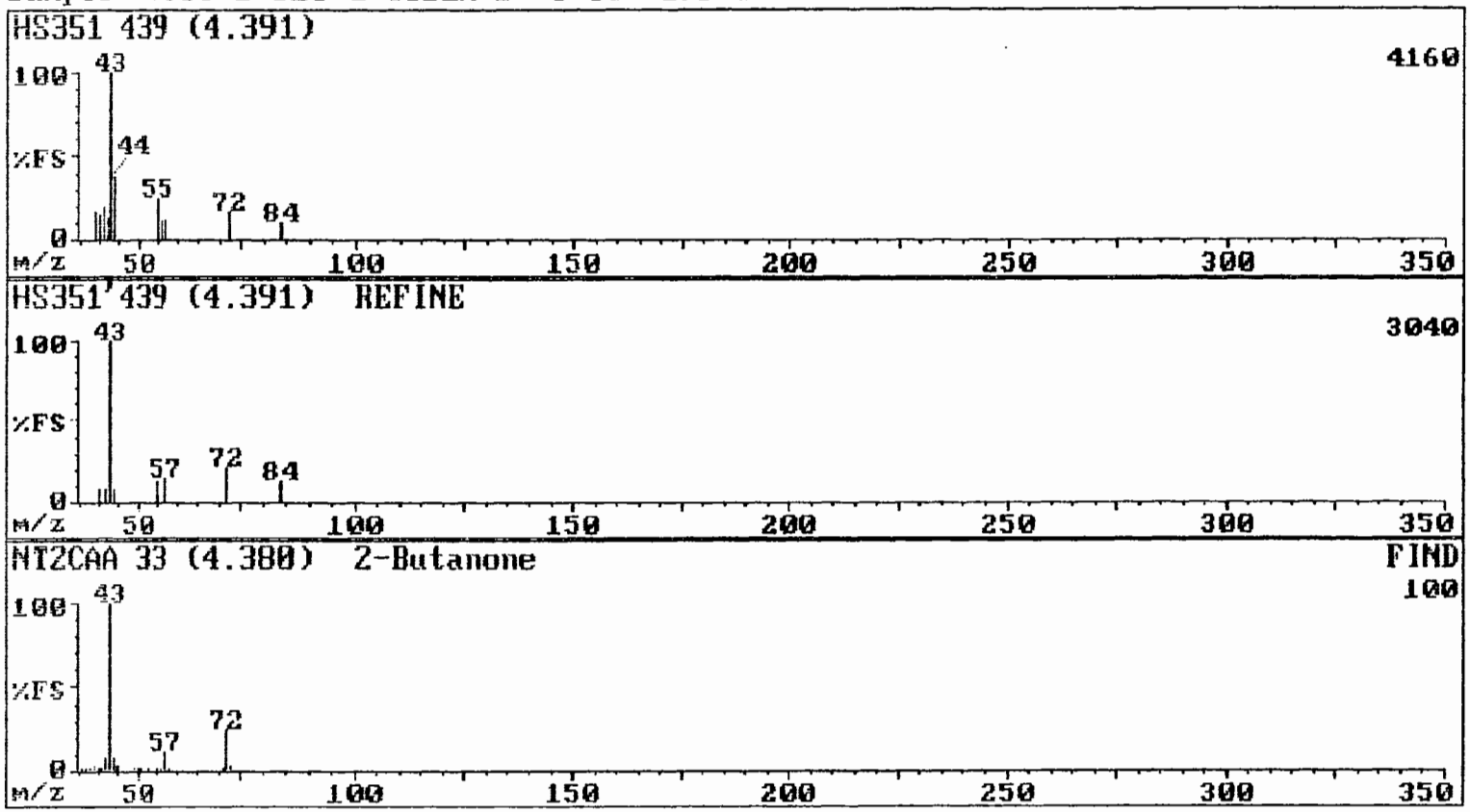
Sample: VOST-1 SET 1 TUBEA/B T/TC 173-46-1A/B TLI#42284 Instrument H



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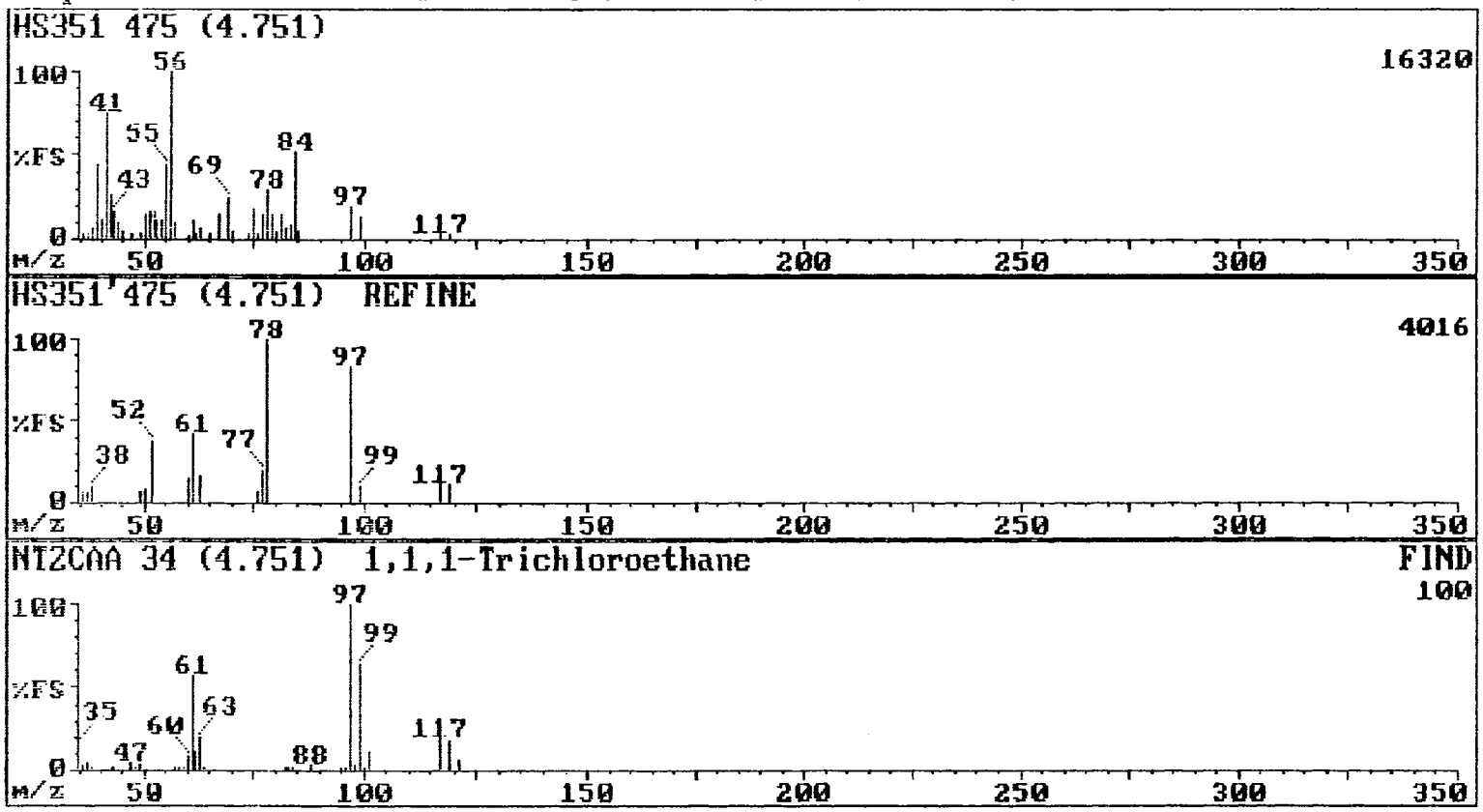
Sample: VOST-1 SET 1 TUBEA/B T/TC 173-46-1A/B TLI#42284 Instrument H



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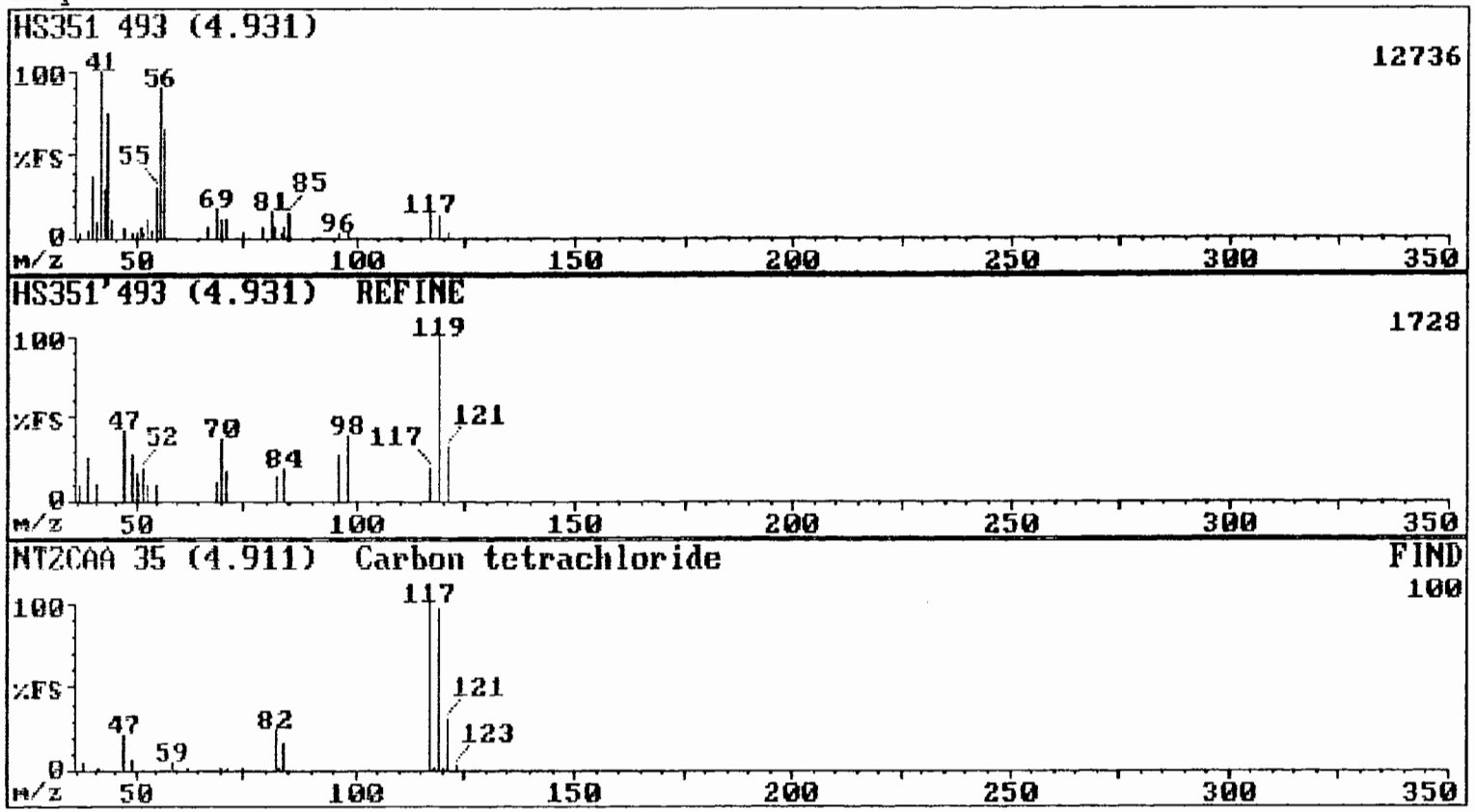
Sample: VOST-1 SET 1 TUBEA/B T/TC 173-46-1A/B TLI#42284 Instrument H



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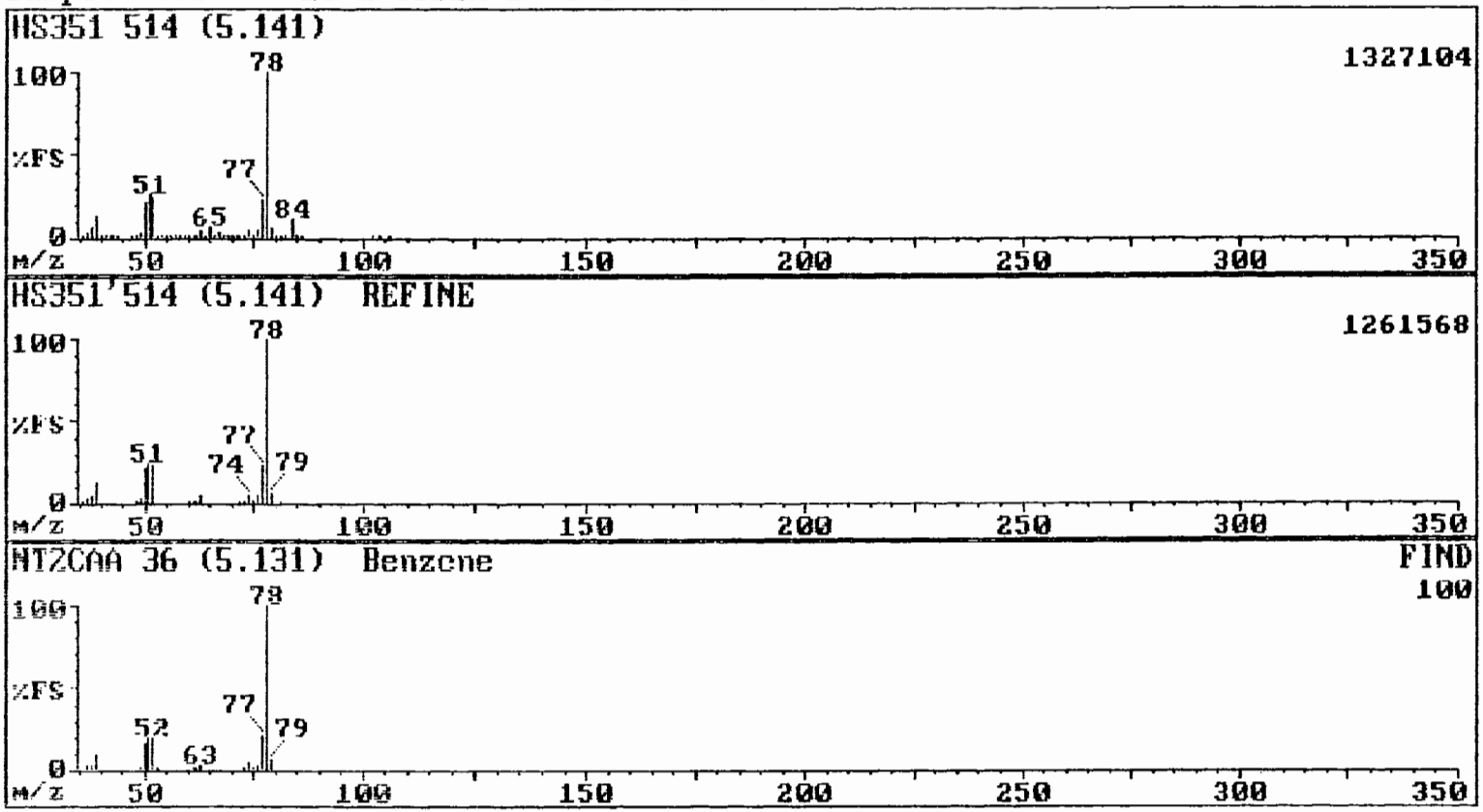
Sample: VOST-1 SET 1 TUBEA/B T/TC 173-46-1A/B TLI#42284 Instrument H



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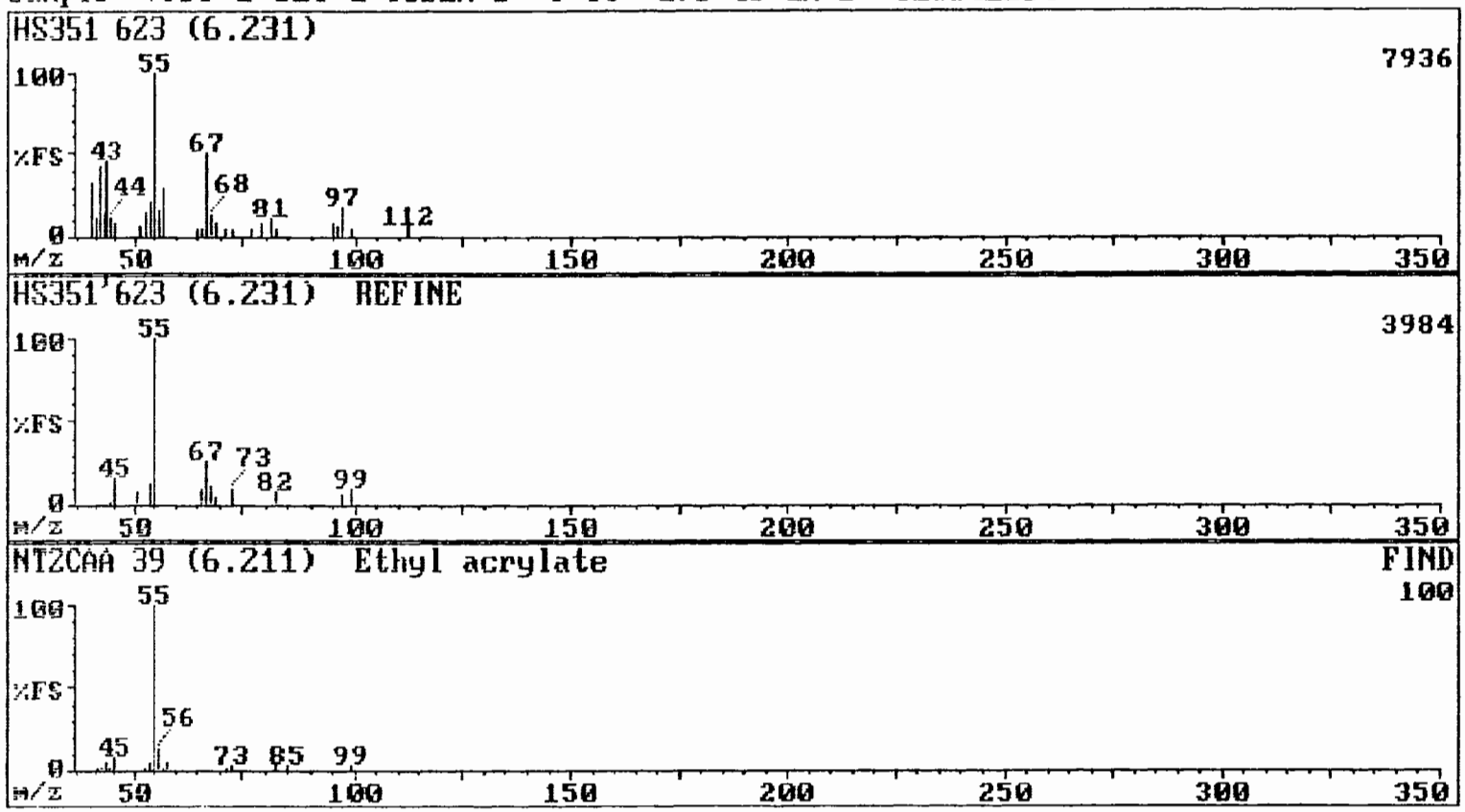
Sample: VOST-1 SET 1 TUBEA/B T/TC 173-46-1A/B TLI#42284 Instrument H



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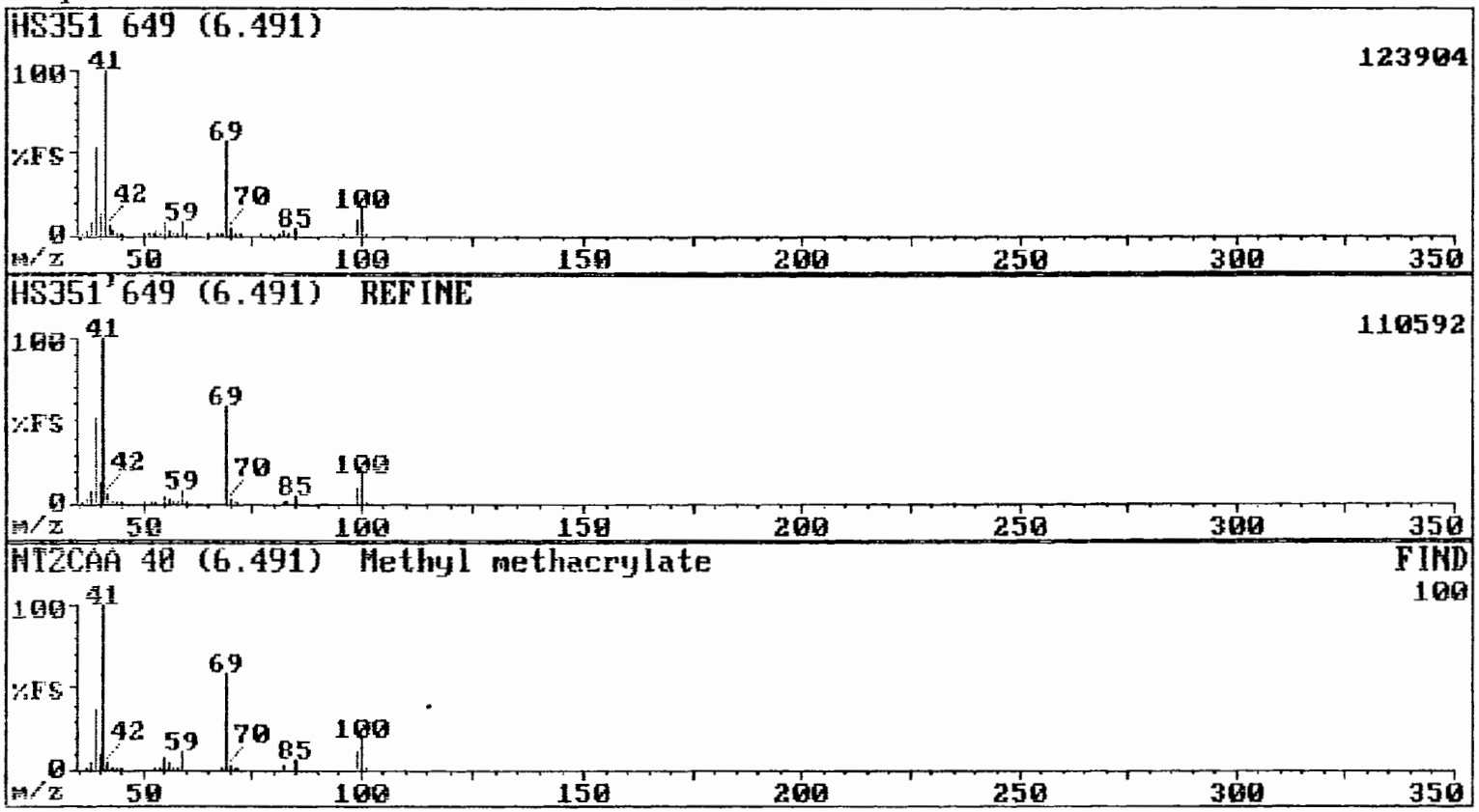
Sample: VOST-1 SET 1 TUBEA/B T/TC 173-46-1A/B TLI#42284 Instrument H



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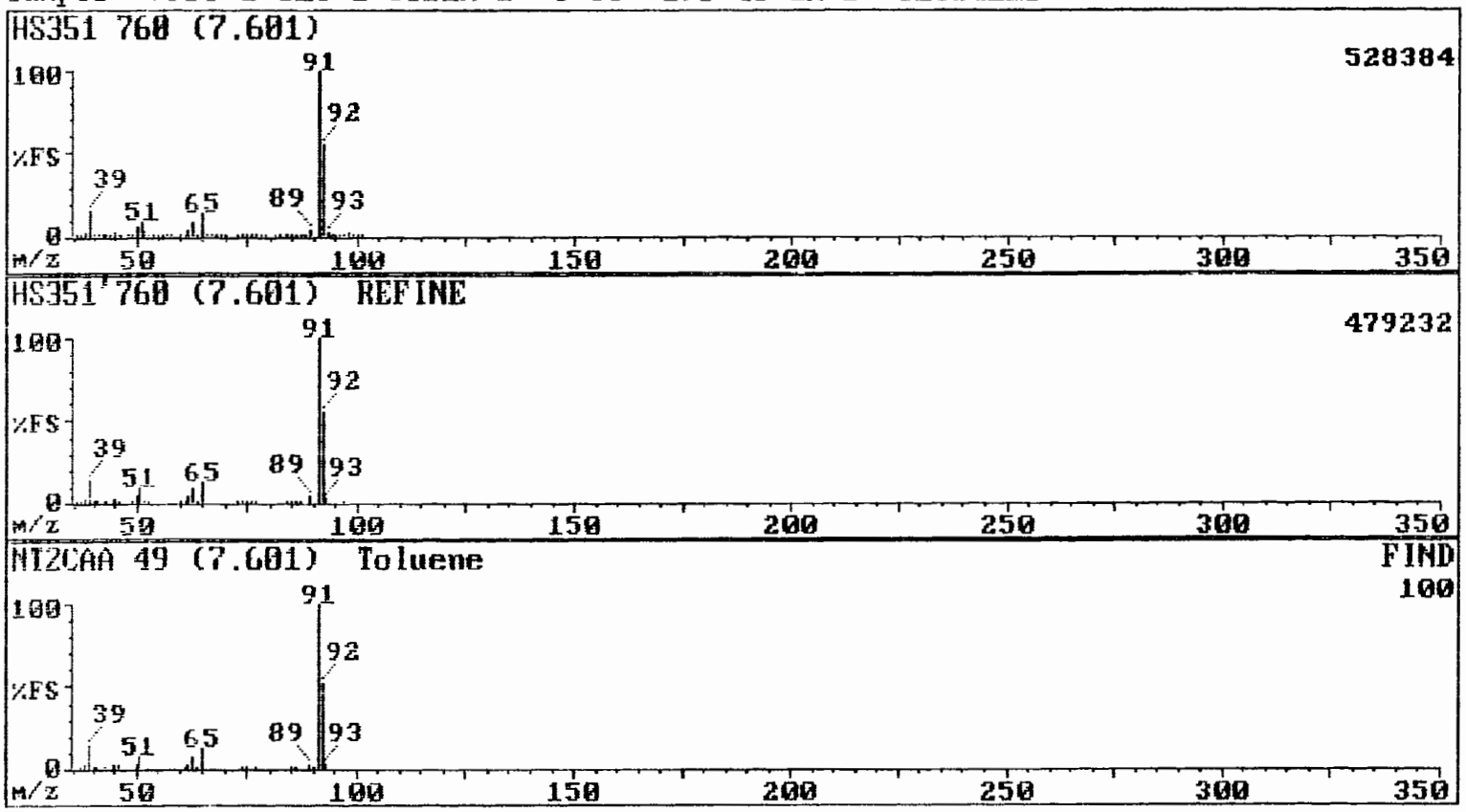

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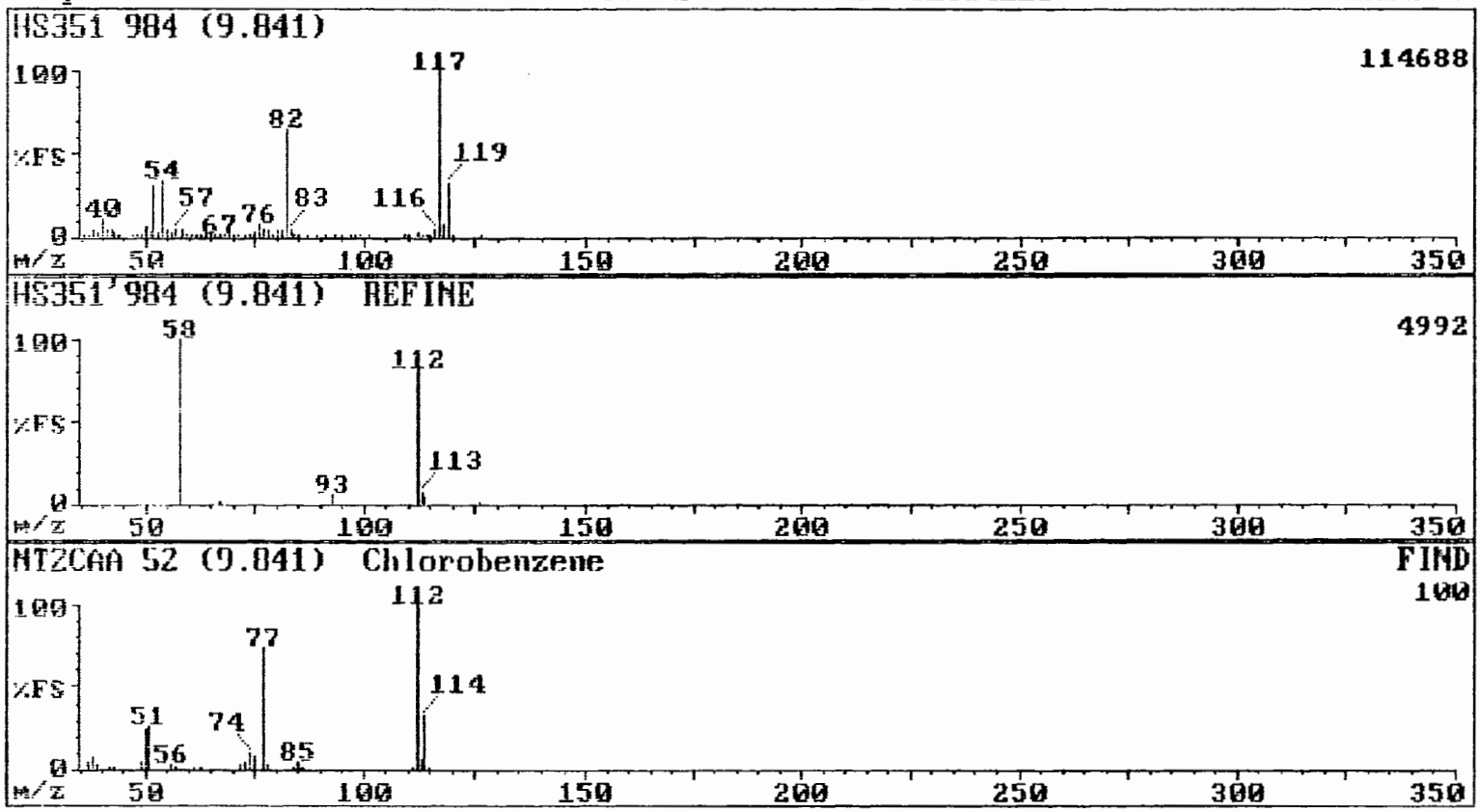

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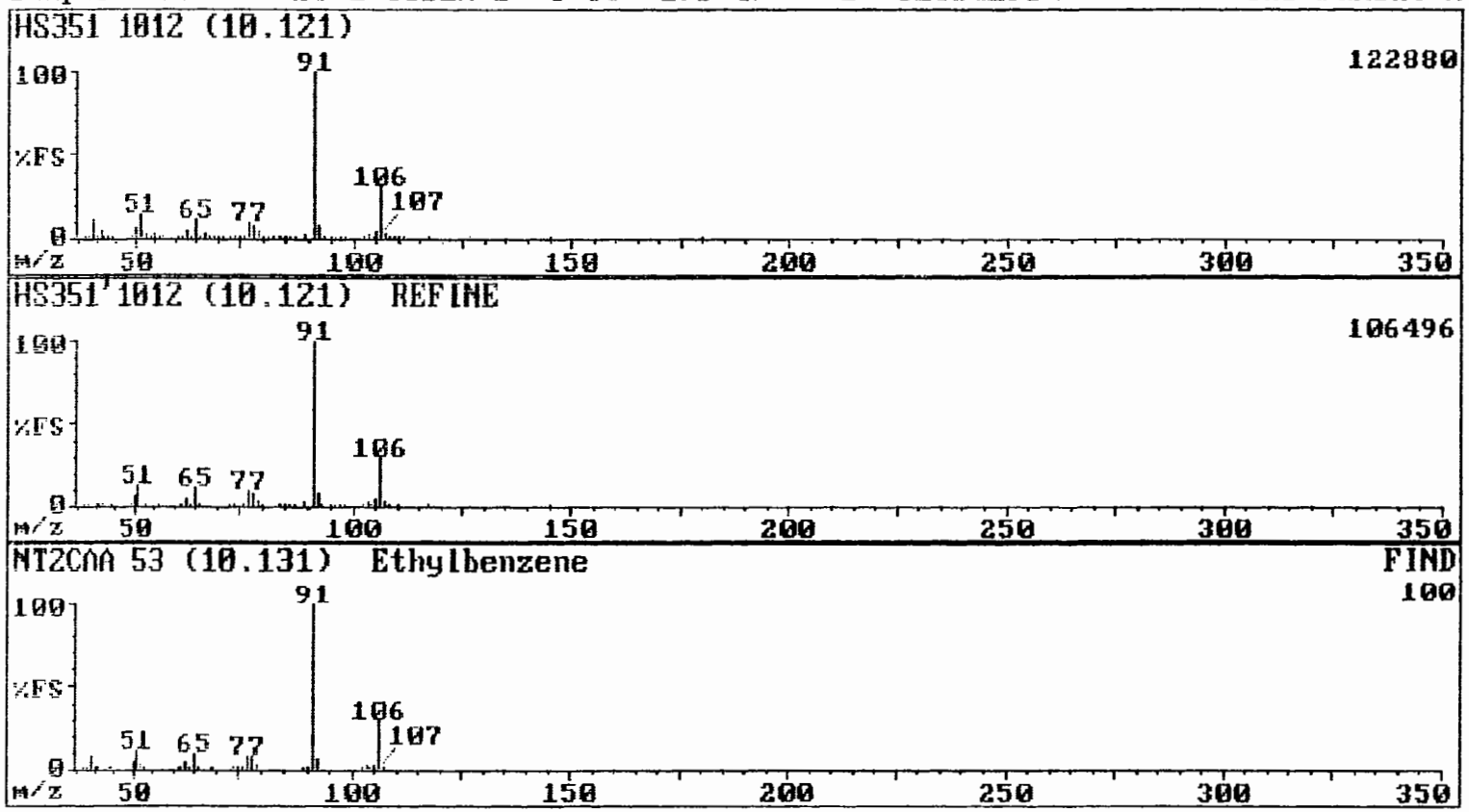

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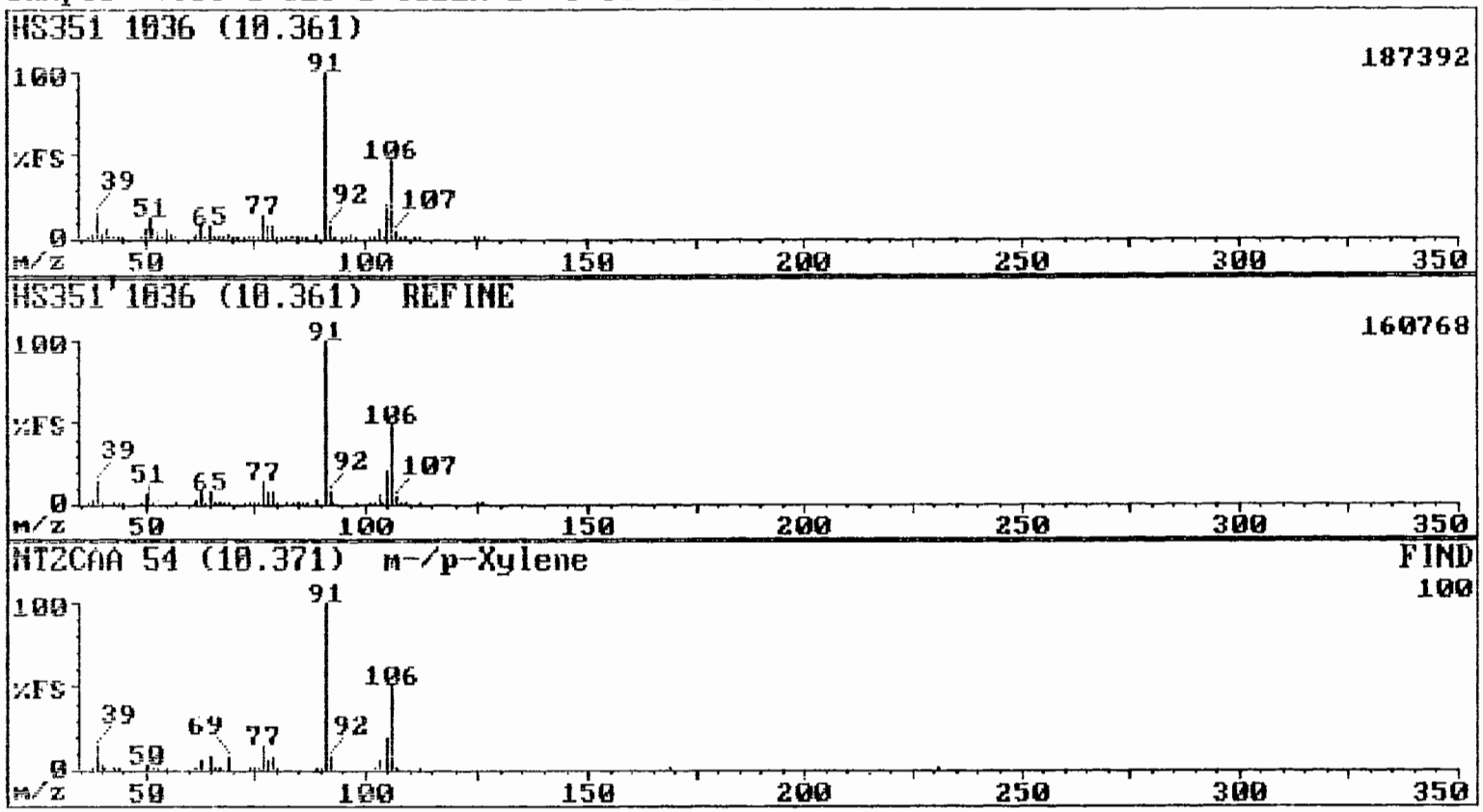
Sample: VOST-1 SET 1 TUBEA/B T/TC 173-46-1A/B TLI#42284 Instrument H



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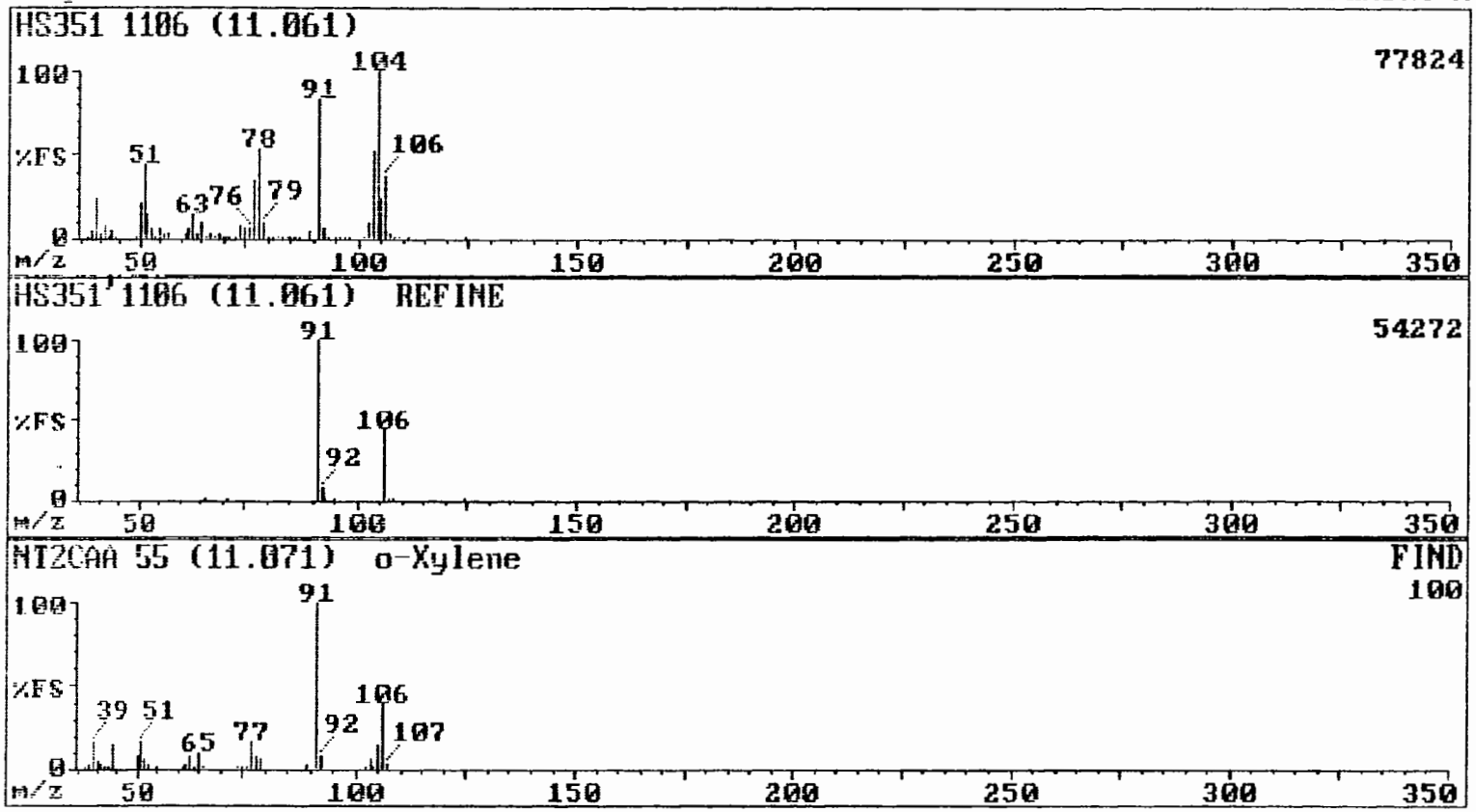
Sample: VOST-1 SET 1 TUBEA/B T/TC 173-46-1A/B TLI#42284 Instrument H



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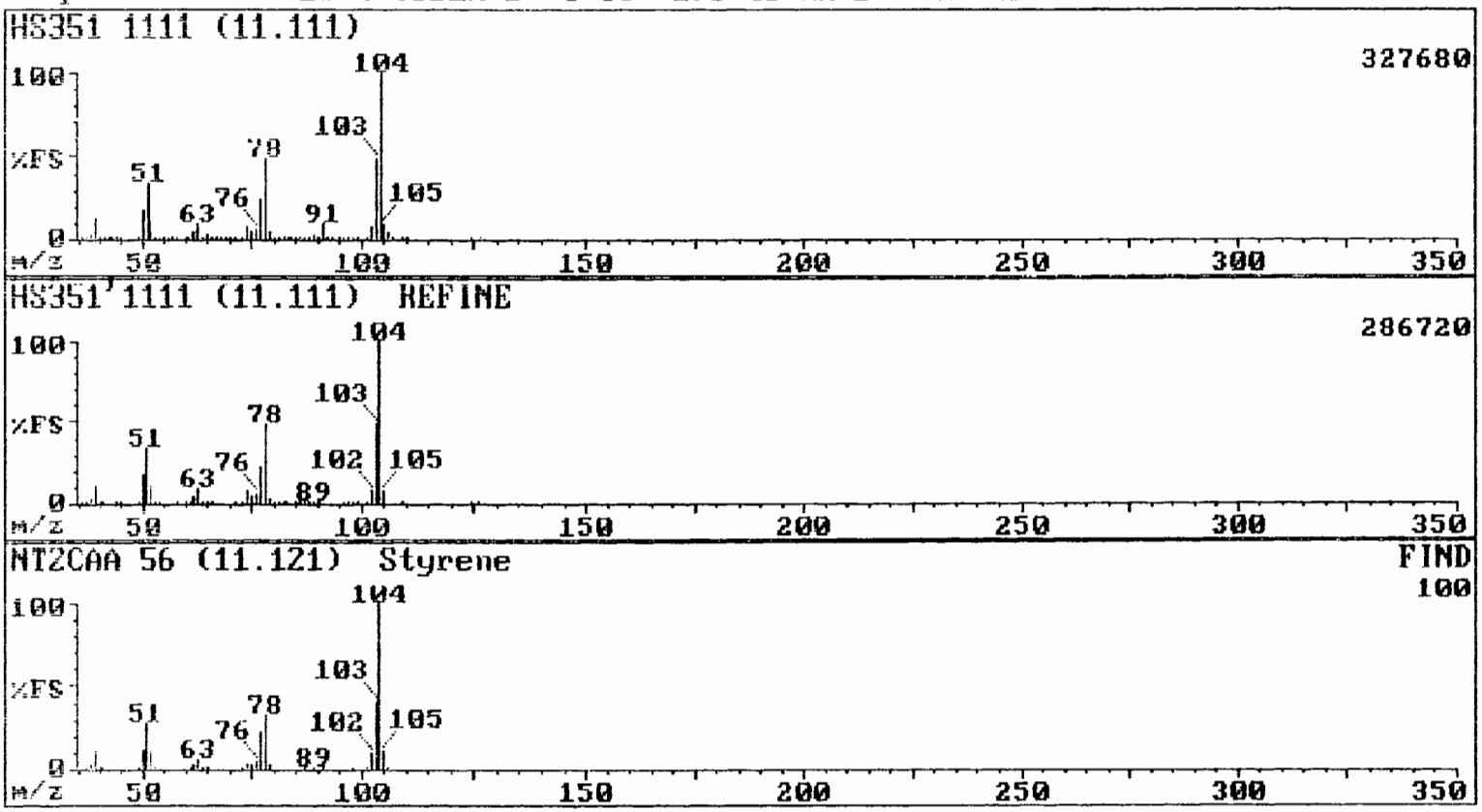
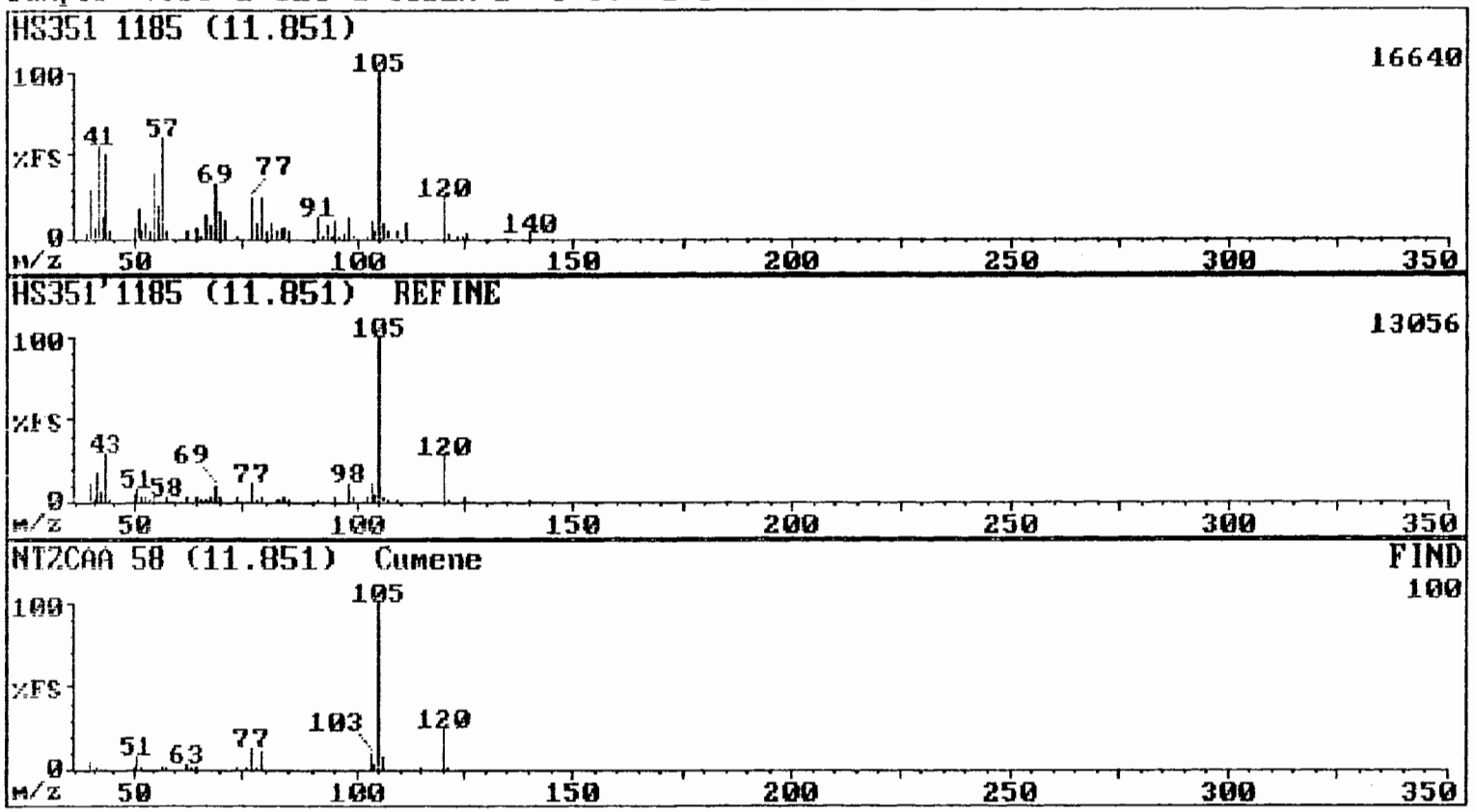
Sample: VOST-1 SET 1 TUBEA/B T/TC 173-46-1A/B TLI#42284 Instrument H



07 08-97 21:53 Triangle Laboratories of RTP, Inc. (919) 544-5729

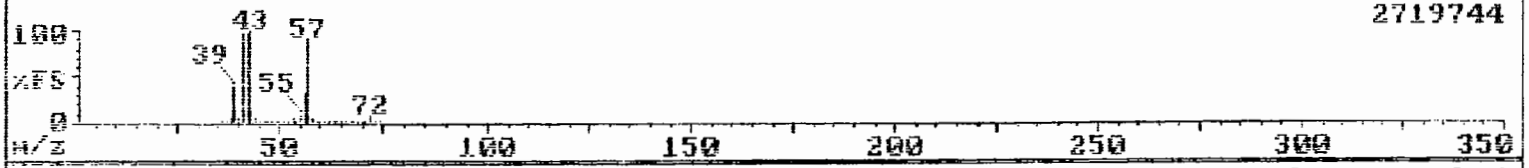
Sample: VOST-1 SET 1 TUBEA/B T/TC 173-46-1A/B TLI#42284 Instrument H



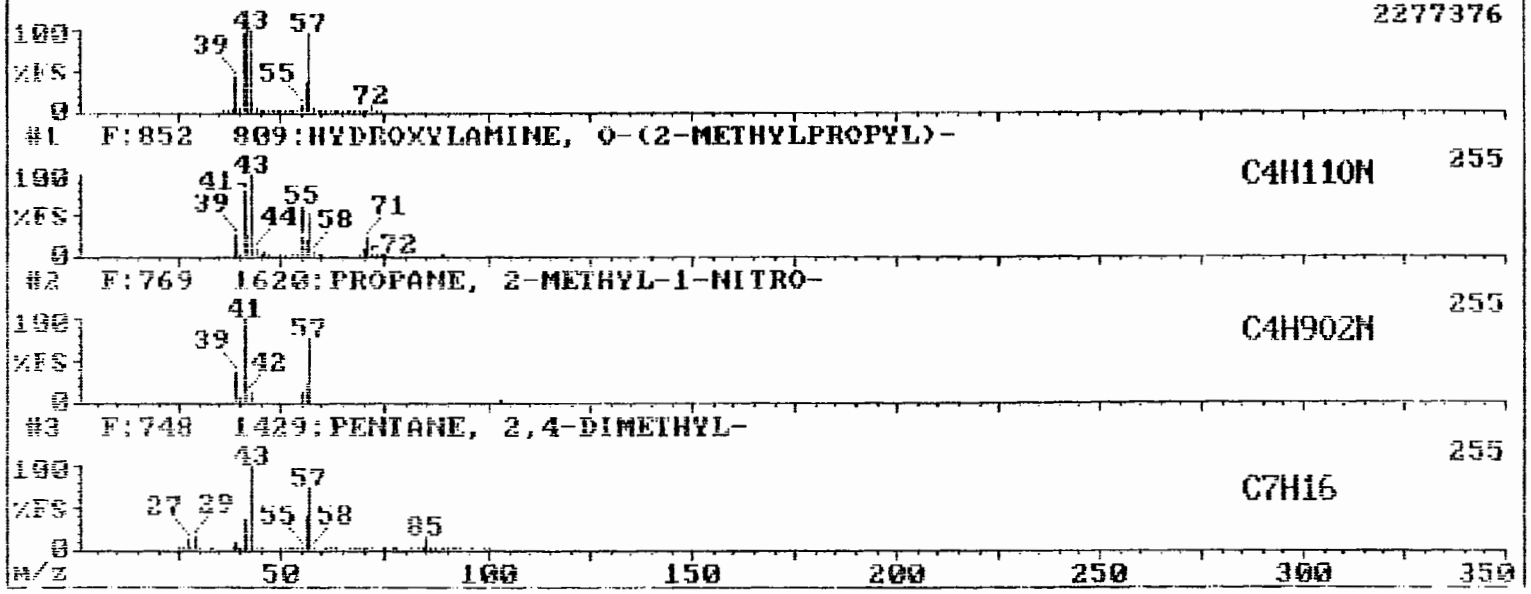
07/08/97 21:53 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 1 TUBE0/B T/TC 173-46-10/B TLI#42284 Instrument: H

HS351 164 (1.640) NBS 2719744

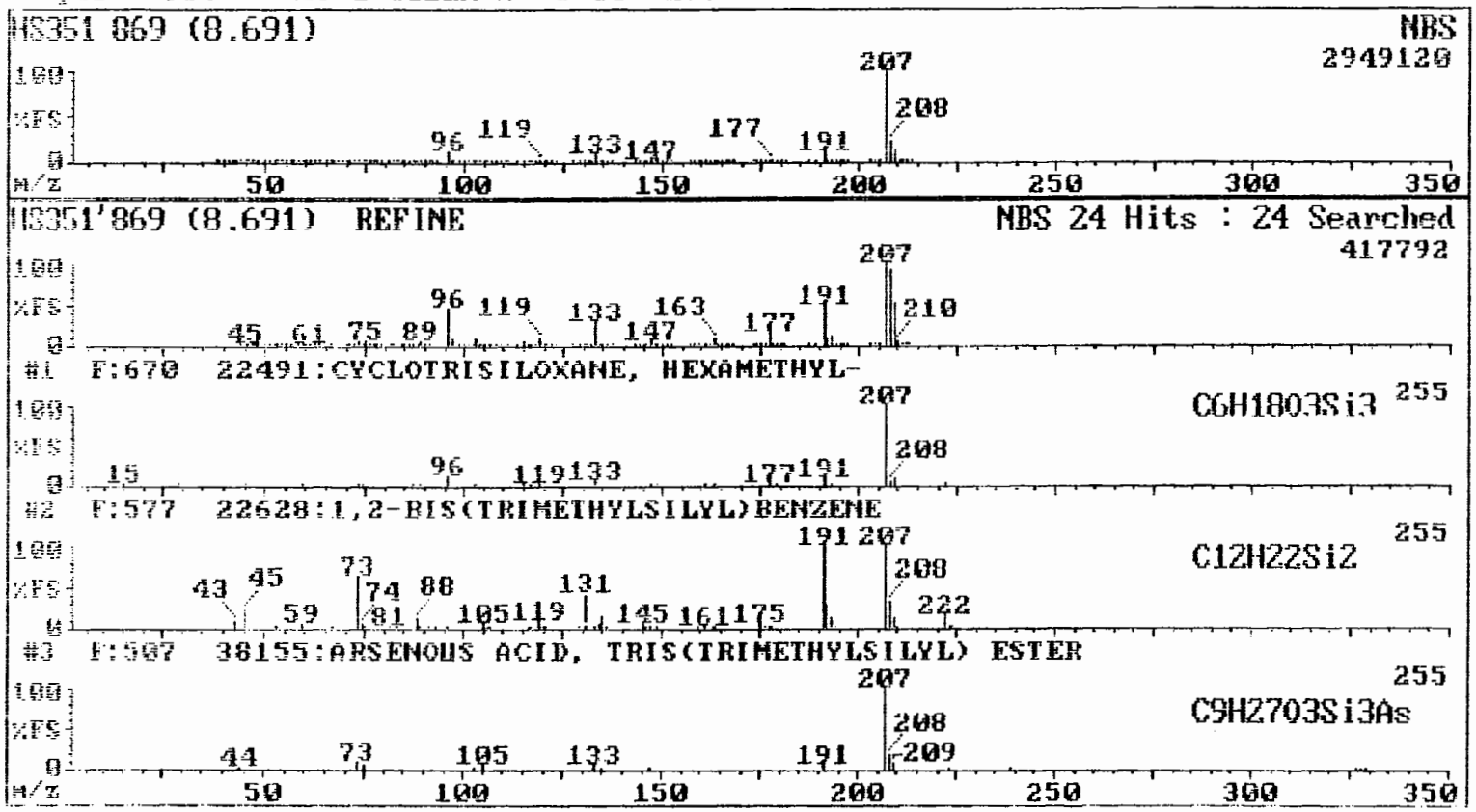


HS351'164 (1.641) REFINE NBS 242 Hits : 242 Searched 2277376

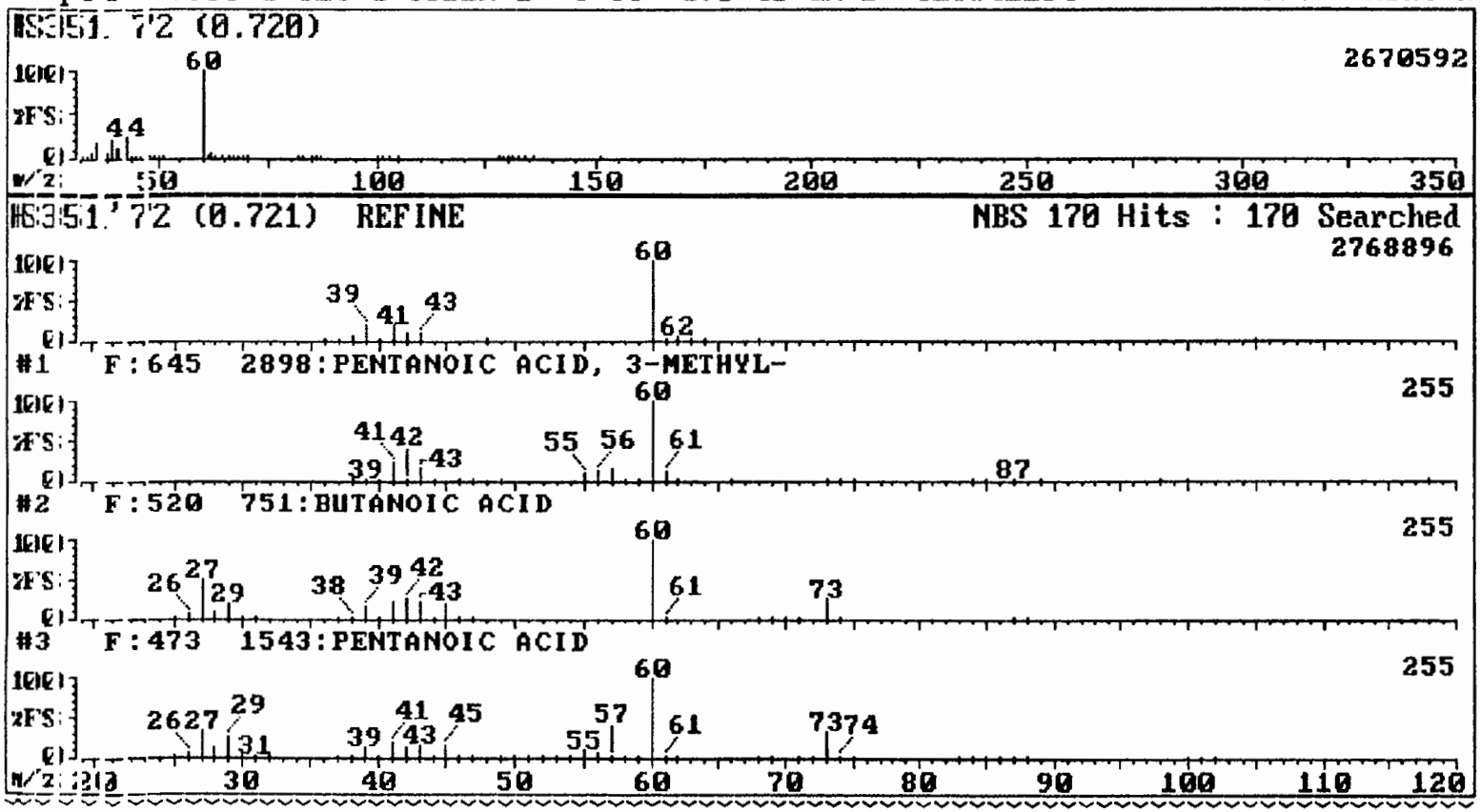


07/08/97 21:53 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 1 TUBEA/B T/TC 173-46-1A/B TLI#42284 Instrument: H

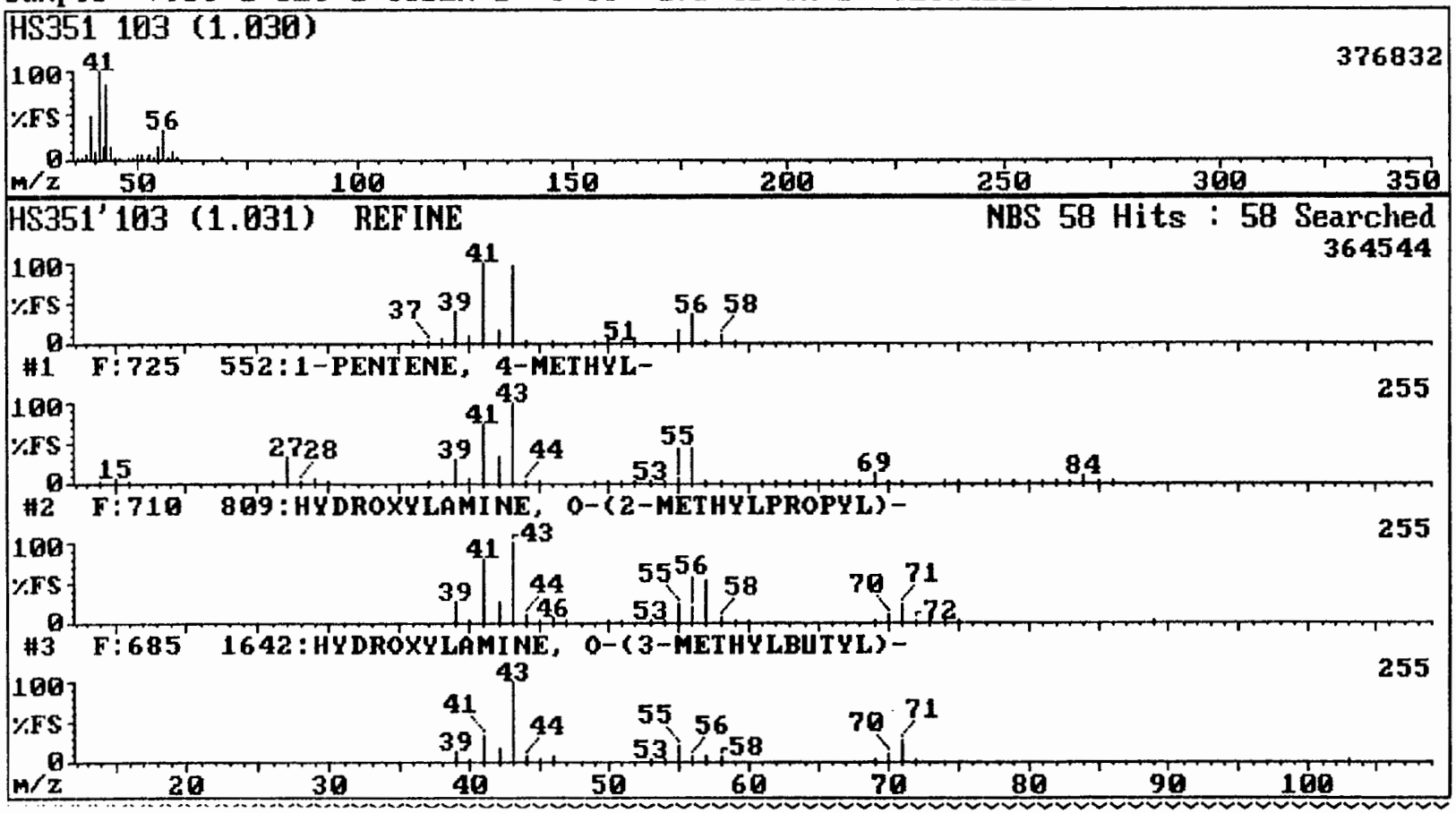


08-Jul-97 21:53 Triangle Laboratories of RTP, Inc. (919) 544-5729
Sample: VOST-1 SET 1 TUBEA/B T/TC 173-46-1A/B TLI#42284 Instrument H



08-Jul-97 21:53 Triangle Laboratories of RTP, Inc. (919) 544-5729

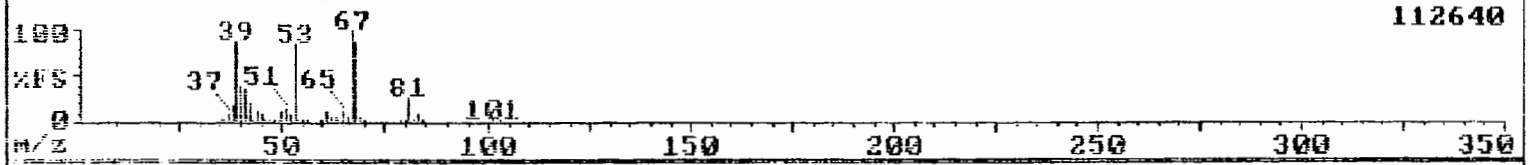
Sample: VOST-1 SET 1 TUBEA/B T/TC 173-46-1A/B TLI#42284 Instrument H



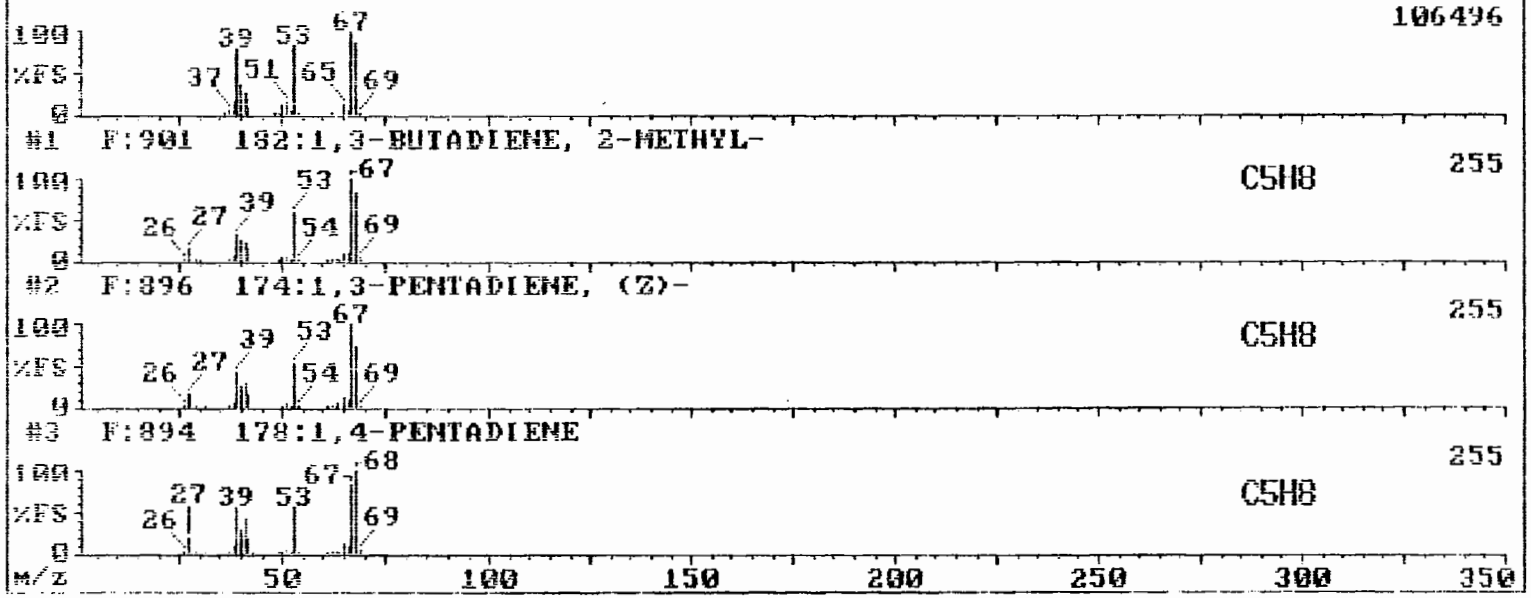
07/08/97 21:53 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 1 TUBEA/B T/TC 173-46-1A/B TLI#42284 Instrument: H

MS351 221 (2.210) NBS 112640

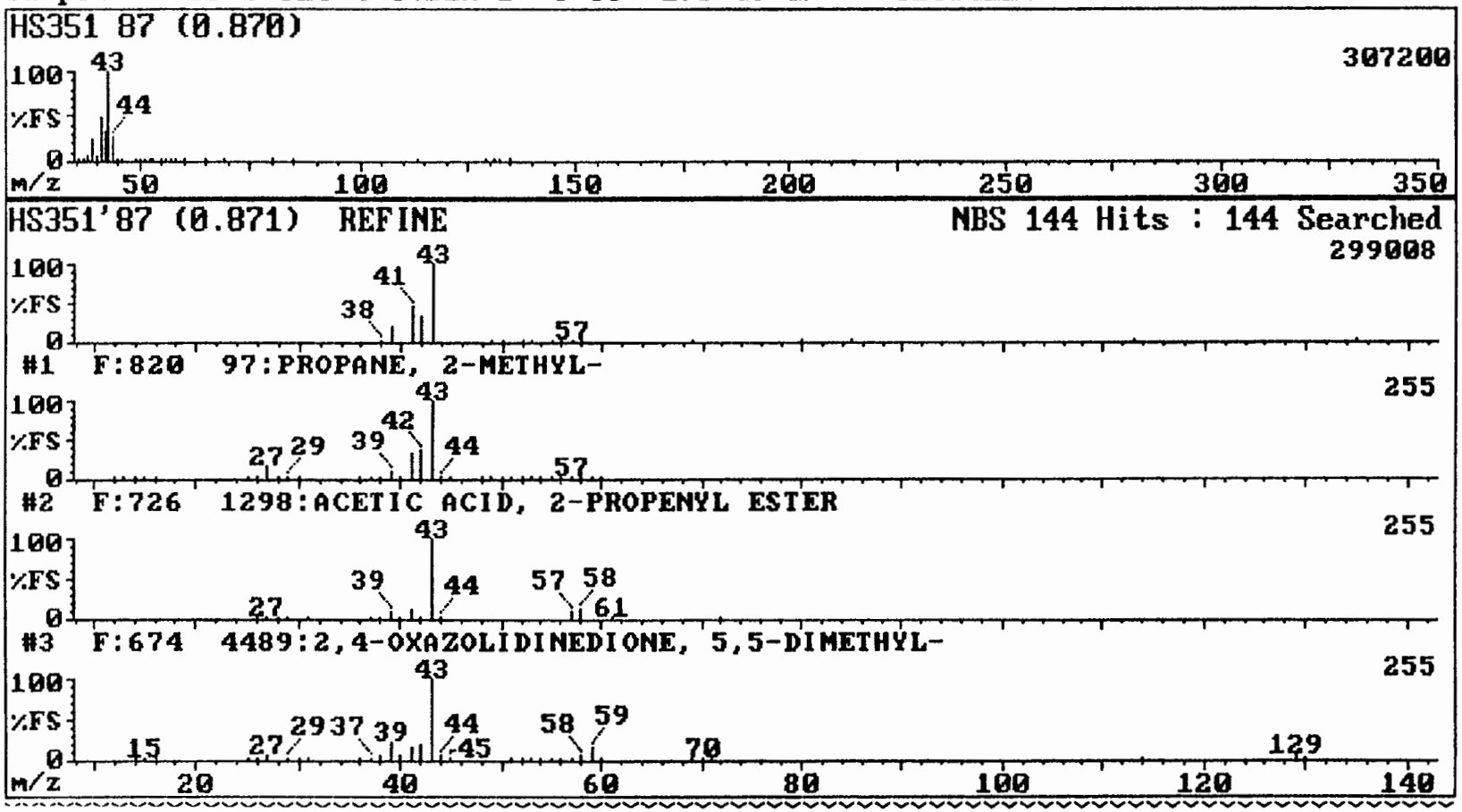


MS351'221 (2.211) REFINE NBS 33 Hits : 33 Searched 106496



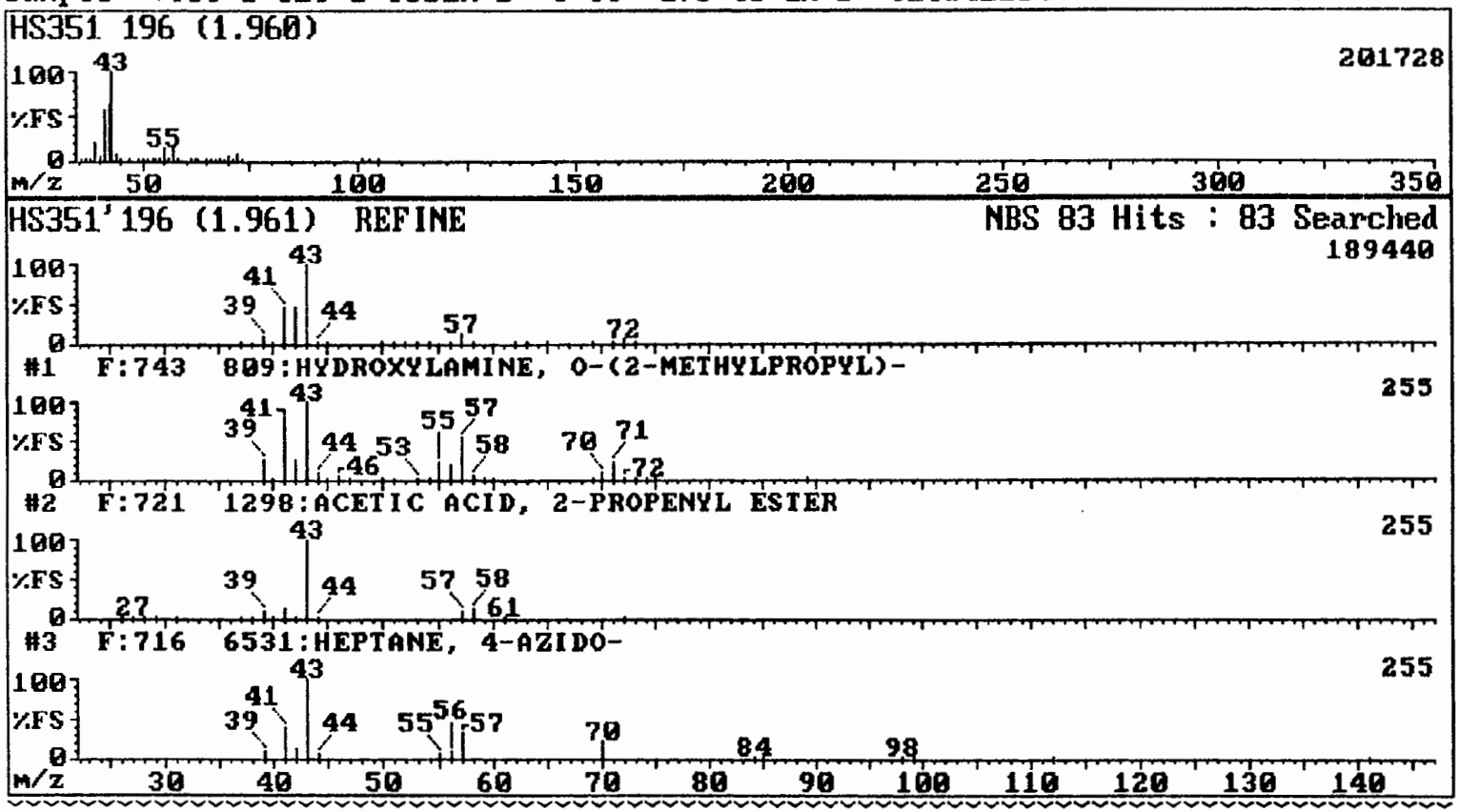
08-Jul-97 21:53 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 1 TUBEA/B T/TC 173-46-1A/B TLI#42284 Instrument H



08-Jul-97 21:53 Triangle Laboratories of RTP, Inc. (919) 544-5729

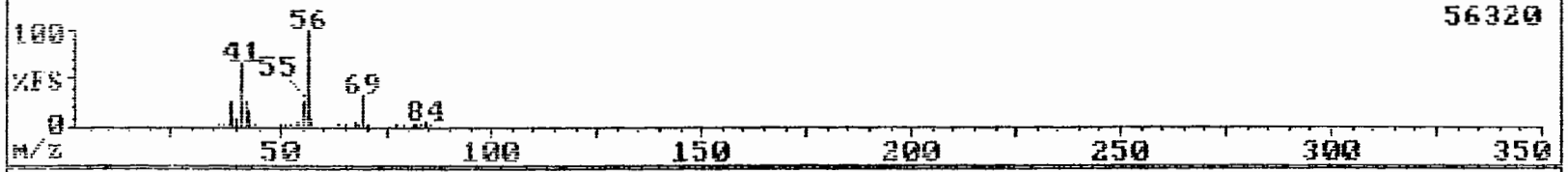
Sample: VOST-1 SET 1 TUBEA/B T/TC 173-46-1A/B TLI#42284 Instrument H



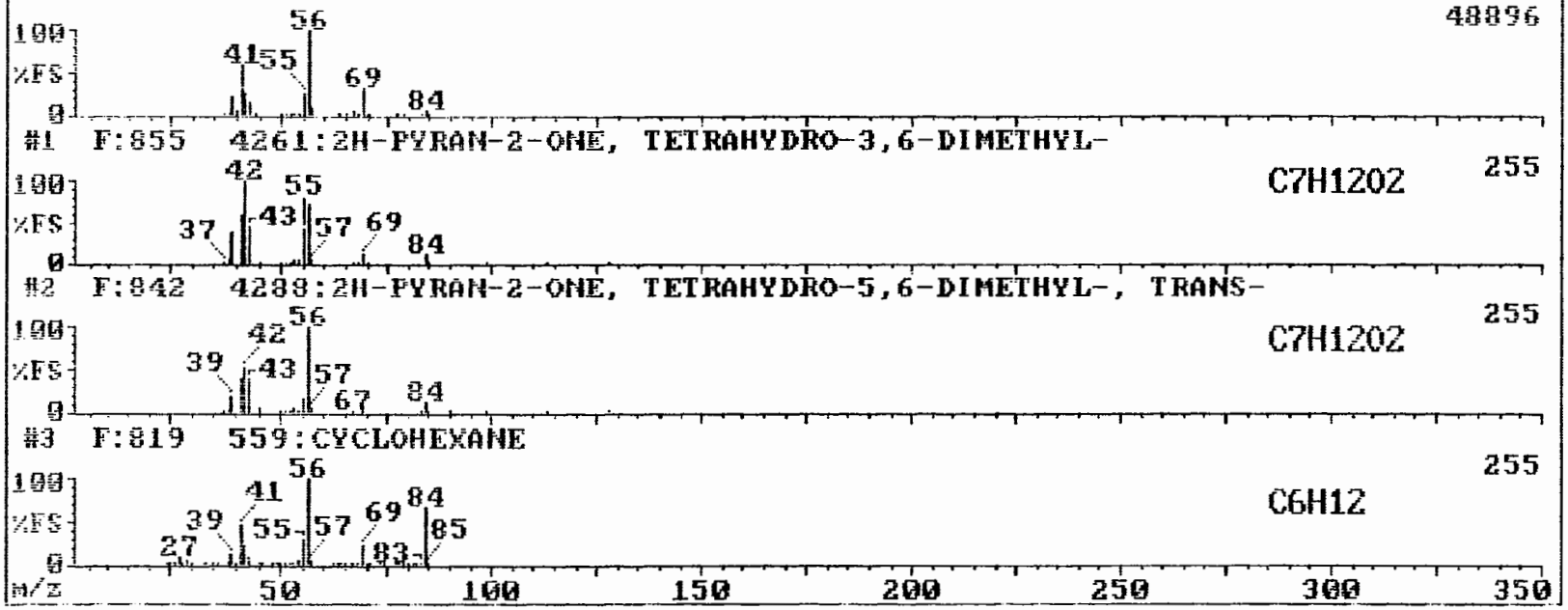
07/08/97 21:53 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 1 TUBEA/B T/TC 173-46-1A/B TLI#4ZZ84 Instrument: H

HS351 412 (4.120) NBS 56320

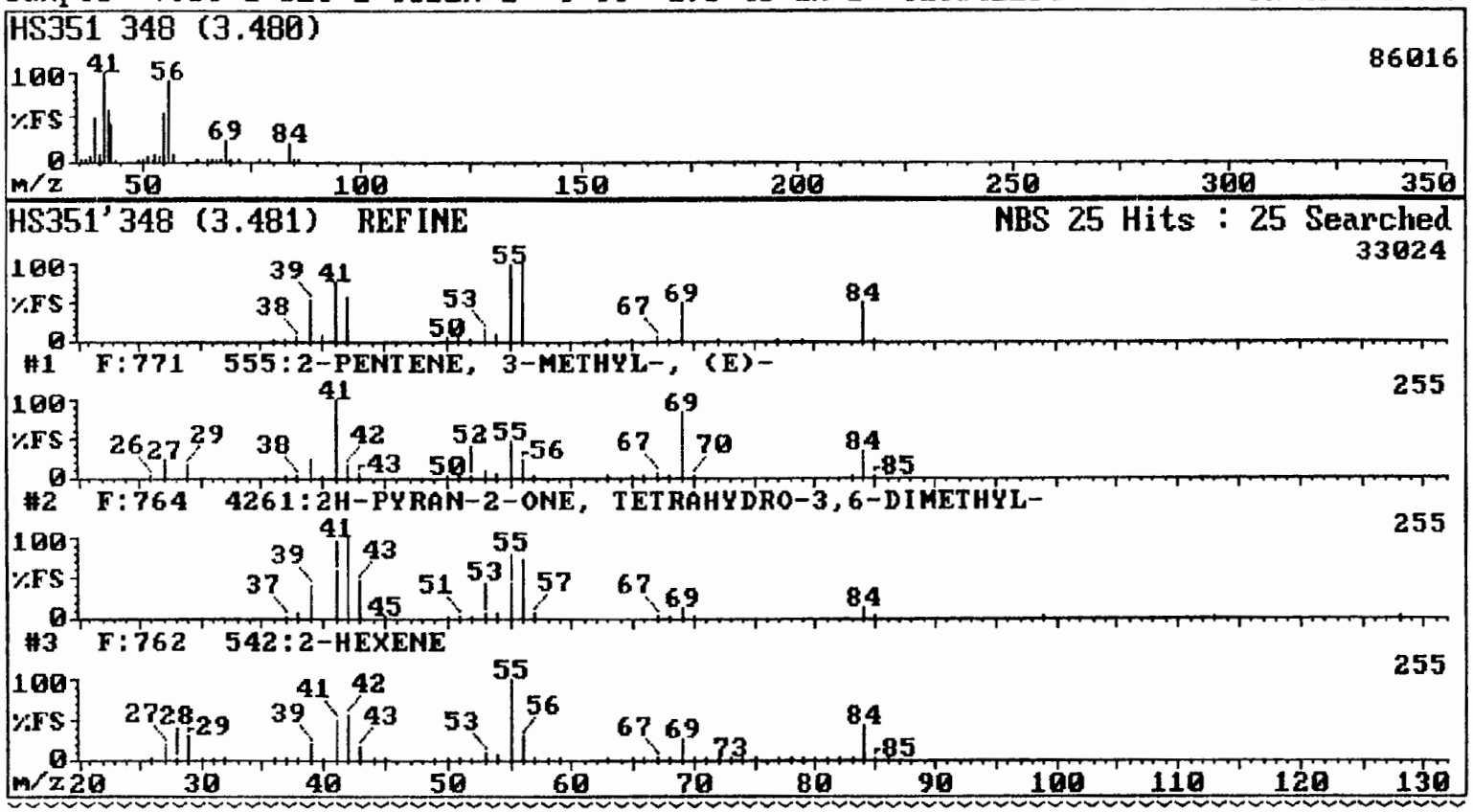


HS351'412 (4.121) REFINE NBS 66 Hits : 66 Searched 48896



08-Jul-97 21:53 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 1 TUBEA/B T/TC 173-46-1A/B TLI#42284 Instrument H



Pacific Environmental Services

Project Number: 42284 | **Method 8240A VOST**
Sample File: HS352 | **Sample ID: VOST-1 SET 2 TUBEA/B T/TC**

Client Project: S407-003 | **Date Received: 06/30/97** | **Response File: ICALH708**
TLI ID: 173-46-2A,B
Date Analyzed : 07/08/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
Bromochloromethane		IS 1	4.51		
Chloromethane	0.114		0.93		0.05
Vinyl Chloride		U		0.001	0.05
1,3-Butadiene	0.091		1.09		0.05
Bromomethane	0.018	J	1.43		0.05
Chloroethane		U		0.001	0.05
Vinyl bromide		U		0.001	0.05
Trichlorofluoromethane	1.026	E	1.84		0.05
1,1-Dichloroethene		U		0.001	0.05
Iodomethane		U		0.001	0.05
Carbon disulfide	0.253		2.50		0.05
Acetone	0.094	B	2.57		0.05
Allyl chloride		U		0.001	0.05
Methylene chloride	1.220	BE	2.97		0.05
trans-1,2-Dichloroethene		U		0.001	0.05
tert-Butyl methyl ether		U		0.001	0.05
Acrylonitrile		U		0.003	0.05
n-Hexane	0.209		3.57		0.05
1,1-Dichloroethane		U		0.001	0.05
1,2-Epoxybutane		U		0.003	0.05
cis-1,2-Dichloroethene		U		0.001	0.05
Chloroform	0.006	J	4.66		0.05
1,2-Dichloroethane		U		0.001	0.05
Isooctane	0.011	J	5.30		0.05
1,4-Difluorobenzene		IS 2	5.66		
Vinyl acetate		U		0.001	0.05

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

Pacific Environmental Services

Project Number: 42284 | **Method 8240A VOST**
Sample File: HS352 | **Sample ID: VOST-1 SET 2 TUBEA/B T/TC**

Client Project: S407-003 | **Date Received: 06/30/97** | **Response File: ICALH708**
TLI ID: 173-46-2A,B
Date Analyzed : 07/08/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
2-Butanone	0.008	J	4.39		0.05
1,1,1-Trichloroethane	0.006	J	4.75		0.05
Carbon tetrachloride		U		0.001	0.05
Benzene	0.741	B	5.13		0.05
Trichloroethene		U		0.001	0.05
1,2-Dichloropropane		U		0.001	0.05
Ethyl acrylate		U		0.001	0.05
Methyl methacrylate	0.103		6.49		0.05
Bromodichloromethane		U		0.001	0.05
cis-1,3-Dichloropropene		U		0.001	0.05
trans-1,3-Dichloropropene		U		0.001	0.05
1,1,2-Trichloroethane		U		0.001	0.05
Dibromochloromethane		U		0.001	0.05
Ethylene dibromide		U		0.001	0.05
Bromoform		U		0.001	0.05
Chlorobenzene-d_5		IS 3	9.79		
4-Methyl-2-pentanone		U		0.001	0.05
Toluene	0.263	B	7.60		0.05
Tetrachloroethene		U		0.001	0.05
2-Hexanone		U		0.001	0.05
Chlorobenzene	0.003	J	9.84		0.05
Ethylbenzene	0.050		10.13		0.05
m-/p-Xylene	0.092	J	10.36		0.10
o-Xylene	0.035	J	11.06		0.05
Styrene	0.250		11.12		0.05
1,1,2,2-Tetrachloroethane		U		0.001	0.05

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

Pacific Environmental Services

Project Number: 42284 | **Method 8240A VOST**
Sample File: HS352 | **Sample ID: VOST-1 SET 2 TUBEA/B T/TC**

Client Project: S407-003 | **Date Received: 06/30/97** | **Response File: ICALH708**
TLI ID: 173-46-2A,B
Date Analyzed : 07/08/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
Cumene	0.006	J	11.85		0.05

Surrogate Summary	Amount (ug)	RT	IS Ref	%REC
1,2-Dichloroethane-d_4	0.260	5.11	1	104
Benzene-d_6	0.280	5.09	2	112
Toluene-d_8	0.285	7.51	3	114

Reviewed by TW Date 7/22/97

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

Triangle Laboratories of RTP, Inc.
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

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Printed: 15:01 07/22/1997

Pacific Environmental Services

Project Number: 42284 Method 8240A

Sample File: HS352 Sample ID: VOST-1 SET 2 TUBEA/B T/TC

Client Project:	S407-003	Date Received:	06/30/97
TLI ID:	173-46-2A,B	Date Analyzed:	07/08/97
	Dilution Factor:	1.00	

Tentatively Identified Compounds

Name	RT	Area	IS RT	IS Area	Amount, ug
Methylbutane Isomer	1.630	111214760	4.511	4803281	5.788
Unknown	0.72	35399944	4.511	4803281	1.842
C4H8 Isomer	1.03	9247143	4.511	4803281	0.481
C5H8 Isomer	2.200	5723370	4.511	4803281	0.298
Hexamethylcyclotrisiloxane	8.691	10030476	9.791	11242038	0.223
Pentane	1.95	3878523	4.511	4803281	0.202
Methyl Propane Isomer	0.87	3551444	4.511	4803281	0.185
C6H12 Isomer	3.47	2584441	4.511	4803281	0.135
Cyclohexane	4.781	2087478	4.511	4803281	0.109
Tetrahydrodimethyl Pyranone Isomer	4.120	1957605	4.511	4803281	0.102

Triangle Laboratories, Inc.
801 Capitola Drive * Durham, North Carolina 27713
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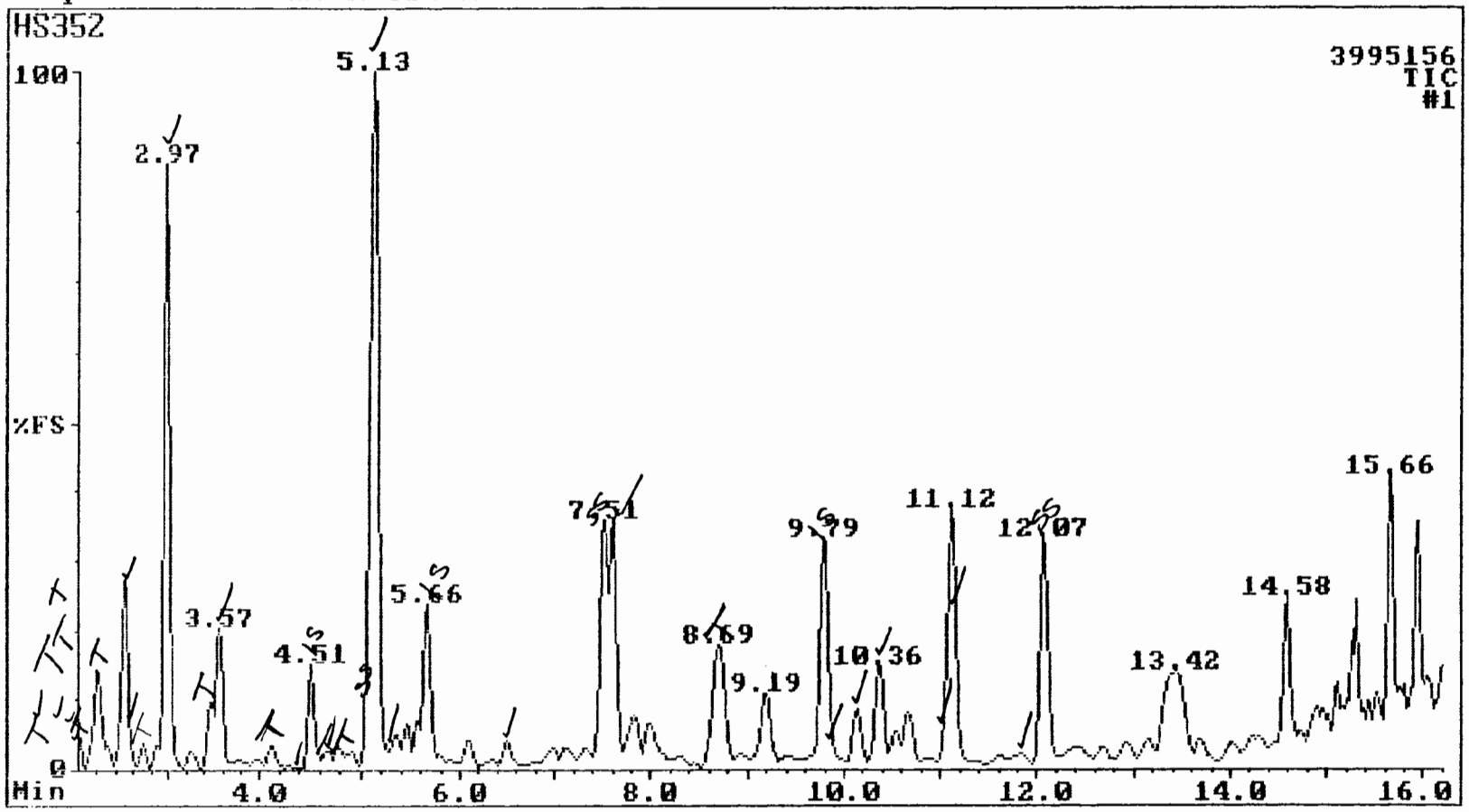
07-08-97 22:19 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 2 TUBEA/B T/TC 173-46-2A/B TLI#42284 Instrument H



Data Review: TW
Date: 7-17-97

QUAN DB : HS352 LAB-BASE QUAN 07-08-97 22:46

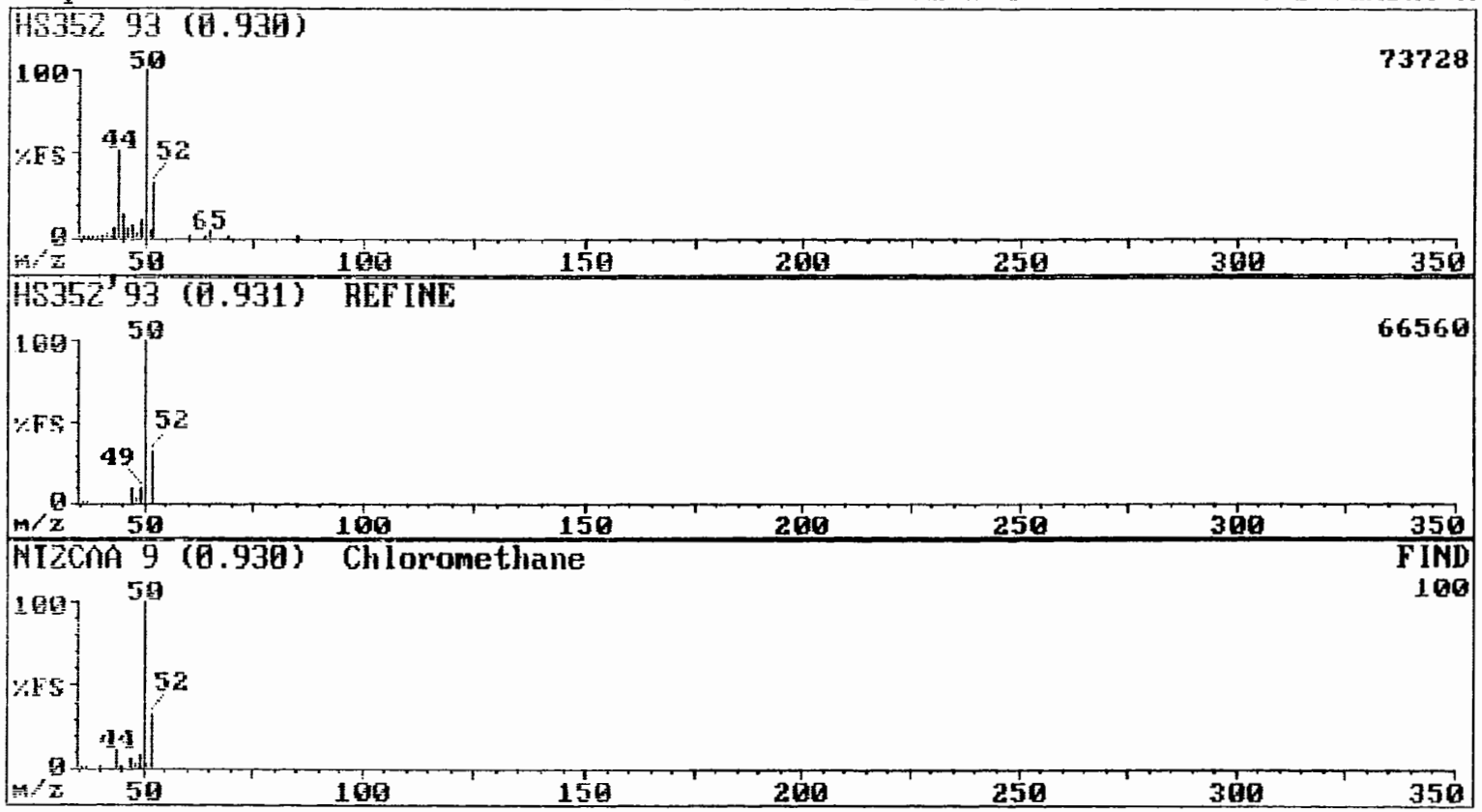
No.	MAT	FOR	REV	Delta	Area	P.Flags	RT	QM	Name
1	100	92	99	0	388280	bb	4.51	128	Bromochloromethane
2	100	93	97	0	2404288	bb	5.66	114	1,4-Difluorobenzene
3	100	96	98	-1	3064440	bv	9.79	117	Chlorobenzene-d5
4	54	21	67	1	1087856	bv	5.11	65	1,2-Dichloroethane-d4
5	100	86	88	0	3114104	bv	5.09	84	Benzene-d6
6	100	90	99	1	3969236	bv	7.51	98	Toluene-d8
~~7~~	~~25~~	~~10~~	~~33~~	~~-13~~	~~25162~~	~~A~~	~~12.39~~	98	o-Xylene-d10 FP TW
8	100	88	94	1	1955371	vv	12.07	95	4-Bromofluorobenzene
9	100	86	92	0	373280	vv	0.93	50	Chloromethane
~~10~~	~~11~~	~~14~~	~~22~~	~~-33~~	~~1305112~~	~~bb~~	~~0.73~~	62	Vinyl Chloride FP TW
~~11~~	~~100~~	~~73~~	~~100~~	~~0~~	~~1298010~~	~~A~~ 370701	~~1.02~~ 1.09	39	1,3-Butadiene MI TW
12	95	60	95	1	61104	bb	1.43	94	Bromomethane
~~13~~	~~19~~	~~22~~	~~38~~	~~33~~	~~47288~~	~~A~~	~~1.87~~	64	Chloroethane FP TW
14	0	0	0	0	0		0.00	106	Vinyl bromide
15	100	92	99	0	4580724	bb	1.84	101	Trichlorofluoromethane
16	0	0	0	0	0		0.00	96	1,1-Dichloroethene
17	0	0	0	0	0		0.00	142	Iodomethane
18	100	77	99	0	2482784	bv	2.50	76	Carbon disulfide
19	89	64	80	0	191473	vv	2.57	43	Acetone
20	0	0	0	0	0		0.00	76	Allyl chloride
21	100	92	99	0	3733436	bv	2.97	84	Methylene chloride
22	0	0	0	0	0		0.00	96	trans-1,2-Dichloroethene
~~23~~	~~69~~	~~54~~	~~56~~	~~1~~	~~3076~~	~~A~~	~~3.32~~	73	tert-Butyl methyl ether FP TW
~~24~~	~~27~~	~~9~~	~~36~~	~~-1~~	~~11782~~	~~bv~~	~~3.26~~	53	Acrylonitrile
25	100	98	100	0	1516642	vv	3.57	57	n-Hexane
26	0	0	0	0	0		0.00	63	1,1-Dichloroethane
~~27~~	~~59~~	~~47~~	~~58~~	~~6~~	~~78699~~	~~bv~~	~~4.11~~	42	1,2-Epoxybutane FP TW
28	0	0	0	0	0		0.00	96	cis-1,2-Dichloroethene
29	45	11	61	0	34704	bv	4.66	83	Chloroform
30	0	0	0	0	0		0.00	62	1,2-Dichloroethane
31	89	56	88	1	274962	bv	5.30	57	Isooctane
~~32~~	~~33~~	~~30~~	~~62~~	~~-27~~	~~1287401~~	~~bv~~	~~3.57~~	43	Vinyl acetate FP TW
33	84	67	70	1	3012	A	4.39	72	2-Butanone
34	40	15	49	0	32056	bb	4.75	97	1,1,1-Trichloroethane
35	0	0	0	0	0		0.00	117	Carbon tetrachloride
36	100	92	99	0	9029139	bv	5.13	78	Benzene
37	0	0	0	0	0		0.00	130	Trichloroethene
~~38~~	~~21~~	~~16~~	~~41~~	~~-26~~	~~332~~	~~bb~~	~~5.88~~	63	1,2-Dichloropropane FP TW
~~39~~	~~44~~	~~27~~	~~49~~	~~-3~~	~~22832~~	~~A~~	~~6.25~~	55	Ethyl acrylate
40	100	93	98	0	238688	bb	6.49	69	Methyl methacrylate
41	0	0	0	0	0		0.00	83	Bromodichloromethane
42	0	0	0	0	0		0.00	75	cis-1,3-Dichloropropene
43	0	0	0	0	0		0.00	75	trans-1,3-Dichloropropen
44	0	0	0	0	0		0.00	97	1,1,2-Trichloroethane
45	0	0	0	0	0		0.00	129	Dibromochloromethane
46	0	0	0	0	0		0.00	107	Ethylene dibromide
47	0	0	0	0	0		0.00	173	Bromoform
~~48~~	~~54~~	~~5~~	~~85~~	~~2~~	~~87802~~	~~A~~	~~7.51~~	43	4-Methyl-2-pentanone FP TW
49	100	94	99	1	2385944	bv	7.60	92	Toluene
50	0	0	0	0	0		0.00	164	Tetrachloroethene

Data Review: TW
Date: 7-17-97

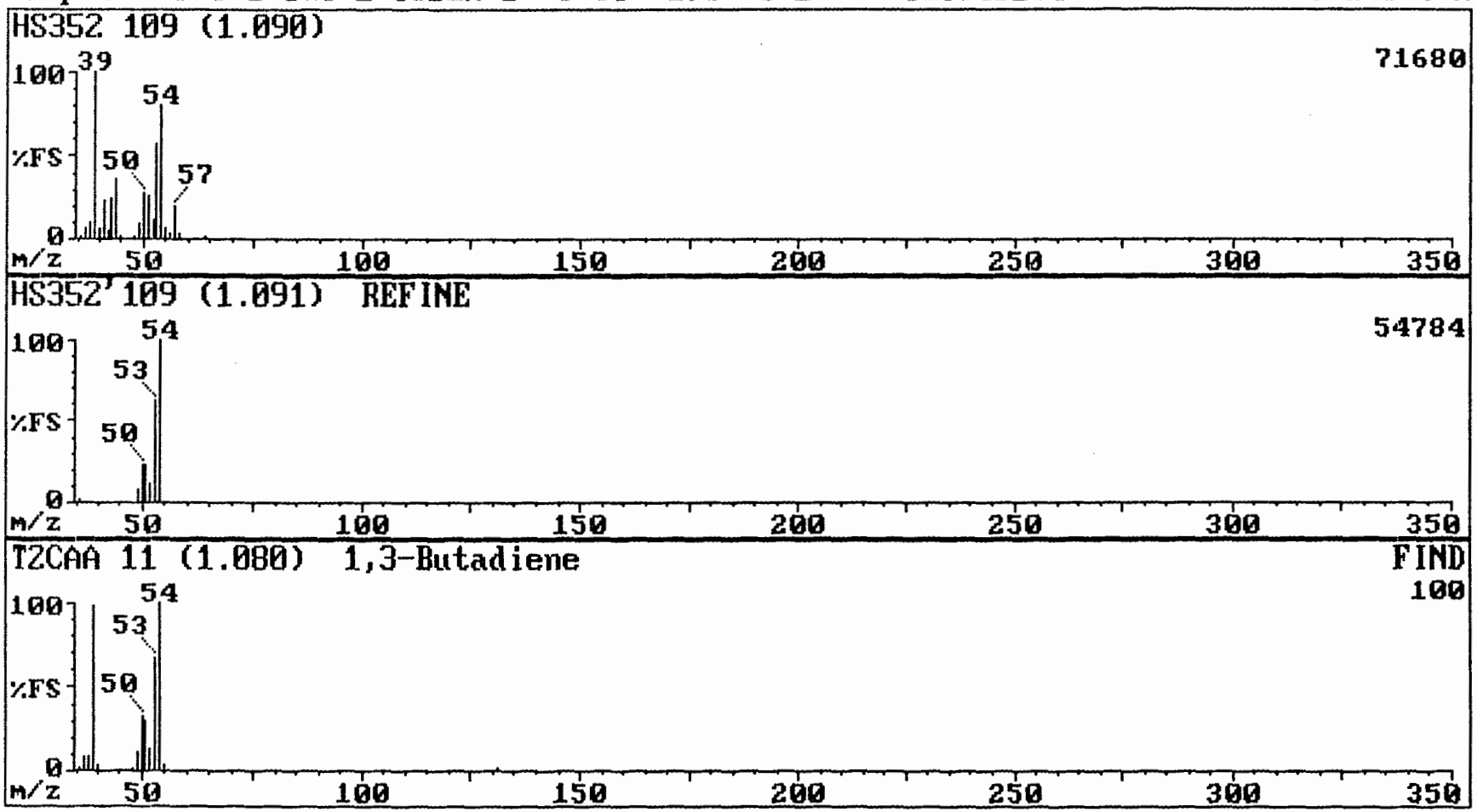
No.	MAT	FOR	REV	Delta	Area	P.Flags	RT	QM	Name
~~51~~	~~39~~	~~19~~	~~61~~	~~3~~	~~34421~~	~~vb~~	~~8.73~~	43	2-Hexanone HPTW
52	47	14	63	1	36592	bb	9.84	112	Chlorobenzene
53	100	89	99	1	315504	bv	10.13	106	Ethylbenzene
54	100	87	94	0	722900	vv	10.36	106	m-/p-Xylene
55	98	77	83	0	263740	bv	11.06	106	o-Xylene
56	100	95	98	1	3092388	bv	11.12	104	Styrene
~~57~~	~~17~~	~~4~~	~~47~~	~~20~~	~~8580~~	~~A~~	~~12.33~~	83	1,1,2,2-Tetrachloroe HPTW
58	75	44	79	1	144508	bv	11.85	105	Cumene

07-AB-97 22:19 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 2 TUBEA/B T/TC 173-46-2A/B TLI#42284 Instrument H

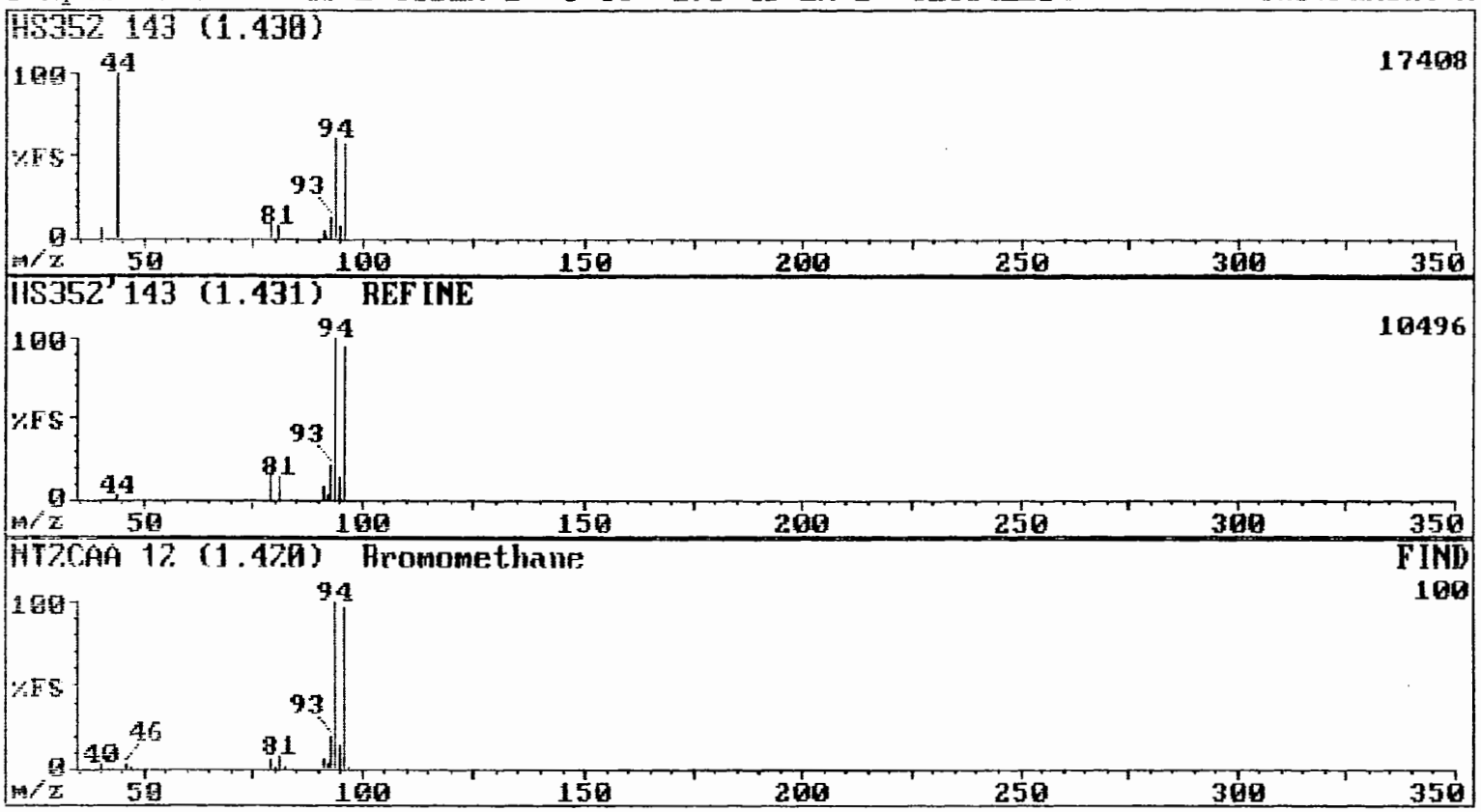


08-Jul-97 22:19 Triangle Laboratories of RTP, Inc. (919) 544-5729
Sample: VOST-1 SET 2 TUBEA/B T/TC 173-46-2A/B TLI#42284 Instrument H



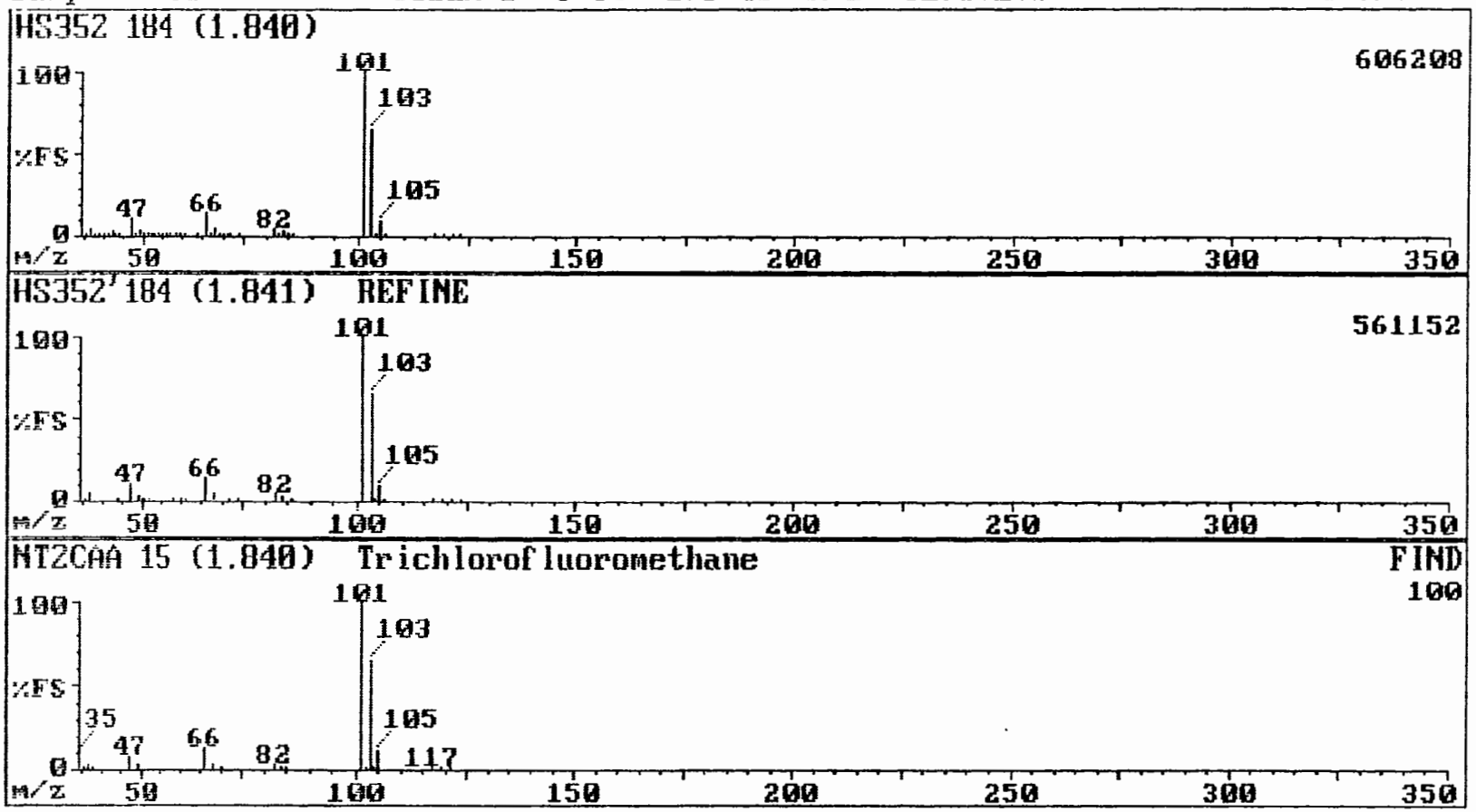
07-08-97 22:19 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 2 TUBEA/B T/TC 173-46-2A/B TLI#42284 Instrument H



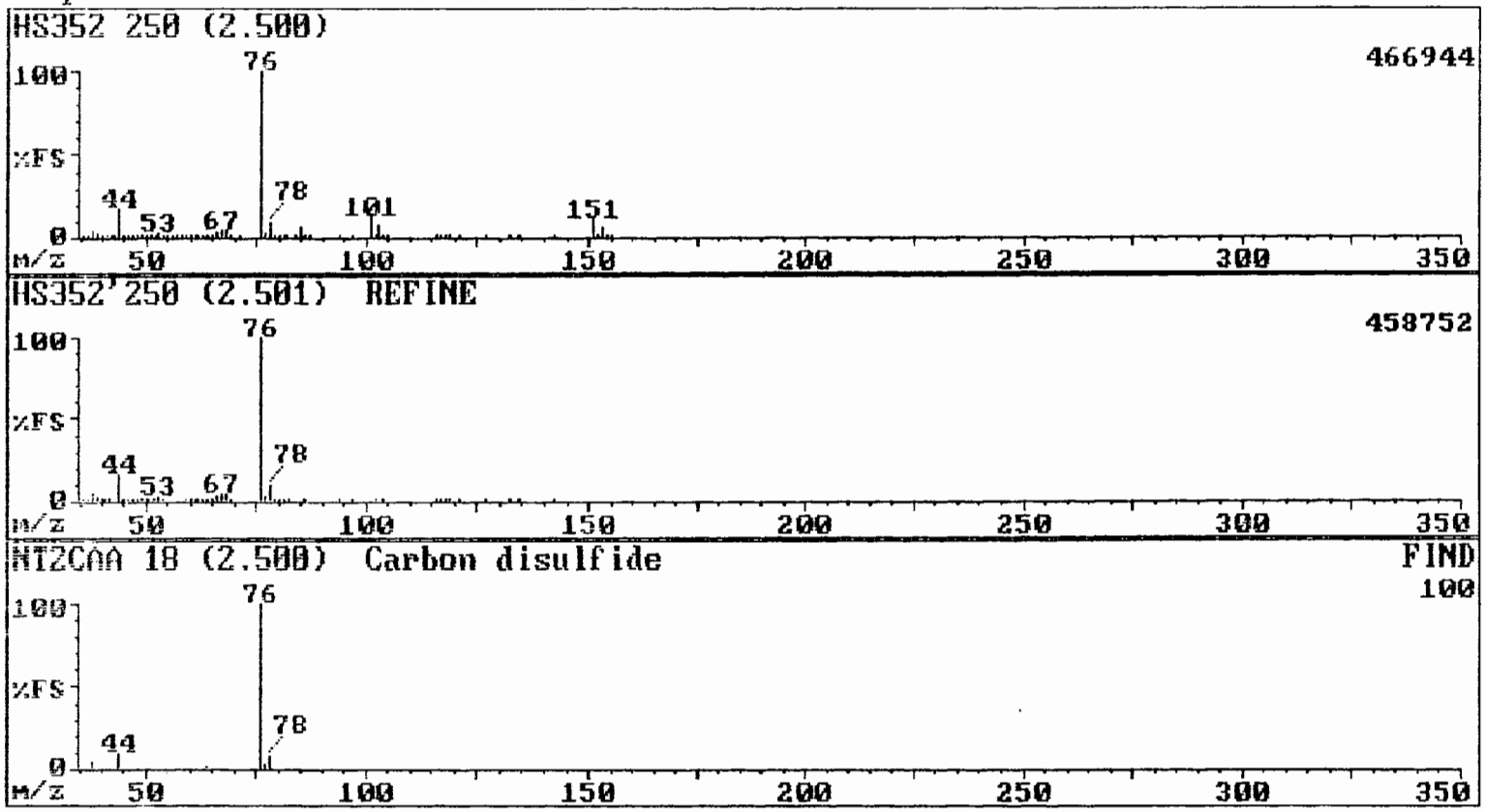
07-08-97 22:19 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 2 TUBEA/B T/TC 173-46-2A/B TLI#42284 Instrument H



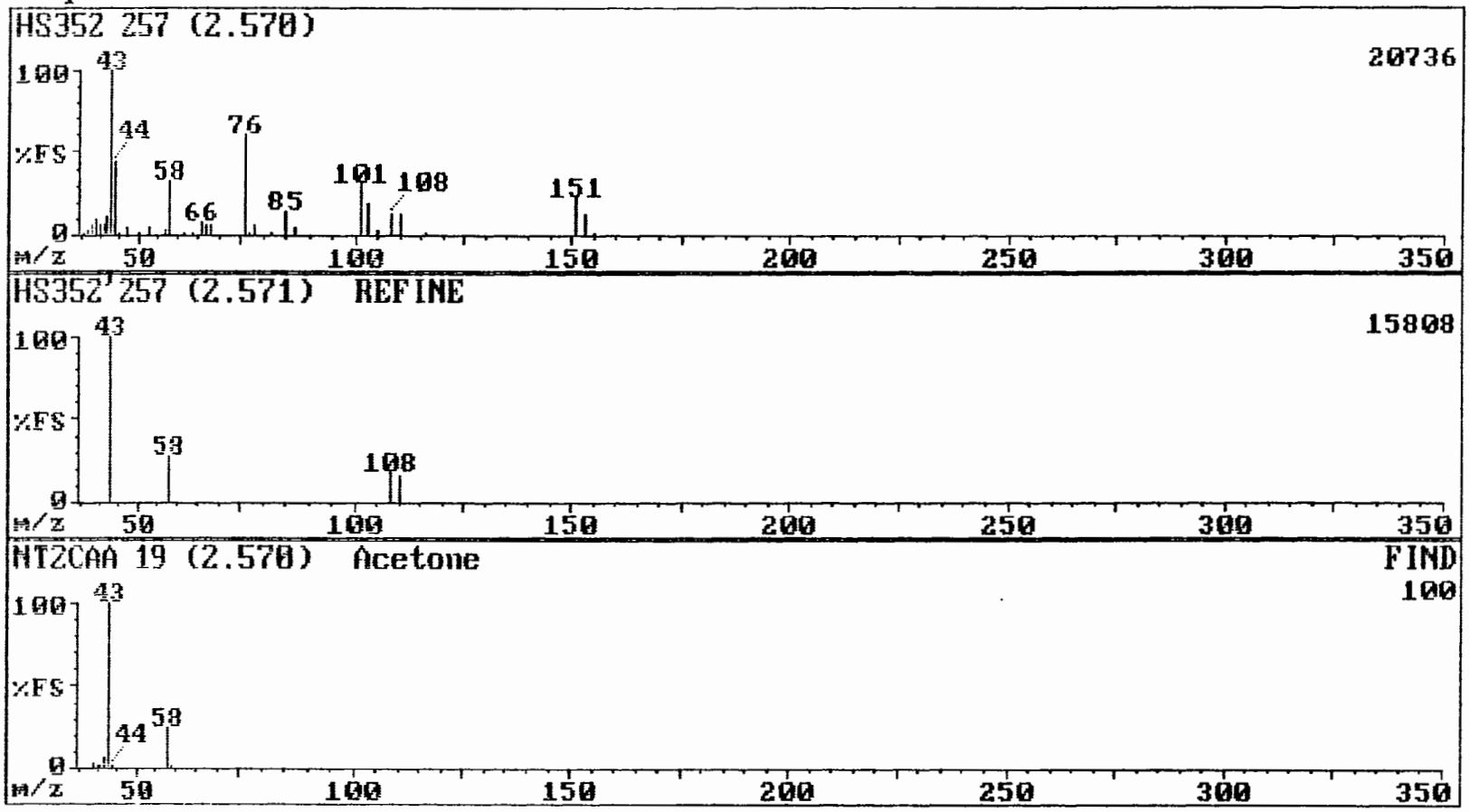
07-08-97 22:19 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 2 TUBEA/B T/TC 173-46-2A/B TLI#42284 Instrument H



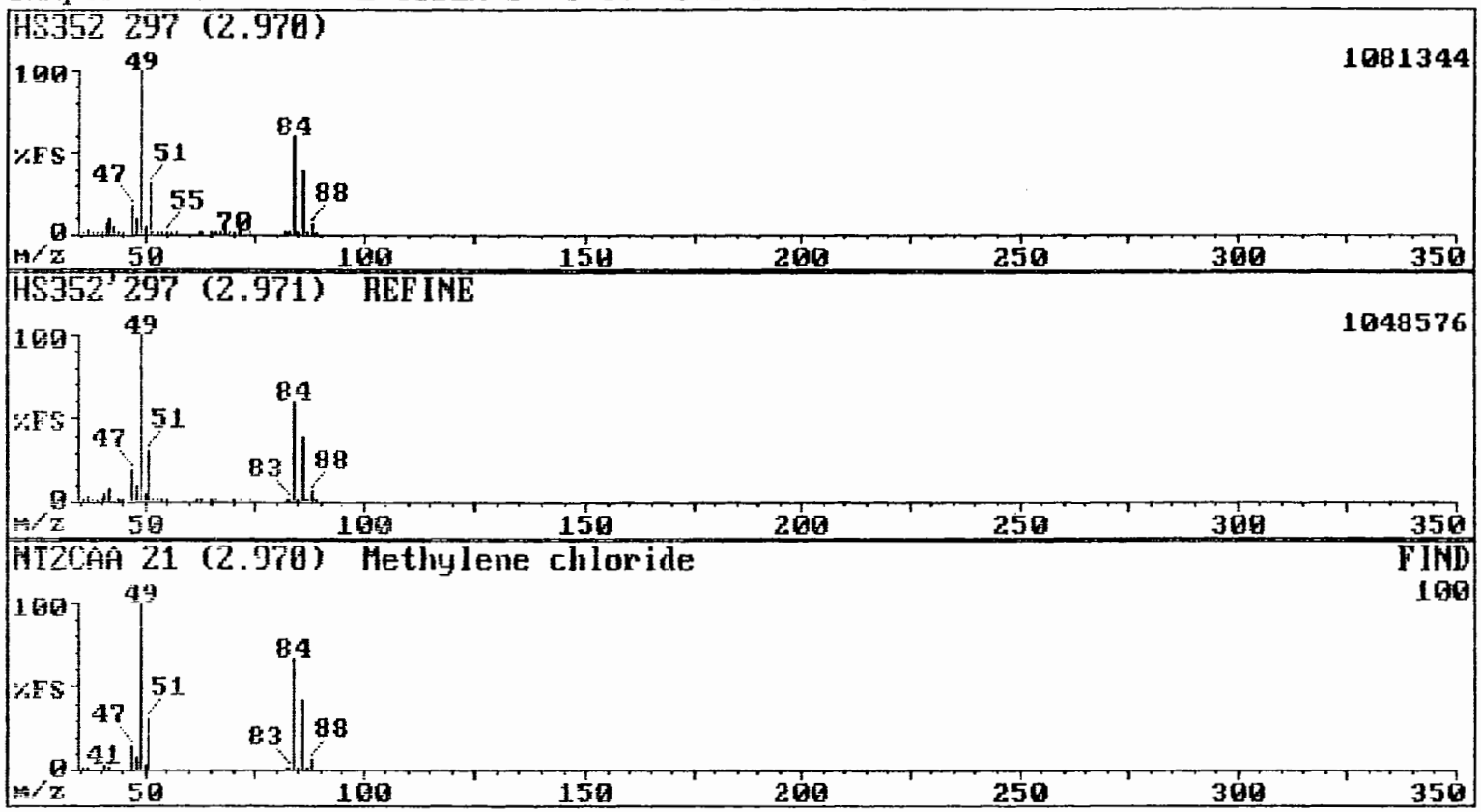
07-08-97 22:19 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 2 TUBEA/B T/TC 173-46-2A/B TLI#42284 Instrument H



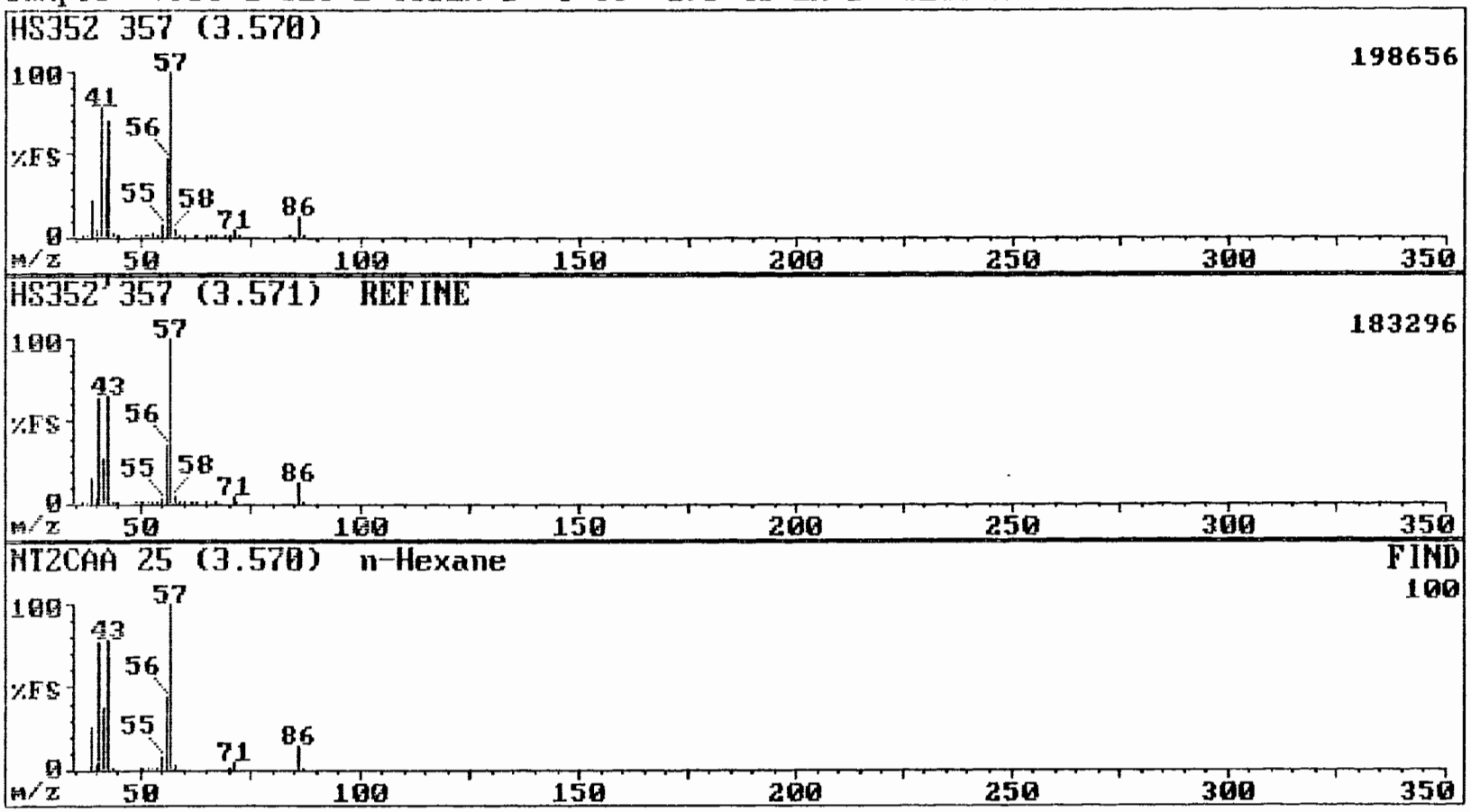
07-08-97 22:19 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 2 TUBEA/B T/TC 173-46-2A/B TLI#42284 Instrument H



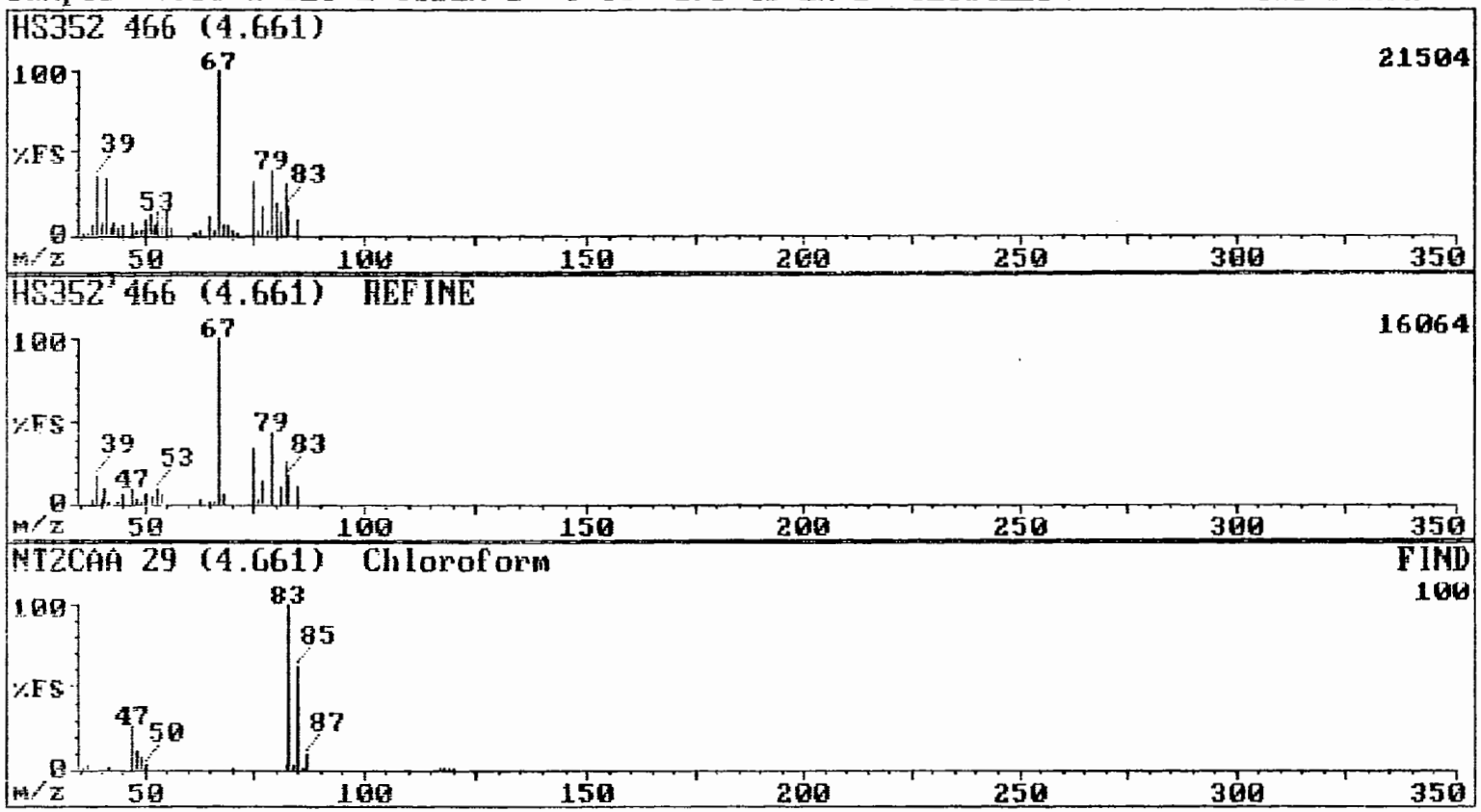
07-08-97 22:19 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 2 TUBEA/B T/TC 173-46-2A/B TLI#42284 Instrument H



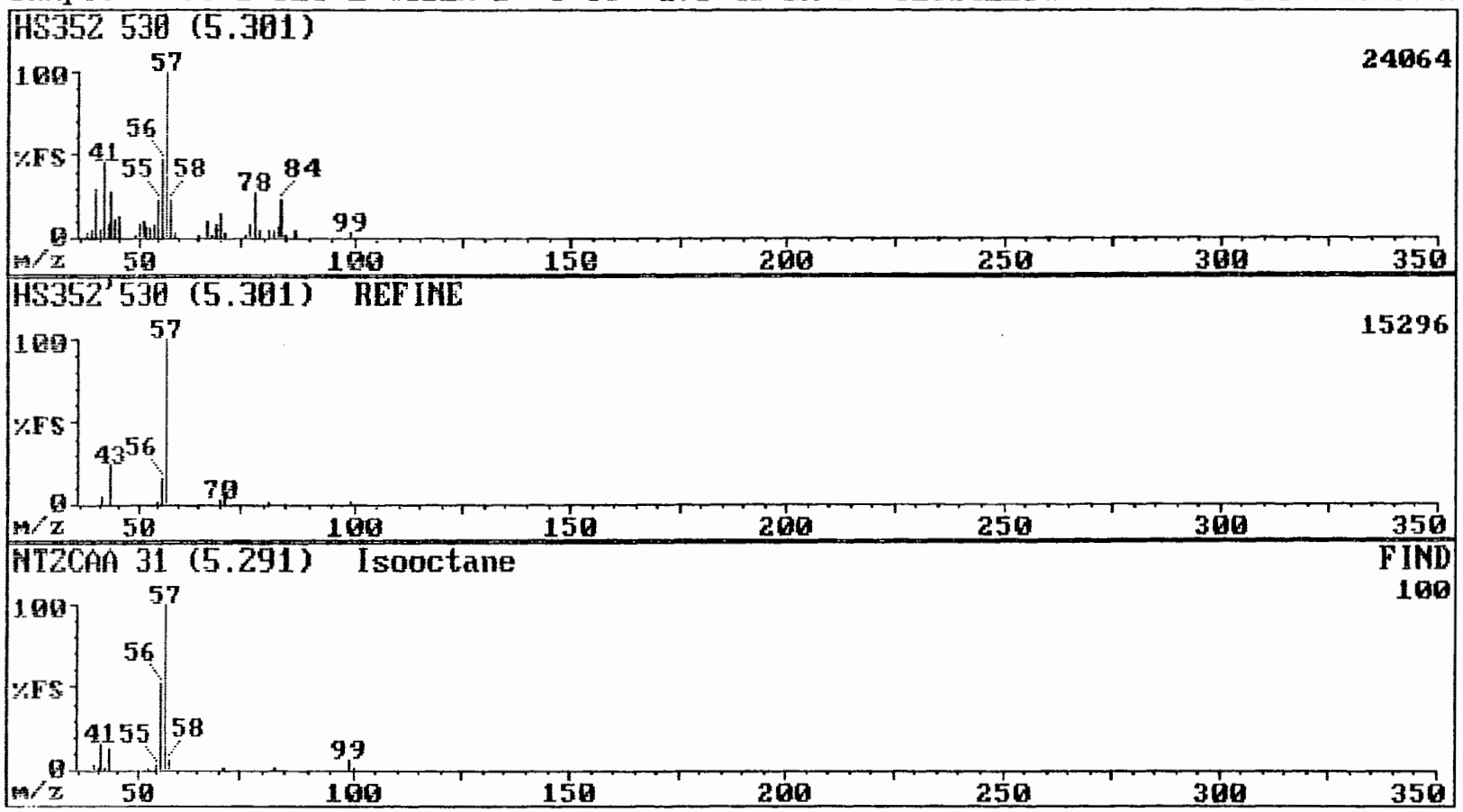
07-08-97 22:19 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 2 TUBEA/B T/TC 173-46-2A/B TLI#42284 Instrument H



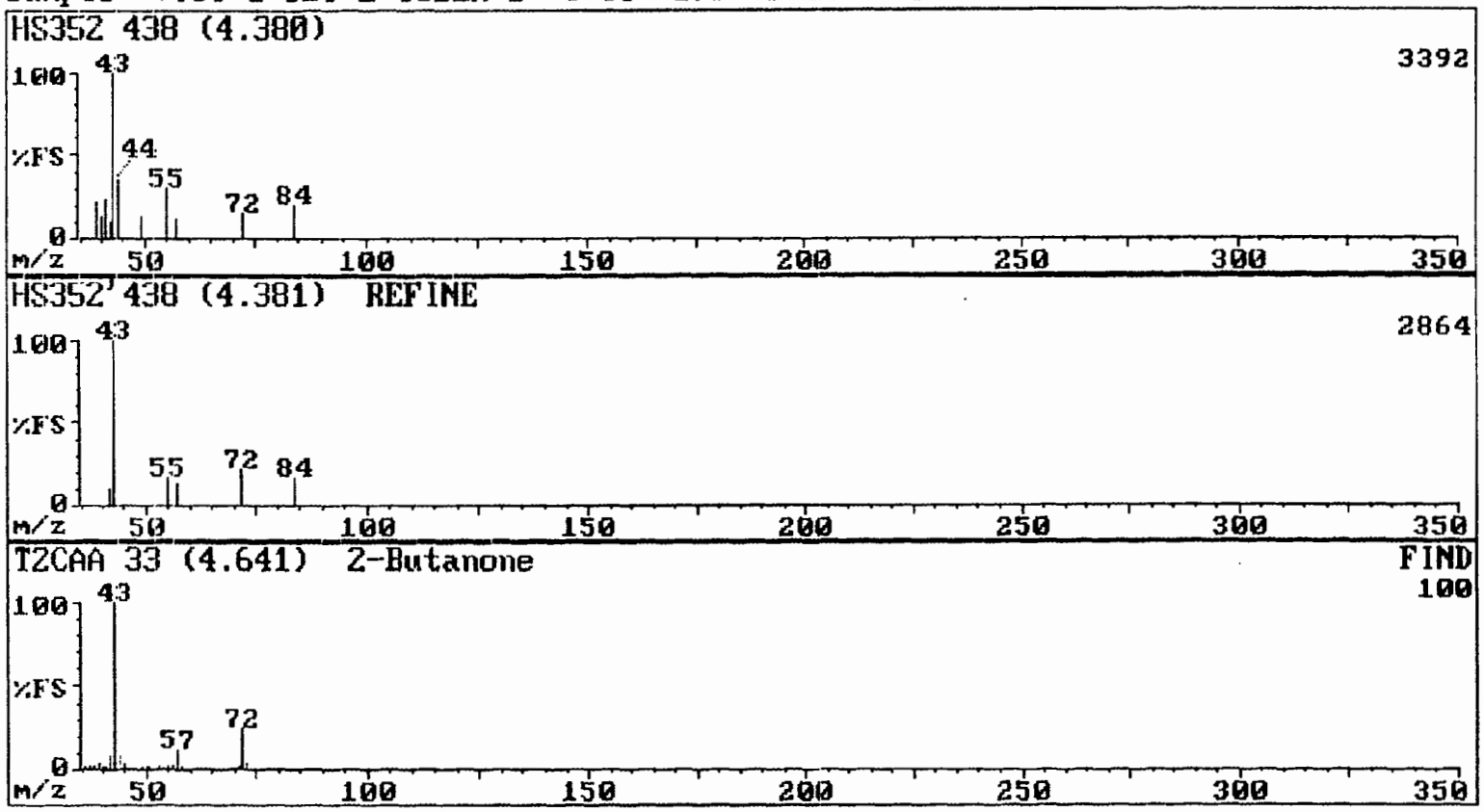
07-08-97 22:19 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 2 TUBEA/B T/TC 173-46-2A/B TLI#42284 Instrument H



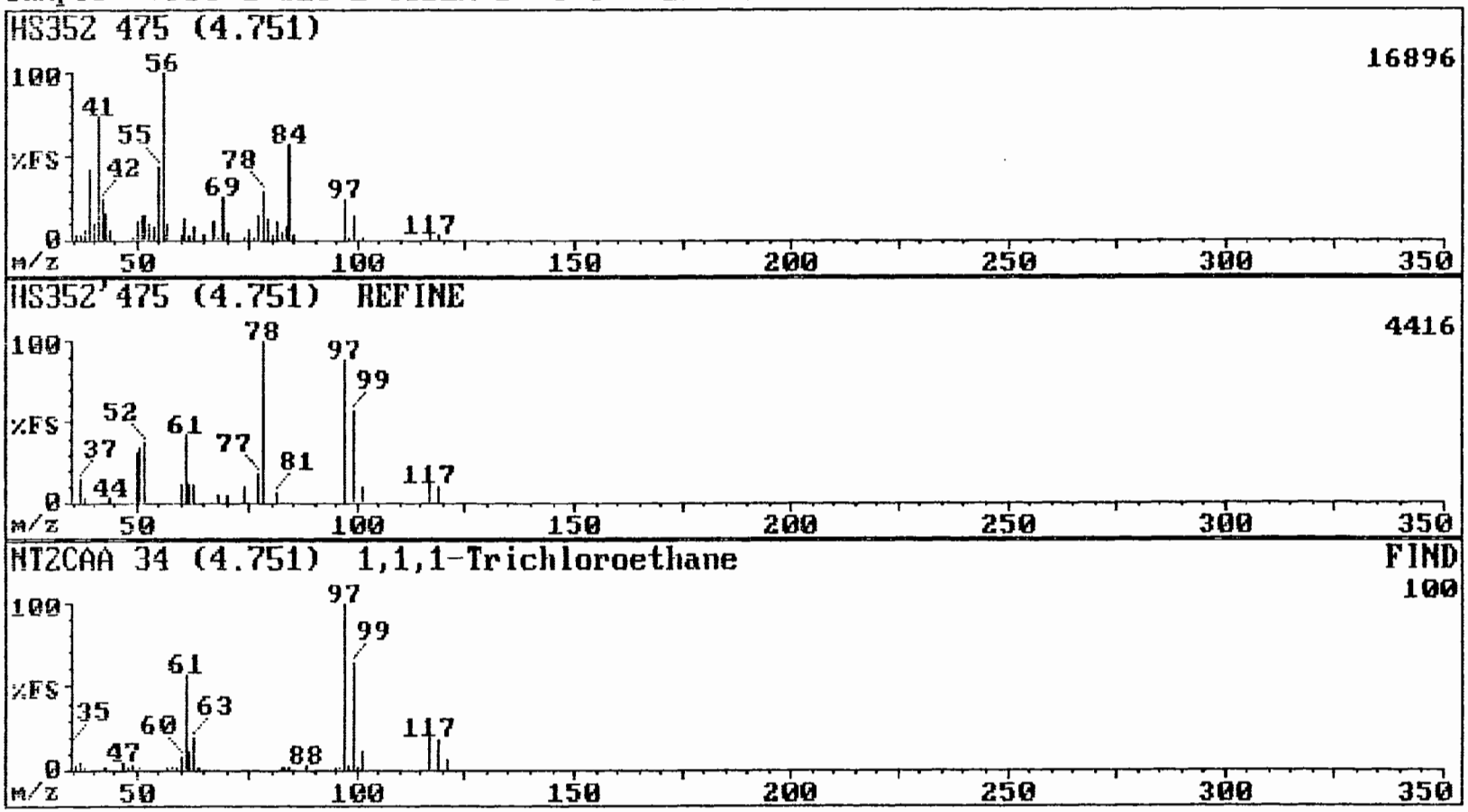
08-Jul-97 22:19 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 2 TUBEA/B T/TC 173-46-2A/B TLI#42284 Instrument H



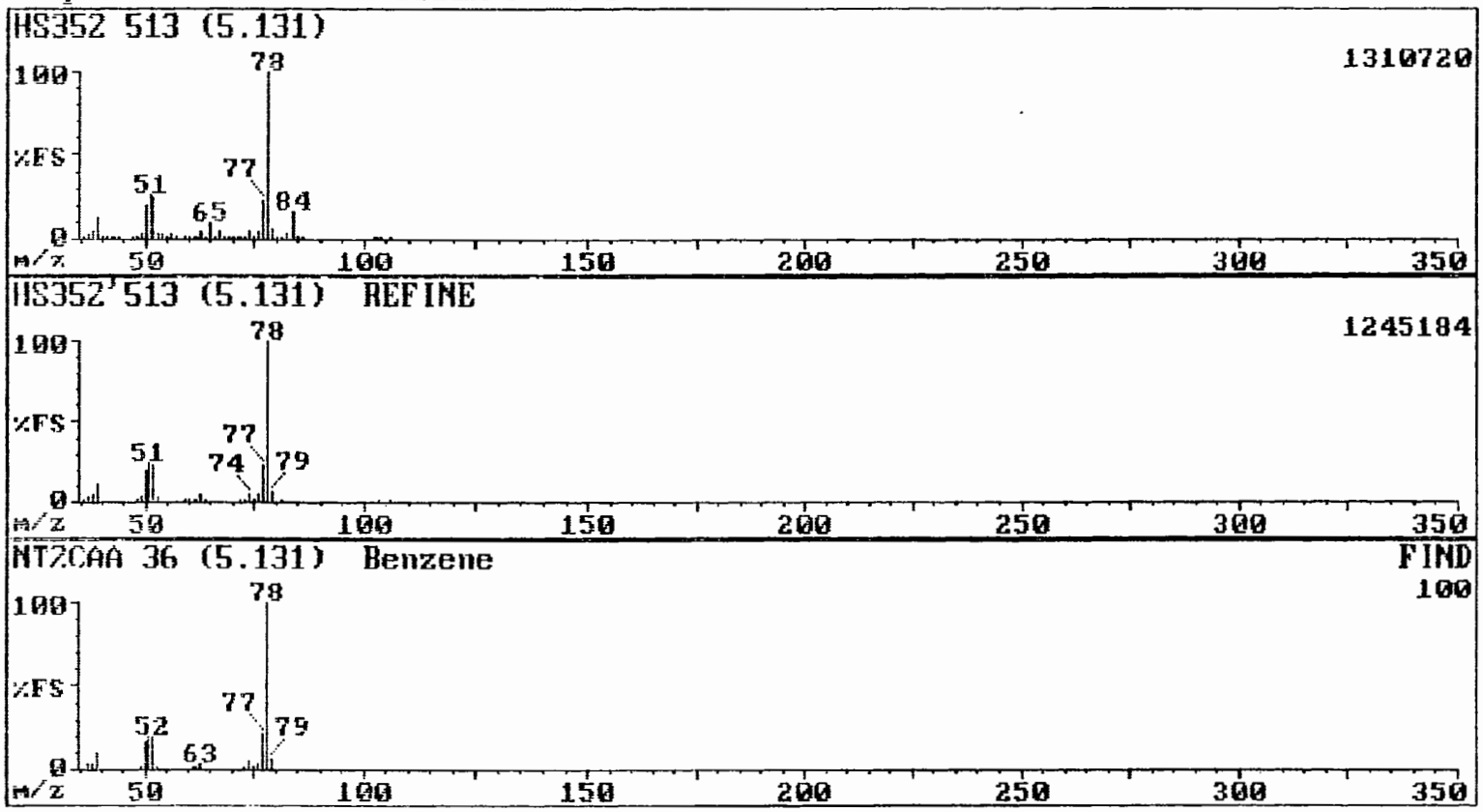
07-08-97 22:19 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 2 TUBEA/B T/TC 173-46-2A/B TLI#42284 Instrument H



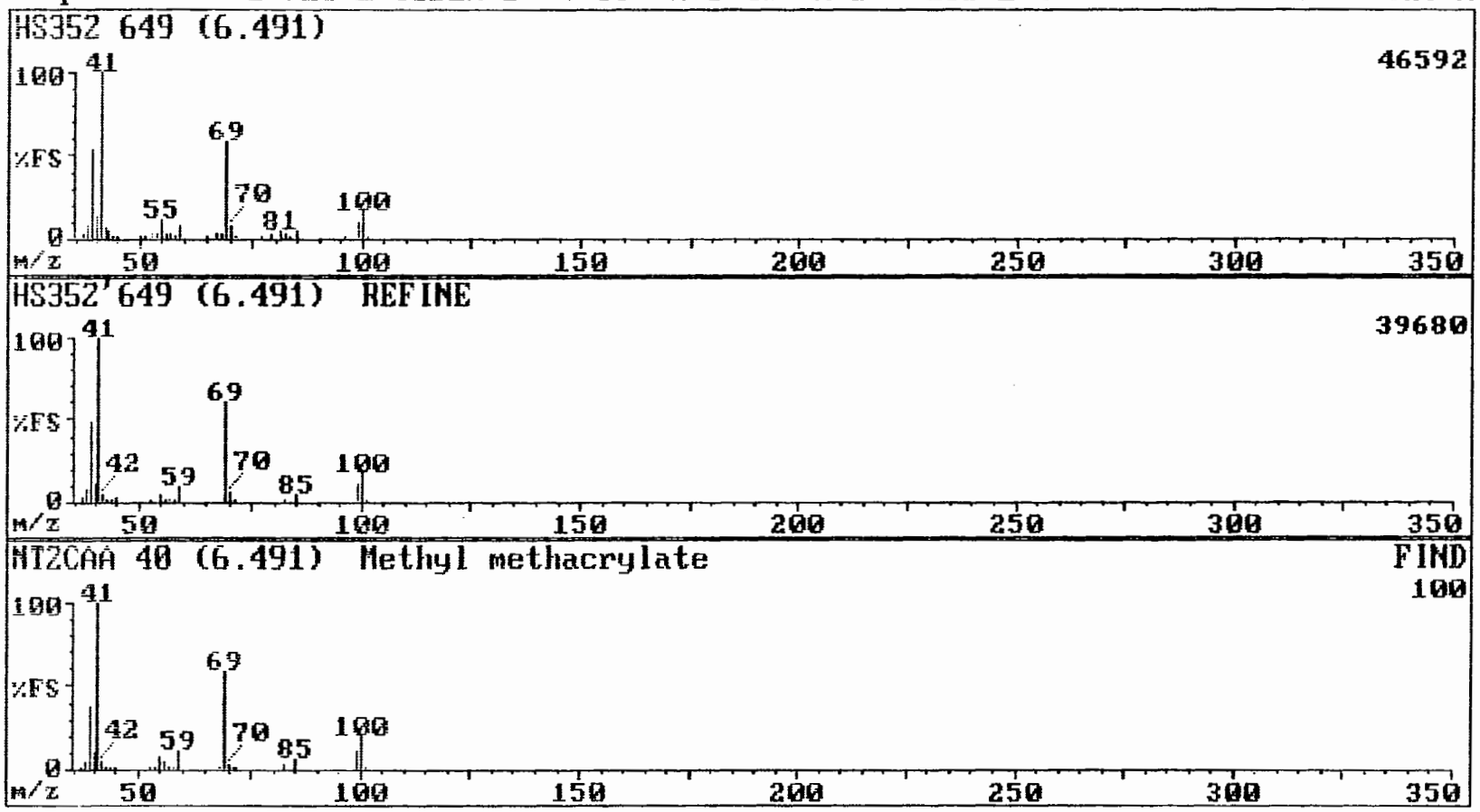
07-08-97 22:19 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 2 TUBEA/B T/TC 173-46-2A/B TLI#42284 Instrument H



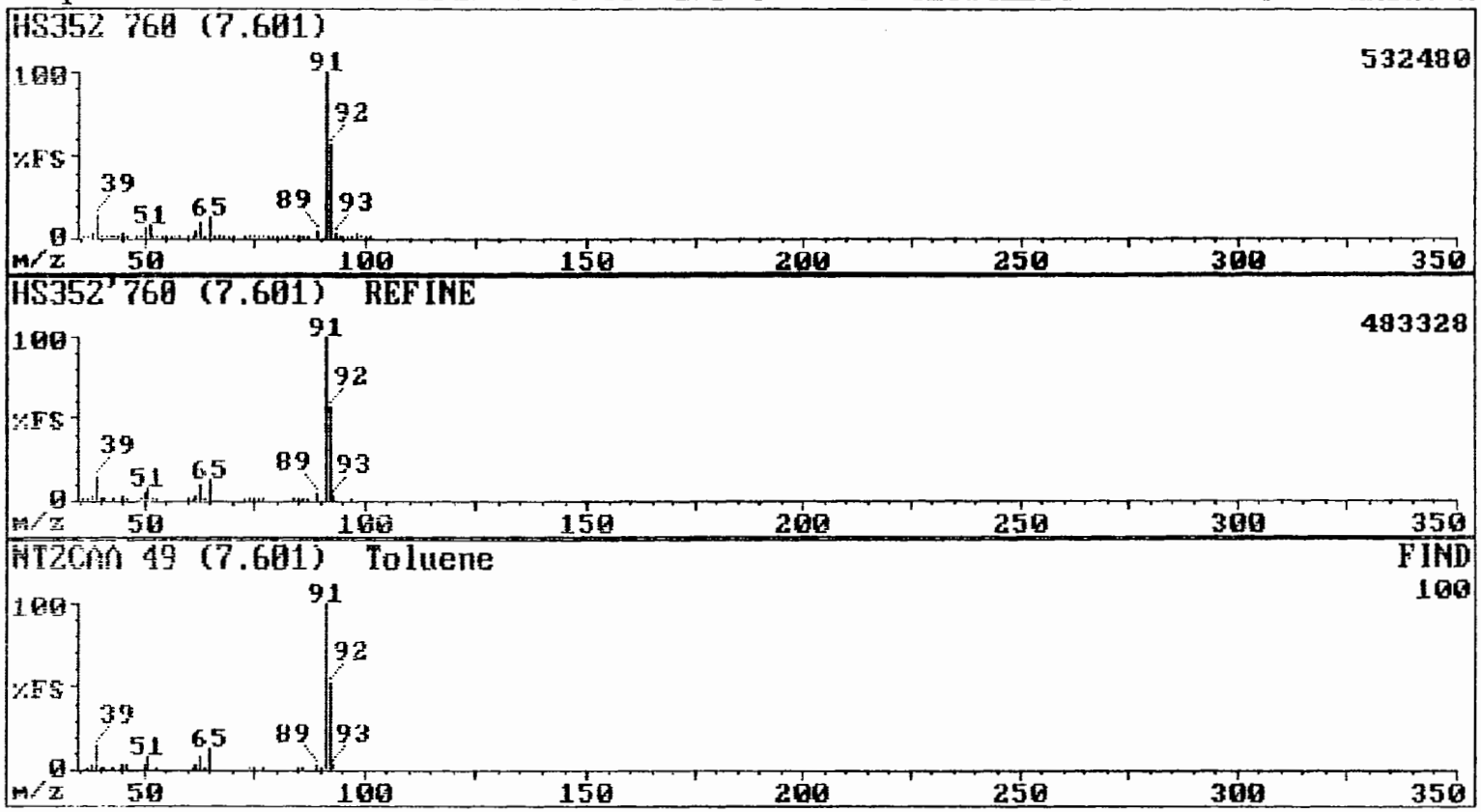
07-08-97 22:19 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 2 TUBEA/B T/TC 173-46-2A/B TLI#42284 Instrument H



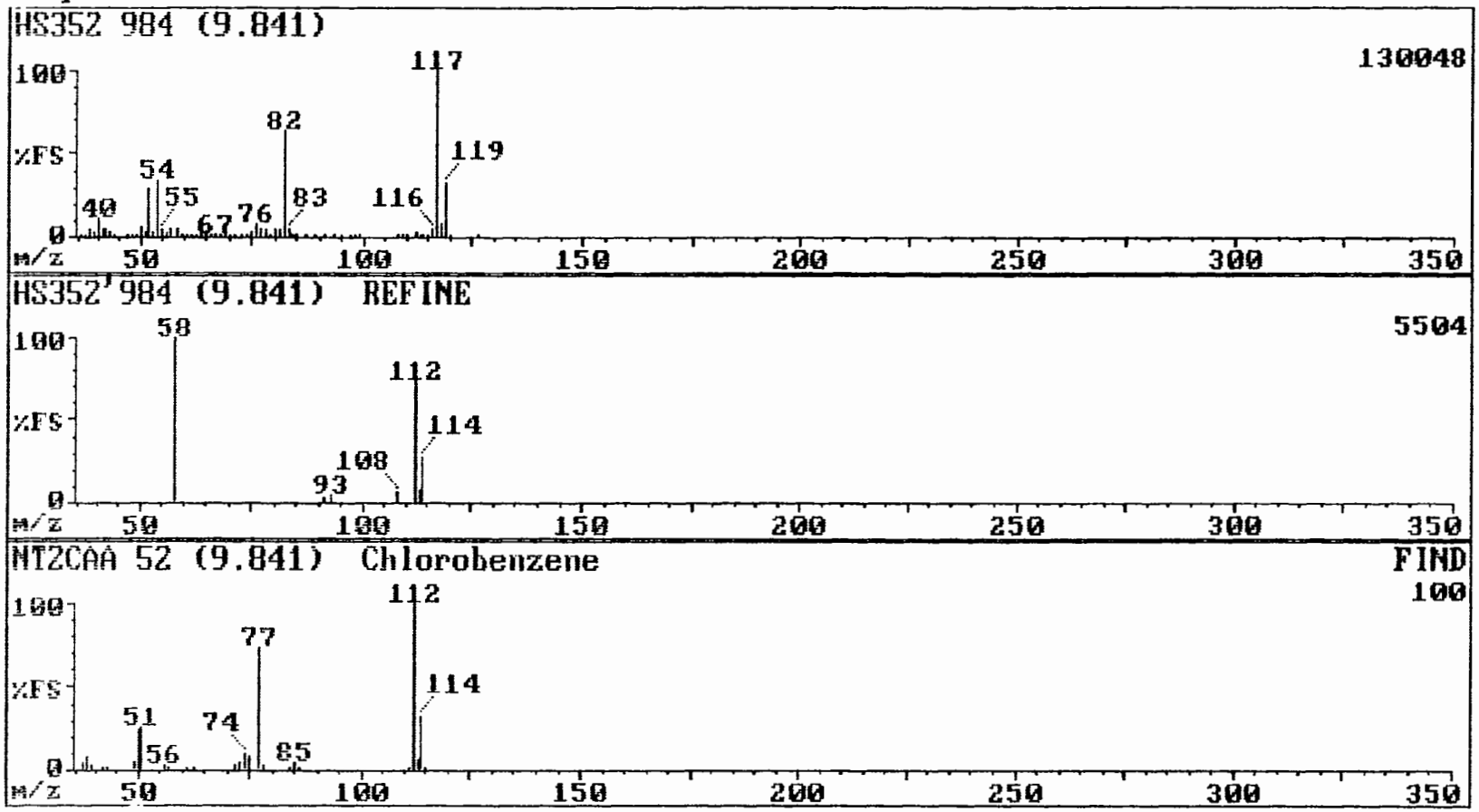
07-08-97 22:19 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 2 TUBEA/B T/TC 173-46-2A/B TLI#42284 Instrument H



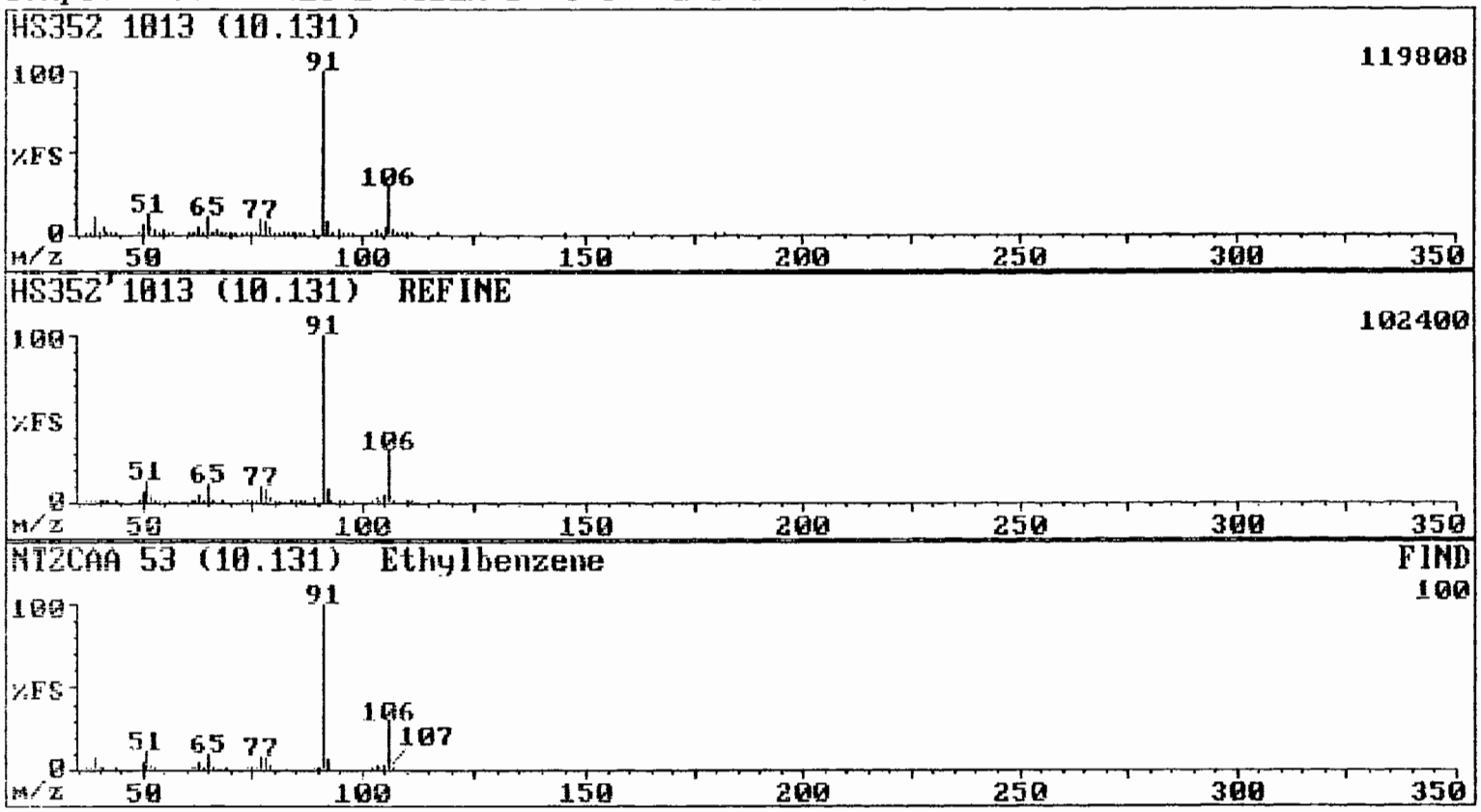
07-08-97 22:19 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 2 TUBEA/B T/TC 173-46-2A/B TLI#42284 Instrument H



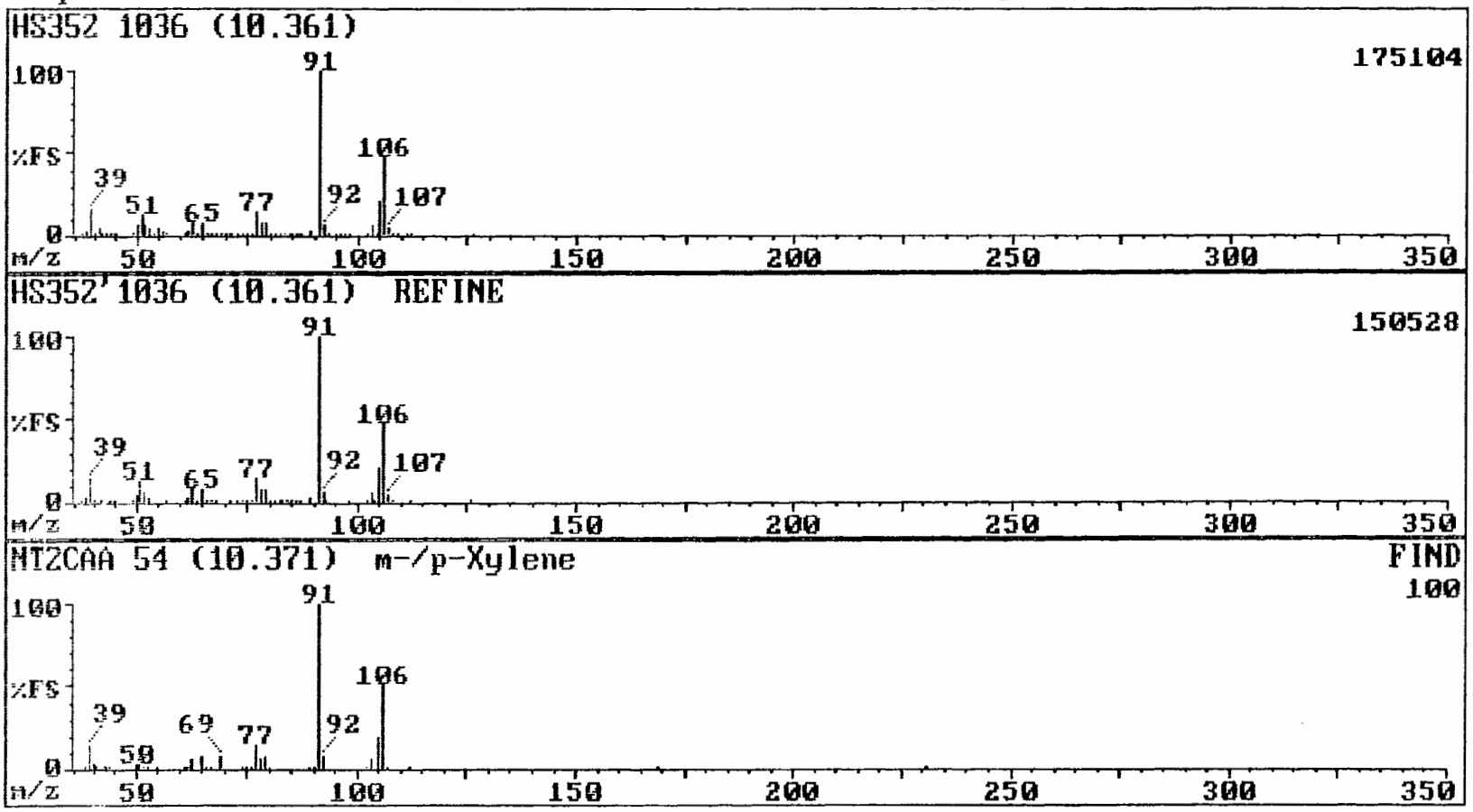
07-08-97 22:19 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 2 TUBEA/B T/TC 173-46-2A/B TLI#42284 Instrument H



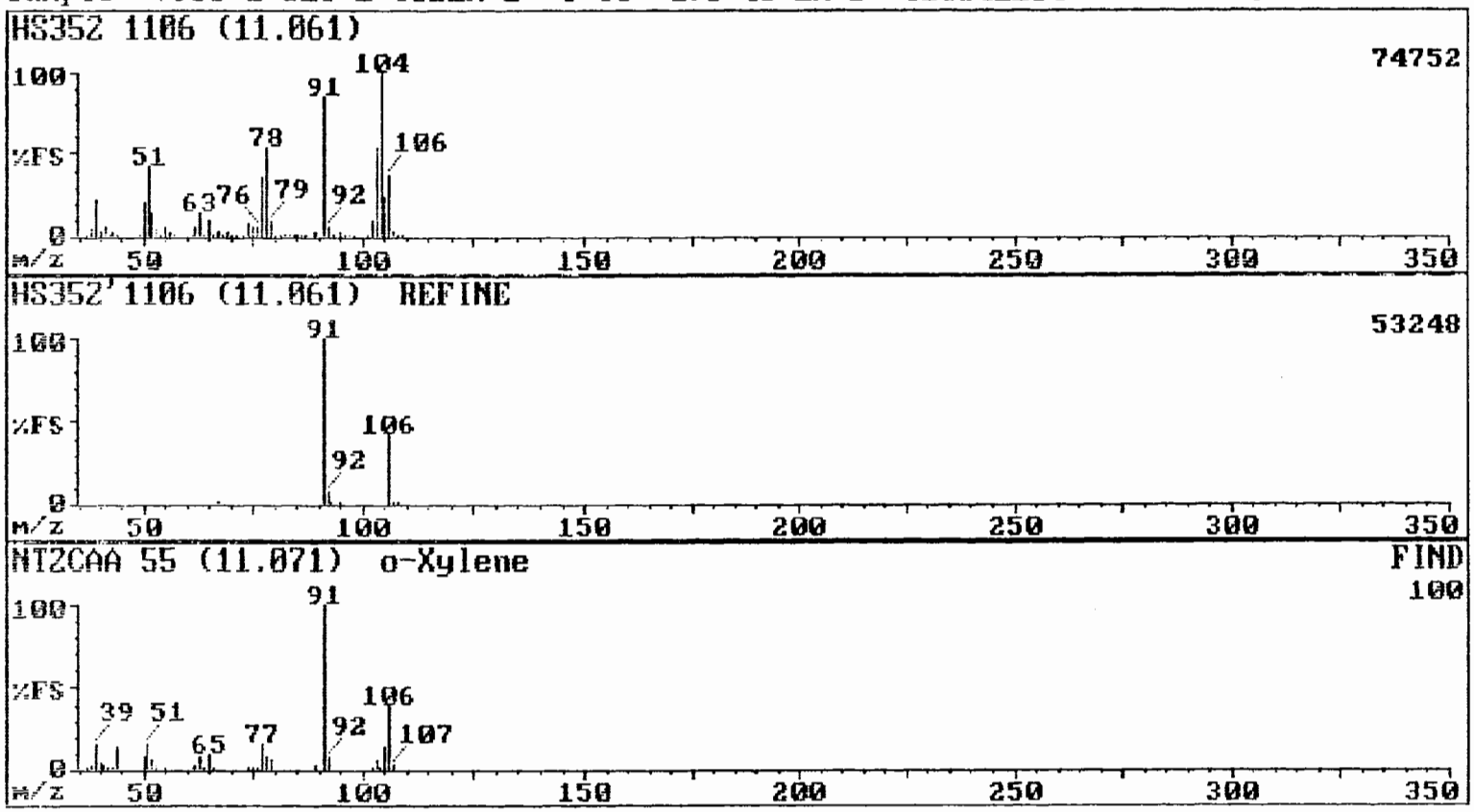
07-08-97 22:19 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 2 TUBEA/B T/TC 173-46-2A/B TLI#42284 Instrument H

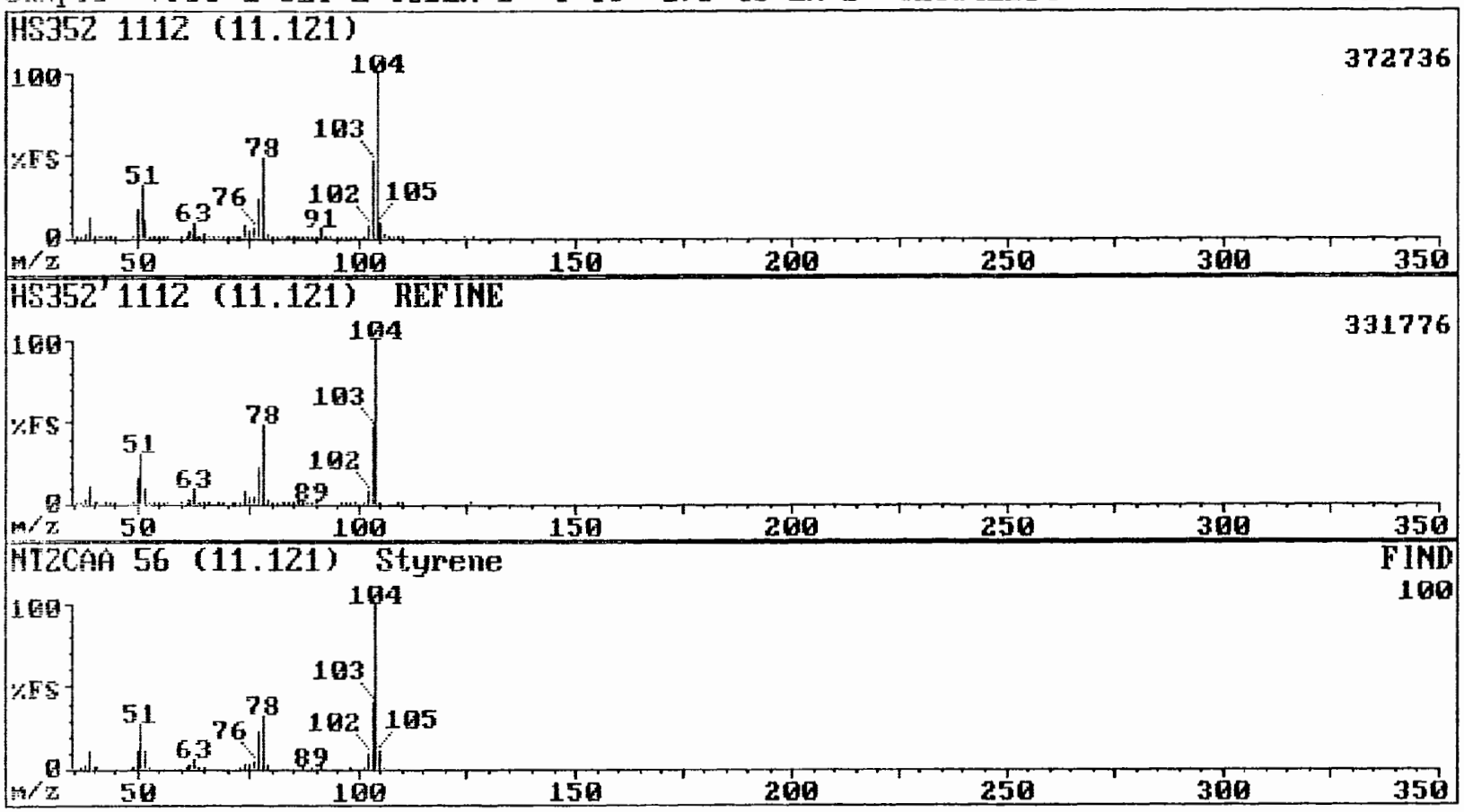


07-08-97 22:19 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 2 TUBEA/B T/TC 173-46-2A/B TLI#42284 Instrument H

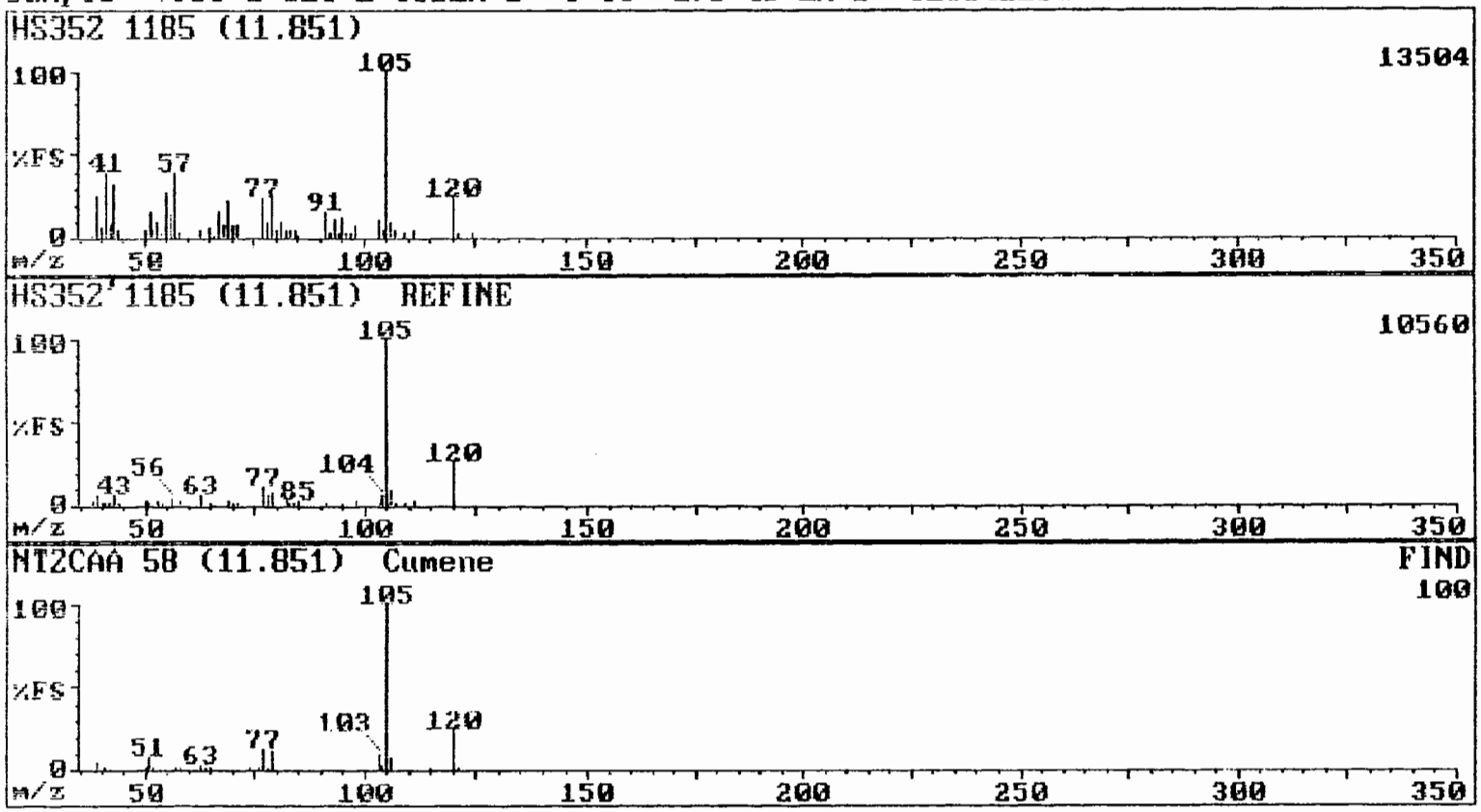


07-08-97 22:19 Triangle Laboratories of RTP, Inc. (919) 544-5729
Sample: VOST-1 SET 2 TUBEA/B T/TC 173-46-2A/B TLI#42284 Instrument H



07-08-97 22:19 Triangle Laboratories of RTP, Inc. (919) 544-5729

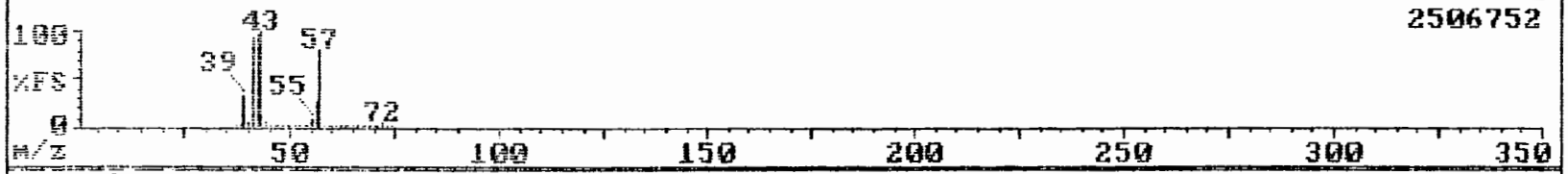
Sample: VOST-1 SET 2 TUBEA/B T/TC 173-46-2A/B TLI#42284 Instrument H



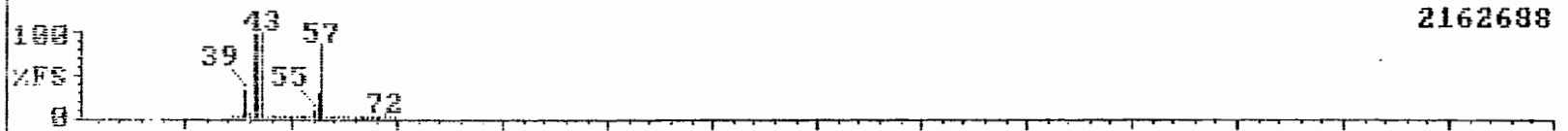
07/08/97 22:19 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 2 TUBEA/B T/TC 173-46-2A/B TLI#42284 Instrument: H

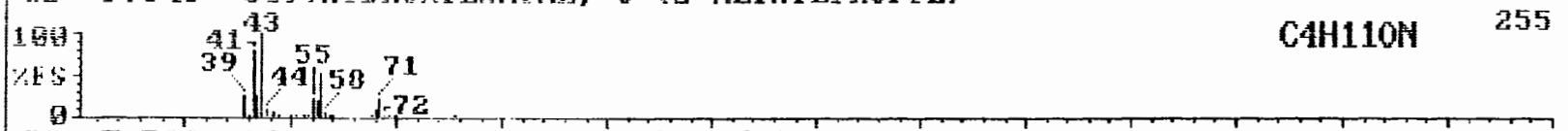
HS352 163 (1.630) NBS 2506752



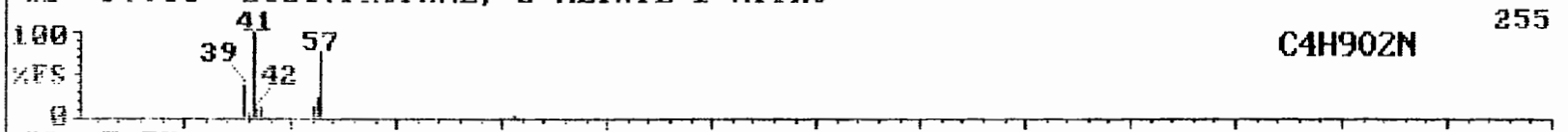
HS352' 163 (1.631) REFINE NBS 242 Hits : 242 Searched 2162688



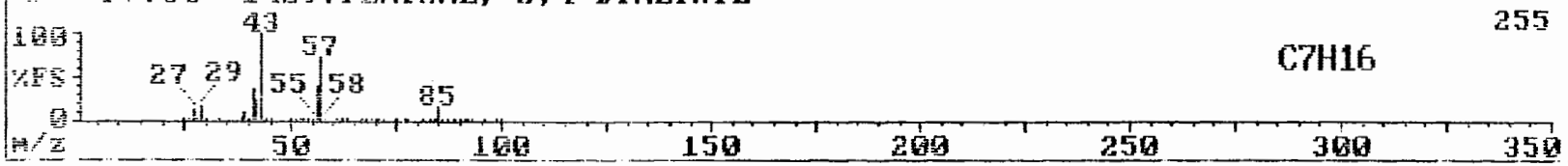
#1 F:846 809:HYDROXYLAMINE, O-(2-METHYLPROPYL)- C4H11ON 255



#2 F:763 1620:PROPANE, 2-METHYL-1-NITRO- C4H9O2N 255

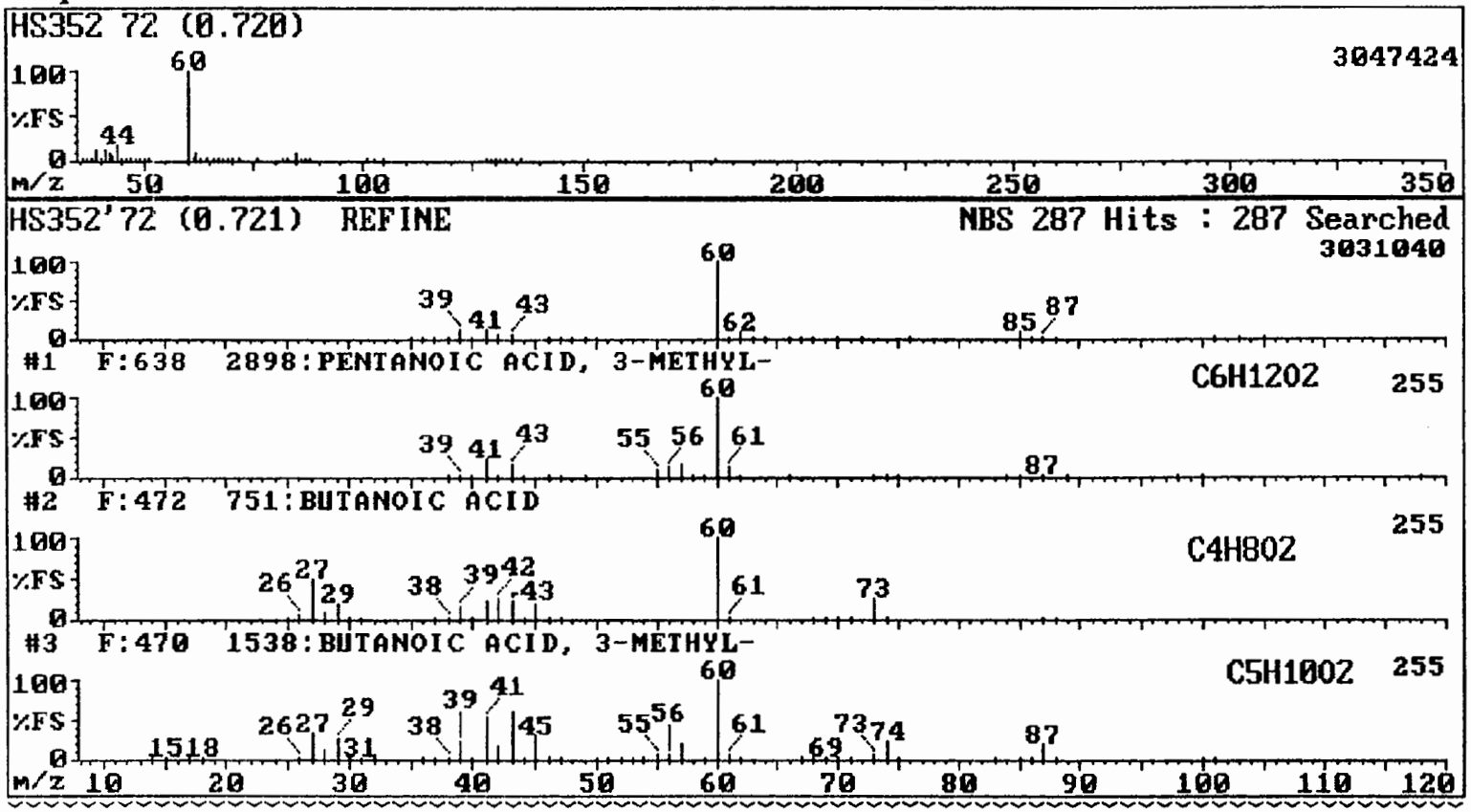


#3 F:750 1429:PENTANE, 2,4-DIMETHYL- C7H16 255



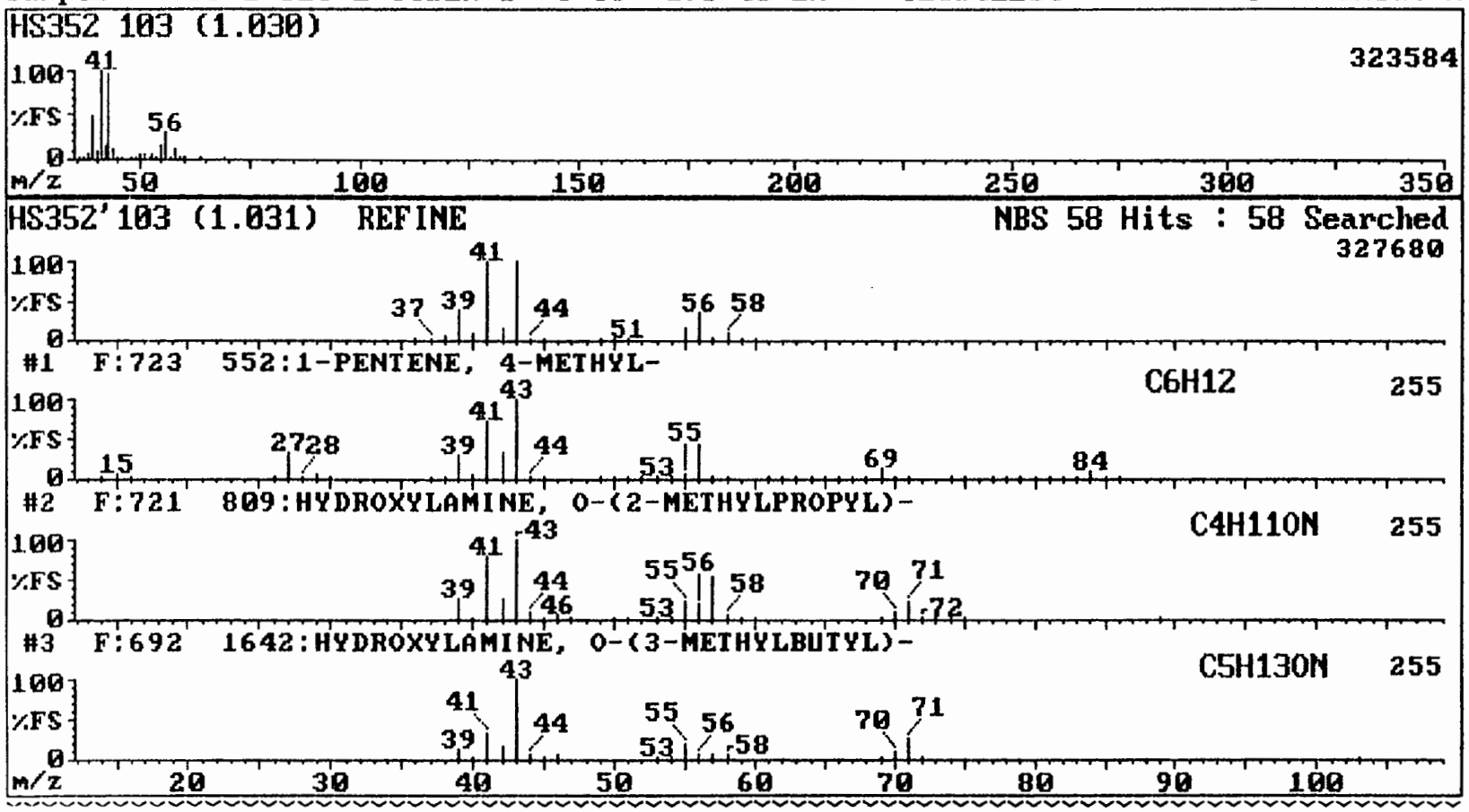
08-Jul-97 22:19 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 2 TUBEA/B T/TC 173-46-2A/B TLI#42284 Instrument H



08-Jul-97 22:19 Triangle Laboratories of RTP, Inc. (919) 544-5729

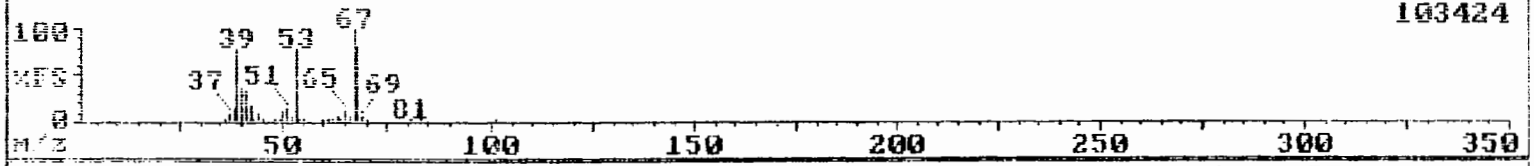
Sample: VOST-1 SET 2 TUBEA/B T/TC 173-46-2A/B TLI#42284 Instrument H



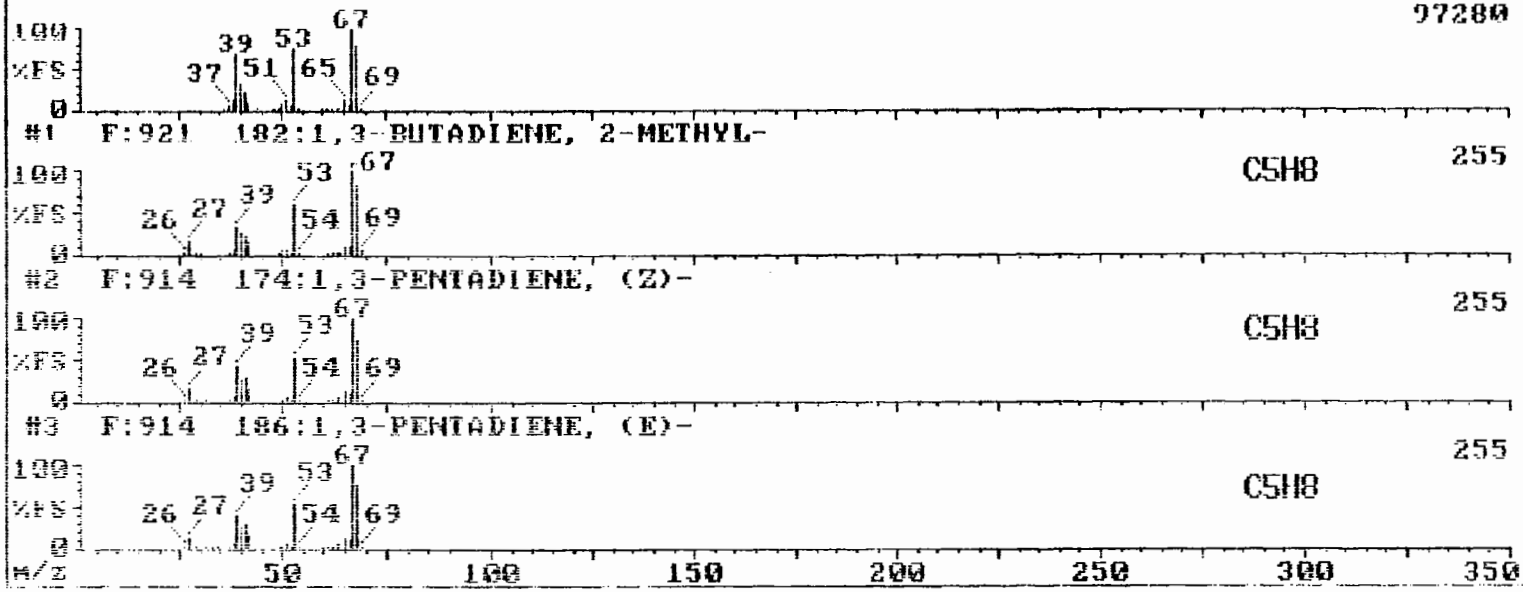
07/08/97 22:19 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 2 TUBEA/B T/TC 173-46-2A/B TLI#42284 Instrument: H

HS352 220 (2.200) NBS 103424



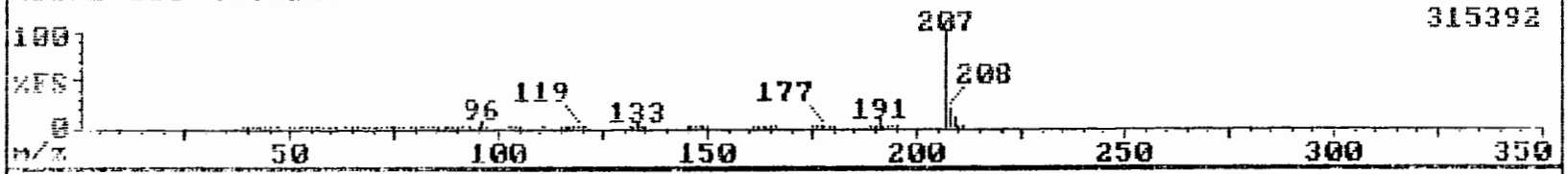
HS352'220 (2.201) REFINE NBS 33 Hits : 33 Searched 97280



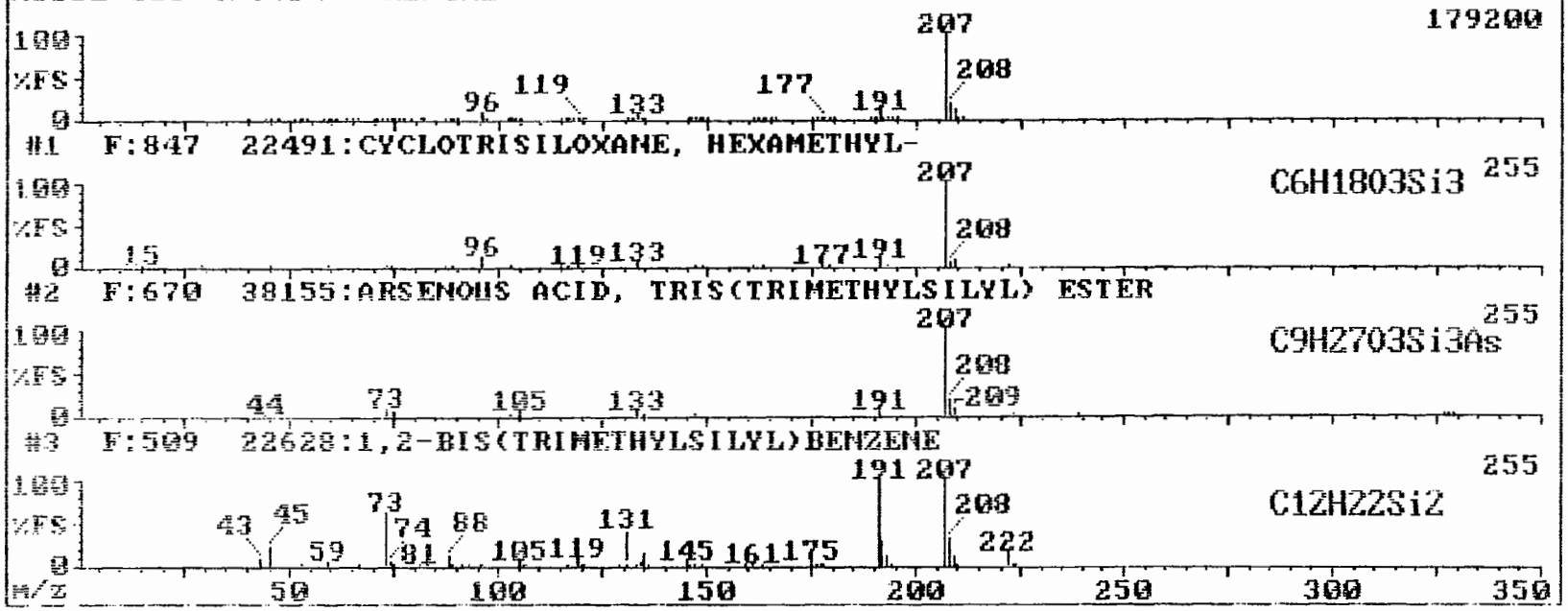
07/08/97 22:19 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 2 TUBEA/B T/TC 173-46-2A/B TLI#42284 Instrument: H

HS352 869 (8.691) NBS 315392

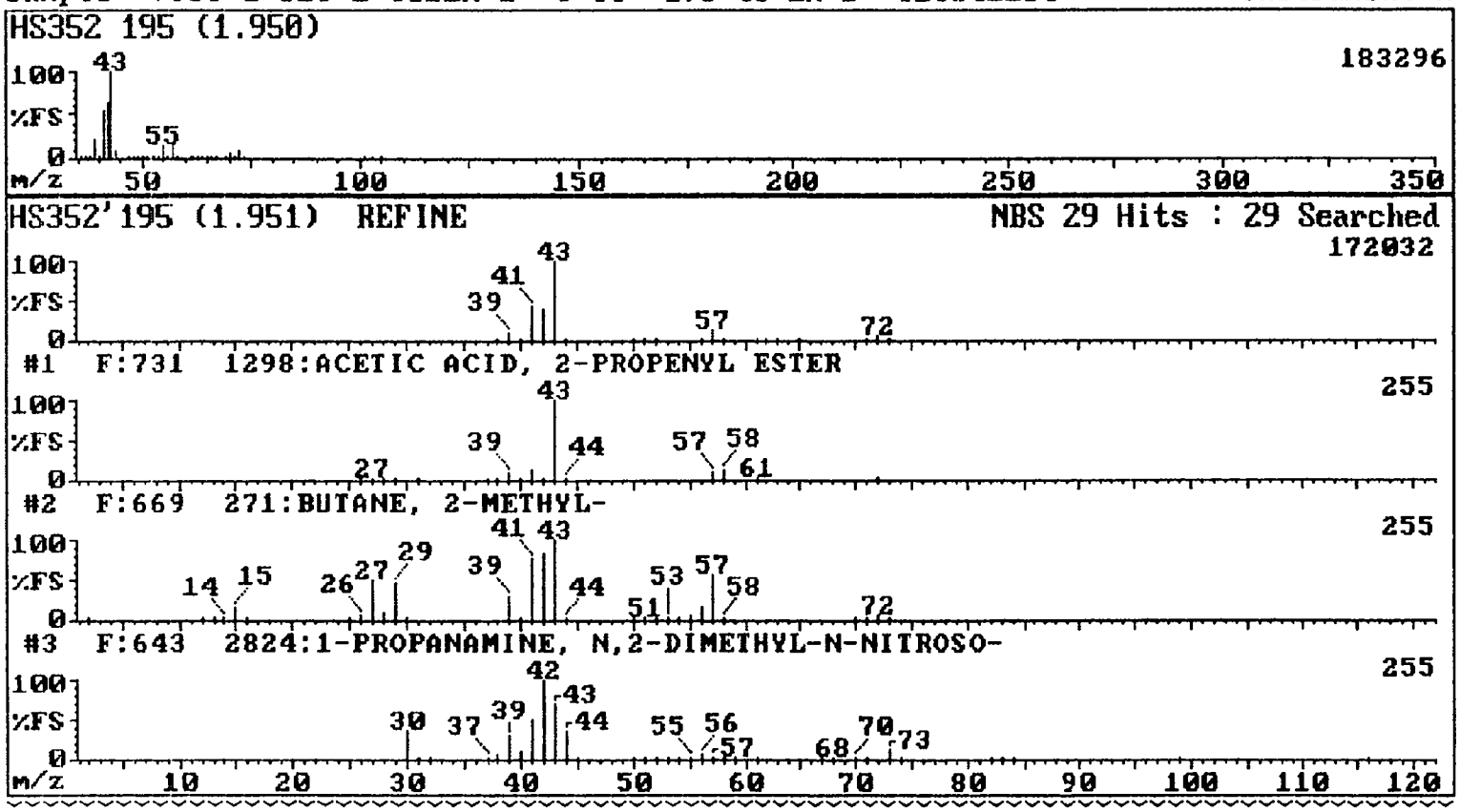


HS352'869 (8.691) REFINE NBS 24 Hits : 24 Searched



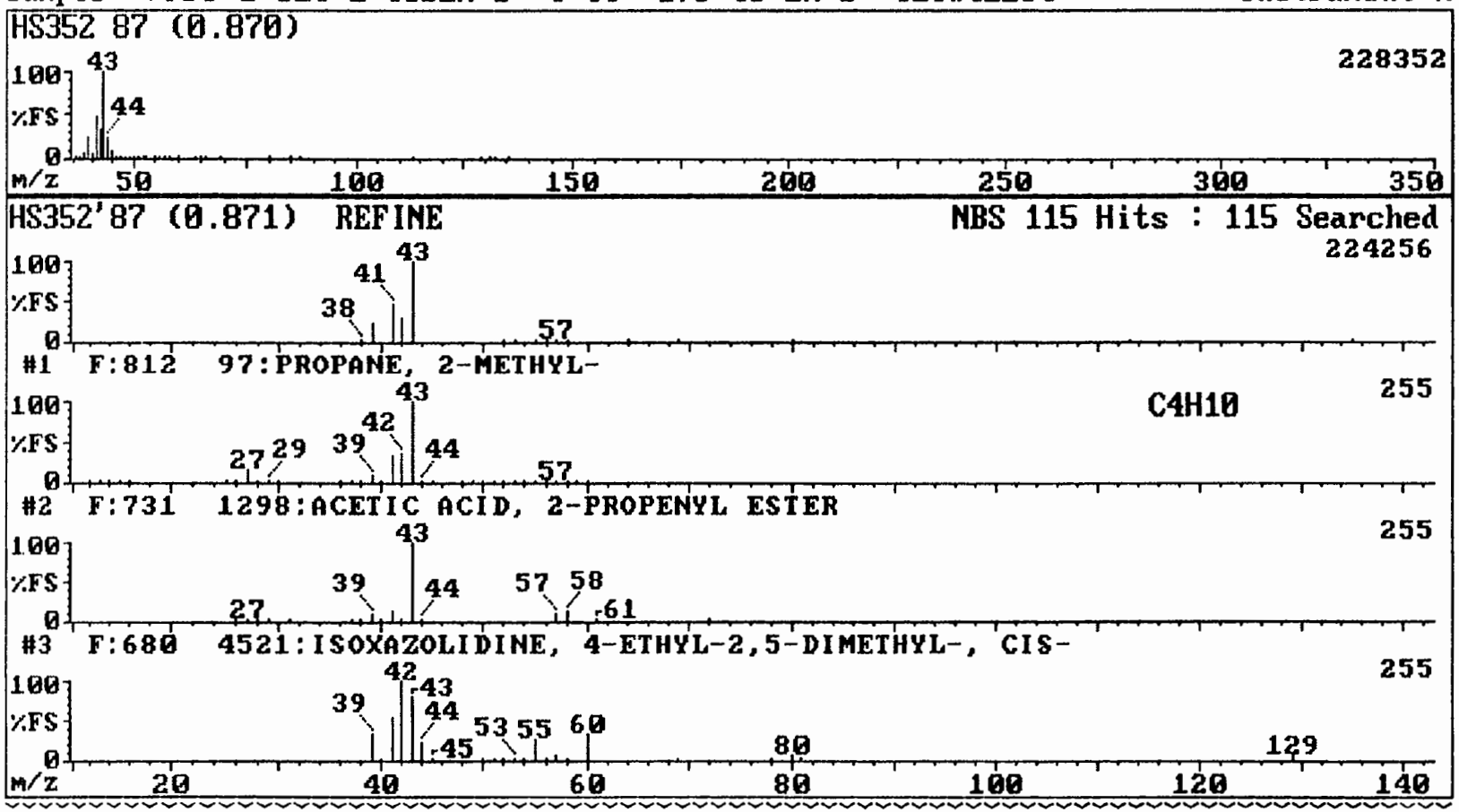
08-Jul-97 22:19 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 2 TUBEA/B T/TC 173-46-2A/B TLI#42284 Instrument H



08-Jul-97 22:19 Triangle Laboratories of RTP, Inc. (919) 544-5729

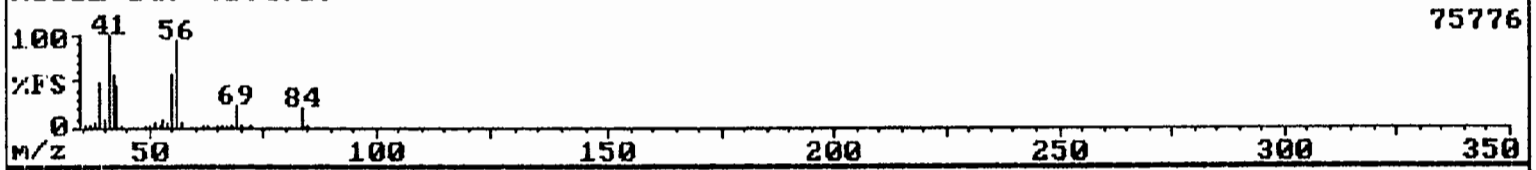
Sample: VOST-1 SET 2 TUBEA/B T/TC 173-46-2A/B TLI#42284 Instrument H



08-Jul-97 22:19 Triangle Laboratories of RTP, Inc. (919) 544-5729

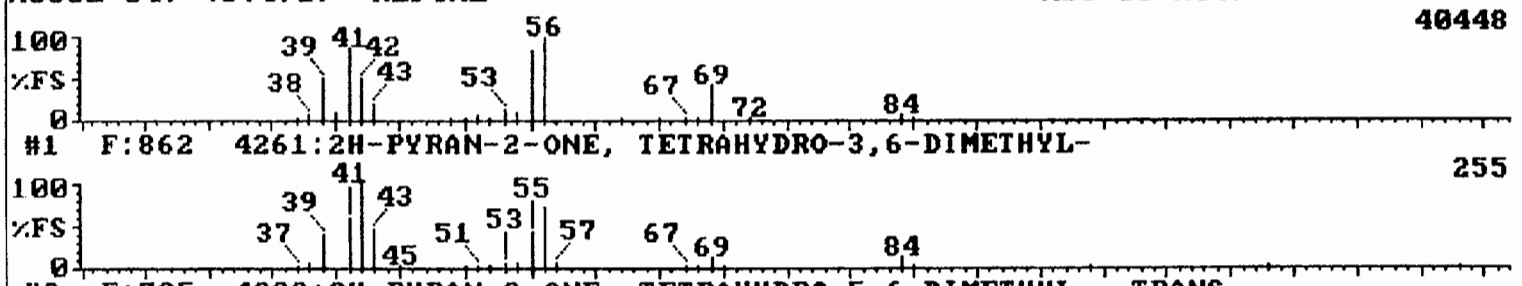
Sample: VOST-1 SET 2 TUBEA/B T/TC 173-46-2A/B TLI#42284 Instrument H

HS352 347 (3.470) 75776



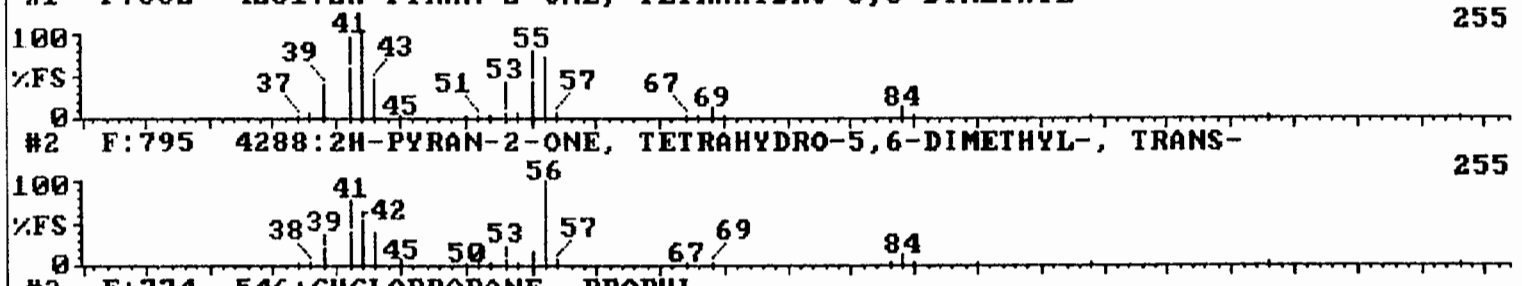
HS352'347 (3.471) REFINE NBS 33 Hits : 33 Searched

40448



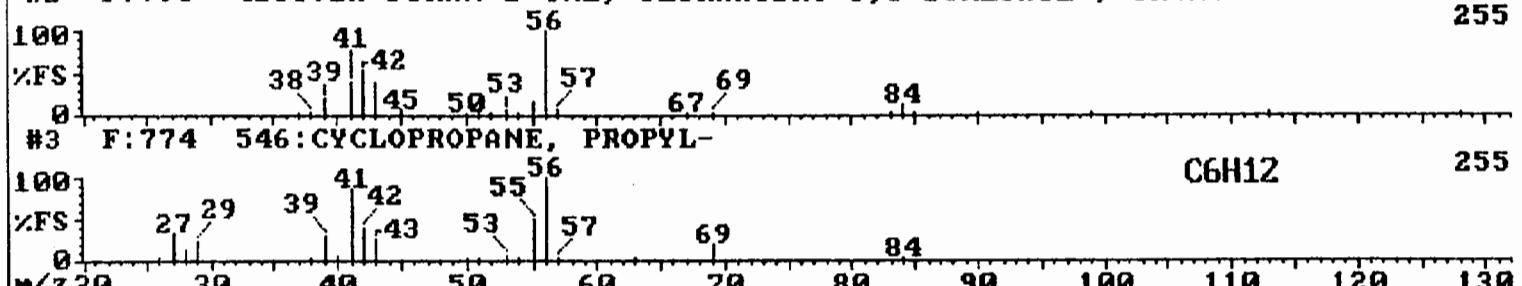
#1 F:862 4261:2H-PYRAN-2-ONE, TETRAHYDRO-3,6-DIMETHYL-

255



#2 F:795 4288:2H-PYRAN-2-ONE, TETRAHYDRO-5,6-DIMETHYL-, TRANS-

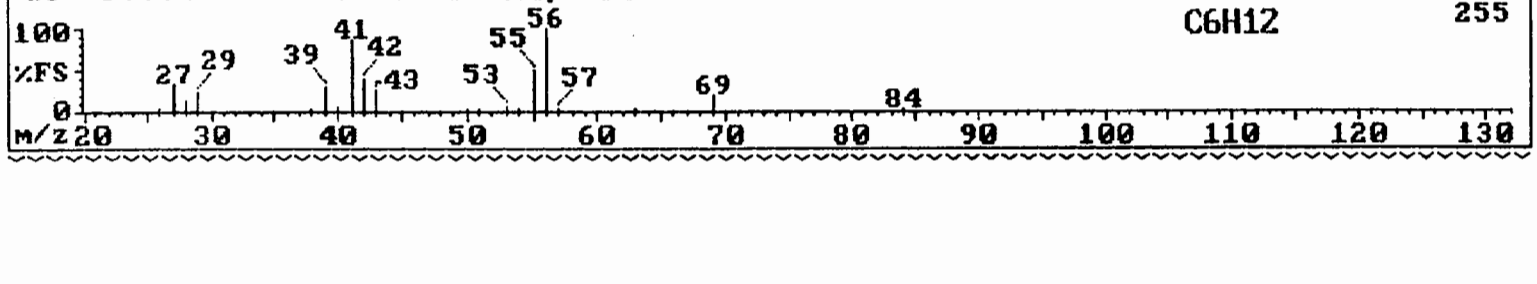
255



#3 F:774 546:CYCLOPROPANE, PROPYL-

C6H12

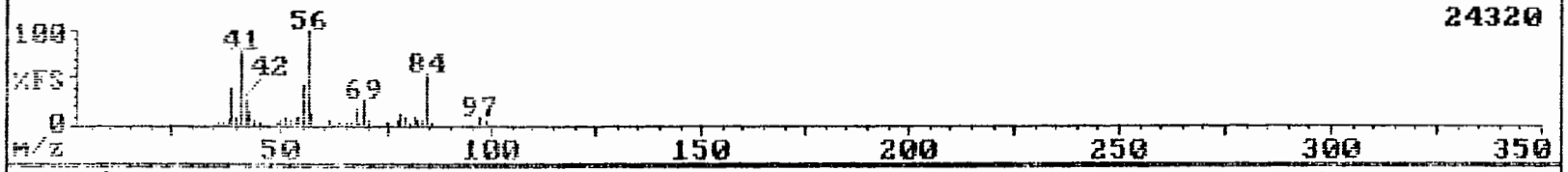
255



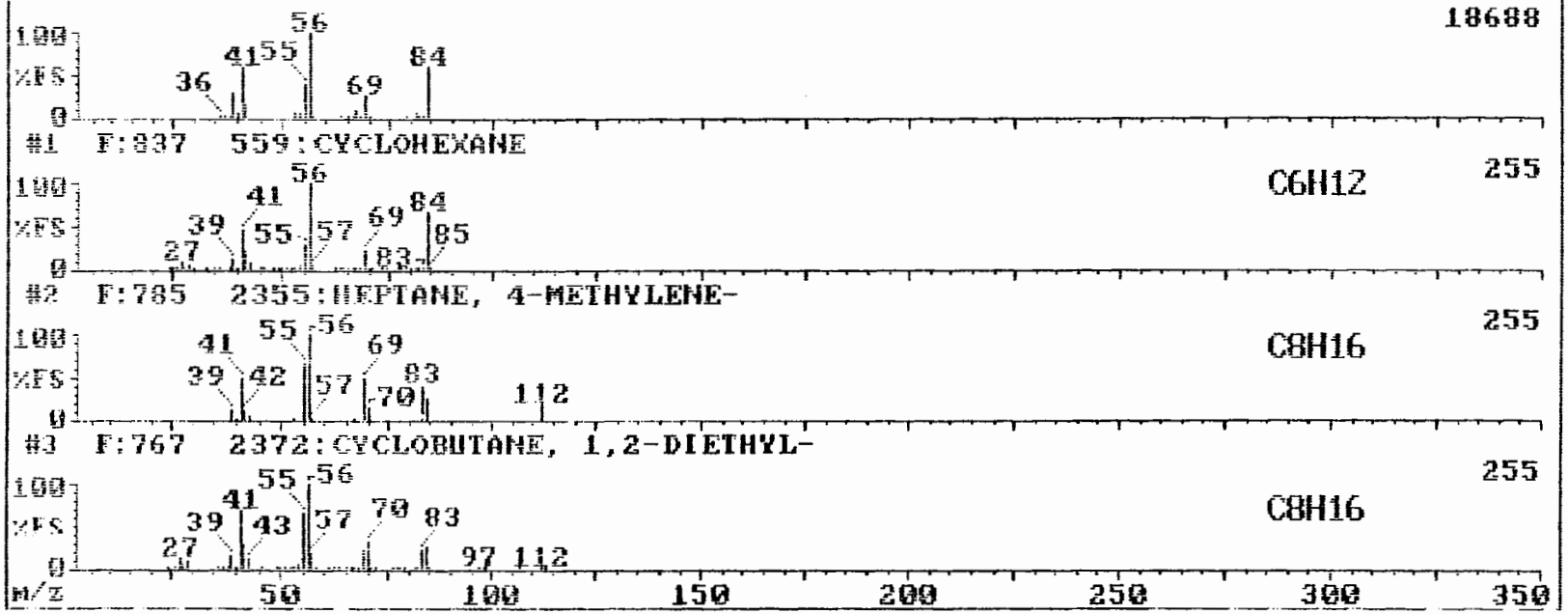
07/08/97 22:19 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 2 TUBEA/B T/TC 173-46-2A/B TLI#42284 Instrument: H

HS352 478 (4.781) NBS 24320



HS352'478 (4.781) REFINE NBS 123 Hits : 123 Searched 18688



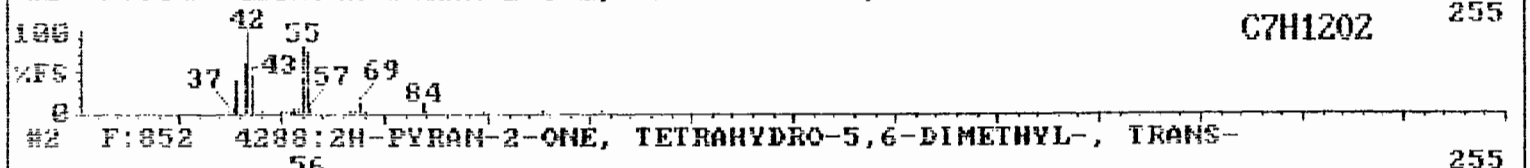
07/08/97 22:19 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 2 TUBEA/B T/TC 173-46-2A/B TLI#42284 Instrument: H

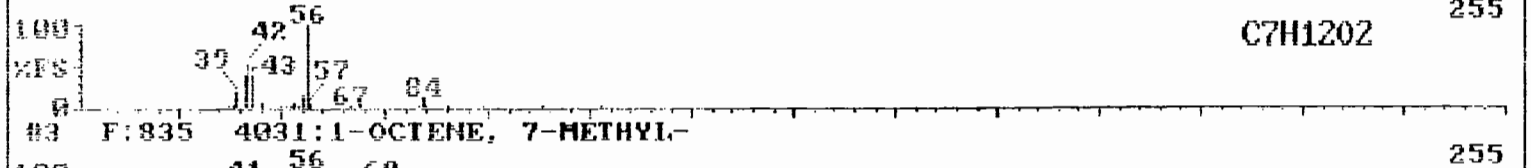
HS352 412 (4.120) NBS 36352

HS352'412 (4.121) REFINE NBS 66 Hits : 66 Searched 31488

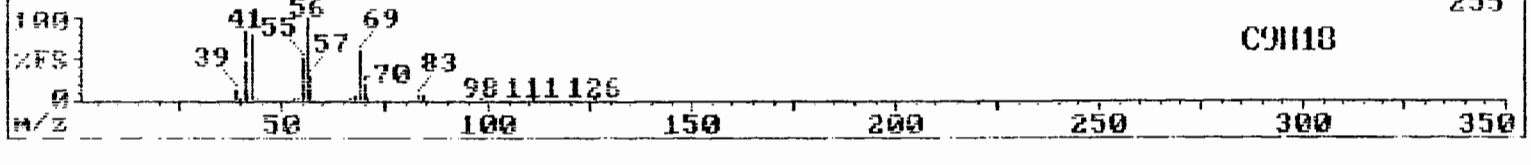
#1 F:854 4261:2H-PYRAN-2-ONE, TETRAHYDRO-3,6-DIMETHYL- C7H12O2 255



#2 F:852 4288:2H-PYRAN-2-ONE, TETRAHYDRO-5,6-DIMETHYL-, TRANS- C7H12O2 255



#3 F:835 4031:1-OCTENE, 7-METHYL- C9H18 255



Pacific Environmental Services

Project Number: 42284 | **Method 8240A VOST**
Sample File: HS353 | **Sample ID: VOST-1 SET 3 TUBEA/B T/TC**

Client Project: S407-003 | **Date Received: 06/30/97** | **Response File: ICALH708**
TLI ID: 173-46-3A,B
Date Analyzed : 07/08/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
Bromochloromethane		IS 1	4.50		
Chloromethane	0.120		0.93		0.05
Vinyl Chloride		U		0.001	0.05
1,3-Butadiene	0.134		1.09		0.05
Bromomethane	0.024	J	1.42		0.05
Chloroethane	0.003	J	1.54		0.05
Vinyl bromide		U		0.001	0.05
Trichlorofluoromethane	0.039	J	1.83		0.05
1,1-Dichloroethene		U		0.001	0.05
Iodomethane		U		0.001	0.05
Carbon disulfide	0.313		2.50		0.05
Acetone	0.082	B	2.57		0.05
Allyl chloride		U		0.001	0.05
Methylene chloride	0.359	B	2.97		0.05
trans-1,2-Dichloroethene		U		0.001	0.05
tert-Butyl methyl ether		U		0.001	0.05
Acrylonitrile		U		0.003	0.05
n-Hexane	0.178		3.56		0.05
1,1-Dichloroethane		U		0.001	0.05
1,2-Epoxybutane		U		0.003	0.05
cis-1,2-Dichloroethene		U		0.001	0.05
Chloroform		U		0.001	0.05
1,2-Dichloroethane		U		0.001	0.05
Isooctane	0.008	J	5.29		0.05
1,4-Difluorobenzene		IS 2	5.66		
Vinyl acetate		U		0.001	0.05

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

Triangle Laboratories of RTP, Inc.
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Phone: (919) 544-5729 • Fax: (919) 544-5491

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Pacific Environmental Services

Project Number: 42284 | Method 8240A VOST
Sample File: HS353 | Sample ID: VOST-1 SET 3 TUBEA/B T/TC

Client Project: S407-003 | Date Received: 06/30/97 | Response File: ICALH708
TLI ID: 173-46-3A,B
Date Analyzed : 07/08/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
2-Butanone	0.013	J	4.39		0.05
1,1,1-Trichloroethane		U		0.001	0.05
Carbon tetrachloride		U		0.001	0.05
Benzene	0.743	B	5.13		0.05
Trichloroethene		U		0.001	0.05
1,2-Dichloropropane		U		0.001	0.05
Erhyl acrylate		U		0.001	0.05
Methyl methacrylate	0.095		6.49		0.05
Bromodichloromethane		U		0.001	0.05
cis-1,3-Dichloropropene		U		0.001	0.05
trans-1,3-Dichloropropene		U		0.001	0.05
1,1,2-Trichloroethane		U		0.001	0.05
Dibromochloromethane		U		0.001	0.05
Ethylene dibromide		U		0.001	0.05
Bromoform		U		0.001	0.05
Chlorobenzene-d_5		IS 3	9.79		
4-Methyl-2-pentanone		U		0.001	0.05
Toluene	0.271	B	7.60		0.05
Tetrachloroethene		U		0.001	0.05
2-Hexanone		U		0.001	0.05
Chlorobenzene	0.004	J	9.84		0.05
Ethylbenzene	0.049	J	10.13		0.05
m-/p-Xylene	0.098	J	10.36		0.10
o-Xylene	0.037	J	11.06		0.05
Styrene	0.215		11.12		0.05
1,1,2,2-Tetrachloroethane		U		0.001	0.05

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

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Printed: 16:23 07/22/1997

Pacific Environmental Services

Project Number: 42284 | **Method 8240A VOST**
Sample File: HS353 | **Sample ID: VOST-1 SET 3 TUBEA/B T/TC**

Client Project: S407-003 | **Date Received: 06/30/97** | **Response File: ICALH708**
TLI ID: 173-46-3A,B
Date Analyzed : 07/08/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
Cumene	0.005	J	11.84		0.05

Surrogate Summary	Amount (ug)	RT	IS Ref	%REC
1,2-Dichloroethane-d_4	0.268	5.11	1	107
Benzene-d_6	0.290	5.09	2	116
Toluene-d_8	0.291	7.51	3	116

Reviewed by TW Date 7/22/97

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

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Printed: 16:23 07/22/1997

Pacific Environmental Services

Project Number:	42284	Method 8240A	
Sample File:	HS353	Sample ID:	VOST-1 SET 3 TUBEA/B T/TC

Client Project:	S407-003	Date Received:	06/30/97
TLI ID:	173-46-3A,B	Date Analyzed:	07/08/97
	Dilution Factor:	1.00	

Tentatively Identified Compounds

Name	RT	Area	IS RT	IS Area	Amount, ug
Unknown	0.72	29196276	4.511	4752864	1.536
C4H8 Isomer	1.02	8162963	4.511	4752864	0.429
Hexamethylcyclotrisiloxane	8.691	19628418	9.791	11518189	0.426
Methylbutane Isomer	1.630	7398669	4.511	4752864	0.389
C5H8 Isomer	2.200	6169843	4.511	4752864	0.325
Pentane	1.940	5718449	4.511	4752864	0.301
Methyl Propane Isomer	0.86	4553779	4.511	4752864	0.240
C6H12 Isomer	3.47	3123308	4.511	4752864	0.164
Tetrahydrodimethyl Pyranone Isomer	4.120	3086243	4.511	4752864	0.162
C8H16 Isomer	7.821	4978136	9.791	11518189	0.108

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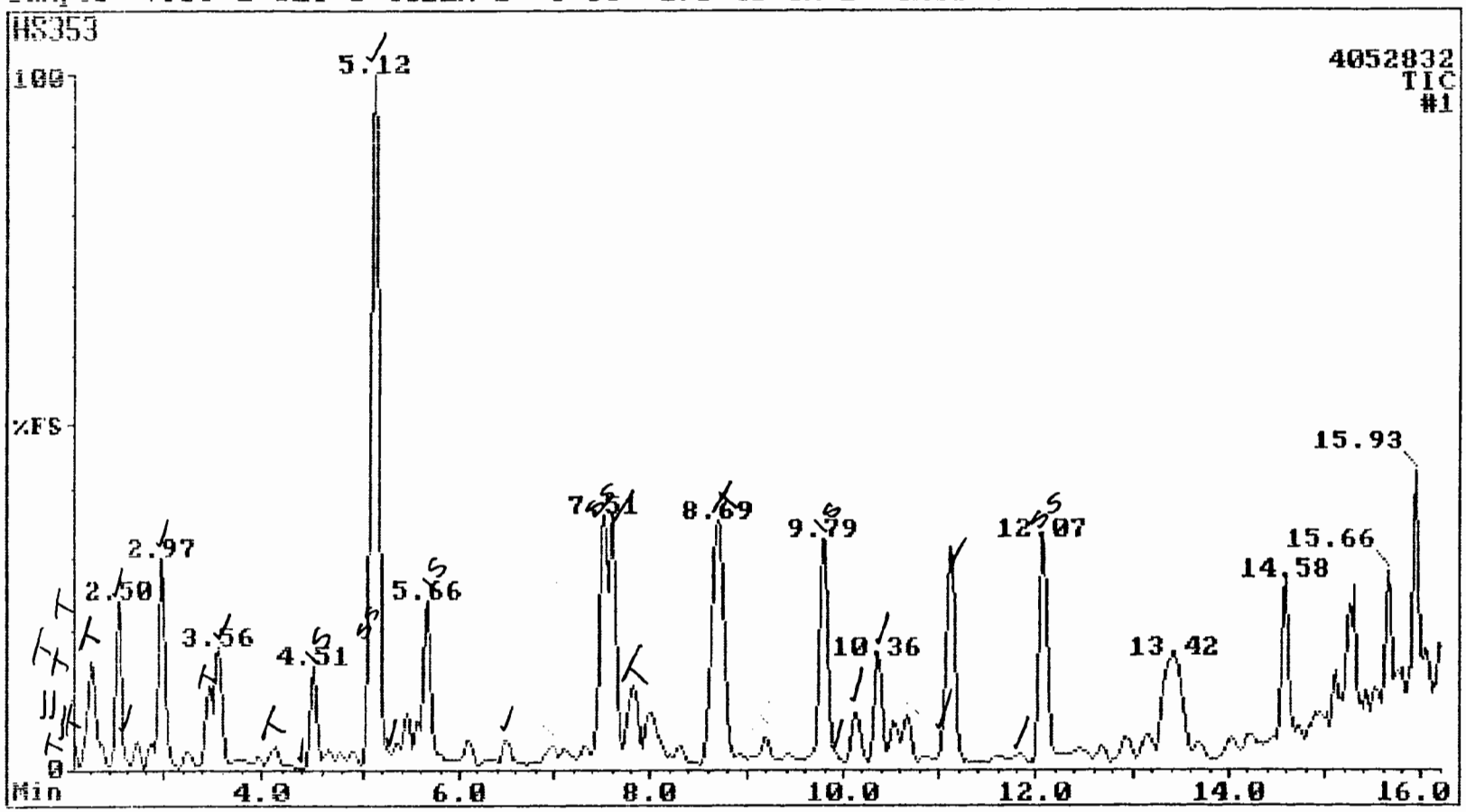
07-08-97 22:43 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 3 TUBEA/B T/TC 173-46-3A/B TLI#42284 Instrument H



Data Review: TW
Date: 7-20-97

QUAN DB : HS353 LAB-BASE QUAN 07-08-97 23:16

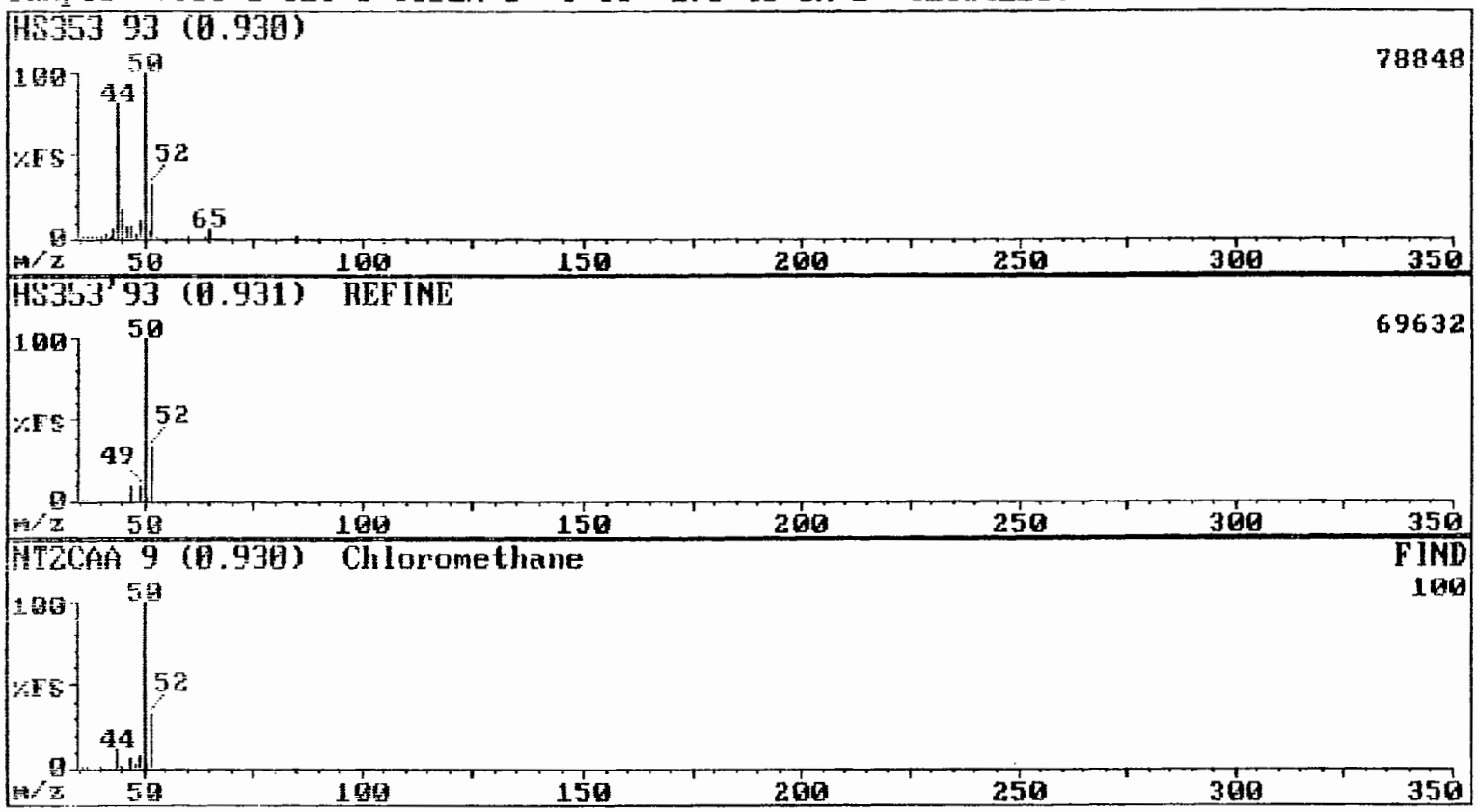
No.	MAT	FOR	REV	Delta	Area	P.Flags	RT	QM	Name
1	100	92	99	-1	398632	bb	4.50	128	Bromochloromethane
2	100	92	97	1	2438752	bv	5.66	114	1,4-Difluorobenzene
3	100	96	98	-1	3018852	bv	9.79	117	Chlorobenzene-d5
4	58	23	71	2	1148376	bv	5.11	65	1,2-Dichloroethane-d4
5	100	85	87	0	3275384	bv	5.09	84	Benzene-d6
6	100	90	99	1	3989156	bv	7.51	98	Toluene-d8
~~7~~	~~26~~	~~10~~	~~34~~	~~-13~~	~~19566~~	~~A~~	~~12.41~~	98	o-Xylene-d10
8	100	87	94	1	1950942	vv	12.07	95	4-Bromofluorobenzene
9	100	78	85	0	401472	vv	0.93	50	Chloromethane
10	0	0	0	0	0		0.00	62	Vinyl Chloride
11	~~100~~	~~75~~	~~103~~	~~-1~~	~~1561556~~	~~A~~ 563468	~~1.02~~ 1.09	39	1,3-Butadiene
12	96	58	96	0	84332	bb	1.42	94	Bromomethane
13	0	0	0	0	~~0~~ 6060		~~0.00~~ 1.54	64	Chloroethane
14	0	0	0	0	0		0.00	106	Vinyl bromide
15	85	48	93	-1	176676	bb	1.83	101	Trichlorofluoromethane
16	0	0	0	0	0		0.00	96	1,1-Dichloroethene
17	0	0	0	0	0		0.00	142	Iodomethane
18	100	82	99	1	3150996	bv	2.50	76	Carbon disulfide
19	88	62	83	1	171242	bv	2.57	43	Acetone
20	0	0	0	0	0		0.00	76	Allyl chloride
21	100	81	95	1	1127460	bb	2.97	84	Methylene chloride
22	0	0	0	0	0		0.00	96	trans-1,2-Dichloroethene
~~23~~	~~49~~	~~38~~	~~45~~	~~4~~	~~1372~~	~~bb~~	~~3.34~~	73	tert-Butyl methyl ether
~~24~~	~~28~~	~~9~~	~~36~~	~~0~~	~~13842~~	~~bv~~	~~3.26~~	53	Acrylonitrile
25	100	98	100	0	1326803	vv	3.56	57	n-Hexane
26	0	0	0	0	0		0.00	63	1,1-Dichloroethane
~~27~~	~~56~~	~~46~~	~~57~~	~~8~~	~~74873~~	~~bv~~	~~4.12~~	42	1,2-Epoxybutane
28	0	0	0	0	0		0.00	96	cis-1,2-Dichloroethene
29	0	0	0	0	0		0.00	83	Chloroform
30	0	0	0	0	0		0.00	62	1,2-Dichloroethane
31	87	56	86	1	196458	bv	5.29	57	Isooctane
~~32~~	~~33~~	~~31~~	~~62~~	~~-28~~	~~1219636~~	~~vv~~	~~3.56~~	43	Vinyl acetate
33	93	74	77	1	4980	A	4.39	72	2-Butanone
34	0	0	0	0	0		0.00	97	1,1,1-Trichloroethane
35	0	0	0	0	0		0.00	117	Carbon tetrachloride
36	100	89	99	0	9177609	bv	5.13	78	Benzene
37	0	0	0	0	0		0.00	130	Trichloroethene
~~38~~	~~31~~	~~12~~	~~38~~	~~1~~	~~516~~	~~bb~~	~~6.13~~	63	1,2-Dichloropropane
~~39~~	~~44~~	~~26~~	~~50~~	~~3~~	~~25568~~	~~A~~	~~6.24~~	55	Ethyl acrylate
40	100	93	98	0	223315	vb	6.49	69	Methyl methacrylate
41	0	0	0	0	0		0.00	83	Bromodichloromethane
42	0	0	0	0	0		0.00	75	cis-1,3-Dichloropropene
43	0	0	0	0	0		0.00	75	trans-1,3-Dichloropropen
44	0	0	0	0	0		0.00	97	1,1,2-Trichloroethane
45	0	0	0	0	0		0.00	129	Dibromochloromethane
46	0	0	0	0	0		0.00	107	Ethylene dibromide
47	0	0	0	0	0		0.00	173	Bromoform
~~48~~	~~53~~	~~5~~	~~84~~	~~2~~	~~64080~~	~~A~~	~~7.51~~	43	4-Methyl-2-pentanone
49	100	94	99	1	2422408	bv	7.60	92	Toluene
50	0	0	0	0	0		0.00	164	Tetrachloroethene

Data Review: TW
Date: 7-20-97

No.	MAT	FOR	REV	Delta	Area	P.Flags	RT	QM	Name
~~51~~	~~40~~	~~17~~	~~61~~	~~8~~	~~64335~~	~~bv~~	~~8.73~~	43	2-Hexanone
52	49	17	65	1	45304	bb	9.34	112	Chlorobenzene
53	100	87	98	1	304700	bv	10.13	106	Ethylbenzene
54	100	86	94	0	755472	vv	10.36	106	m-/p-Xylene
55	99	78	85	0	274128	bv	11.06	106	o-Xylene
56	100	94	98	1	2613276	bv	11.12	104	Styrene
~~57~~	~~22~~	~~4~~	~~39~~	~~7~~	~~3380~~	~~A~~	~~12.48~~	83	1,1,2,2-Tetrachloroethan
58	73	42	77	0	133563	bv	11.84	105	Cumene

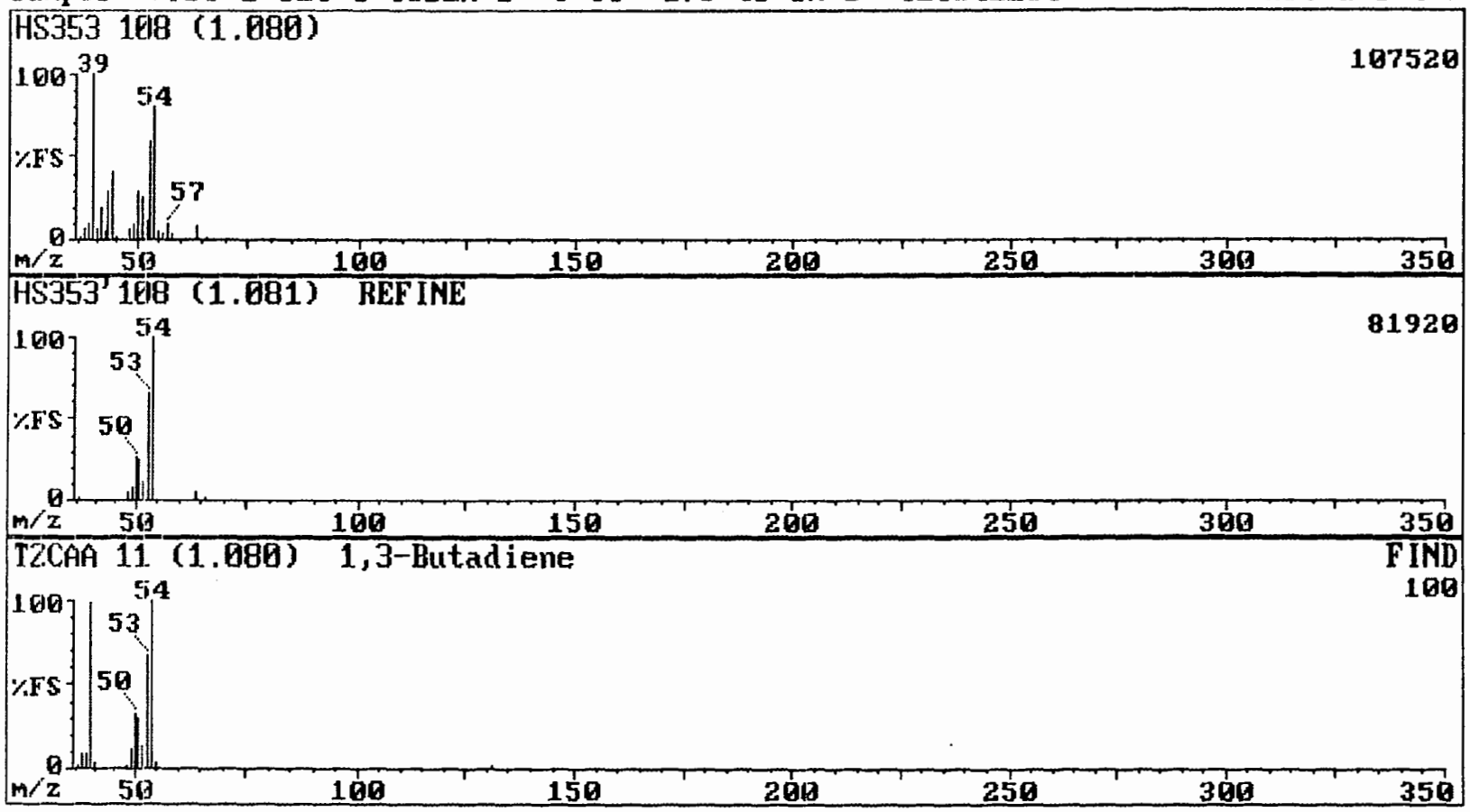
07-08-97 22:43 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 3 TUBEA/B T/TC 173-46-3A/B TLI#42284 Instrument H



08-Jul-97 22:43 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 3 TUBEA/B T/TC 173-46-3A/B TLI#42284 Instrument H



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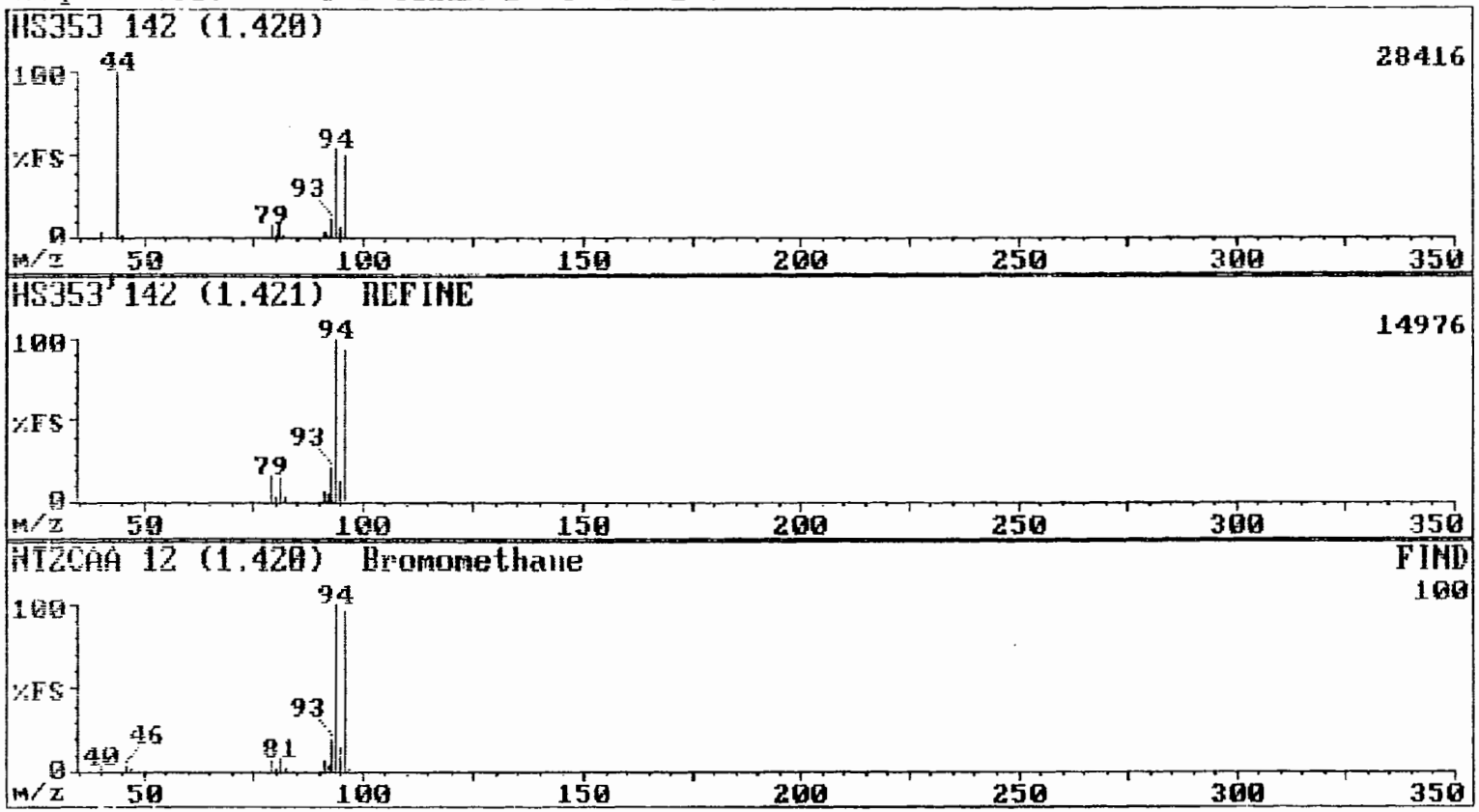
Sample: VOST-1 SET 3 TUBEA/B T/TC 173-46-3A/B TLI#42284 Instrument H



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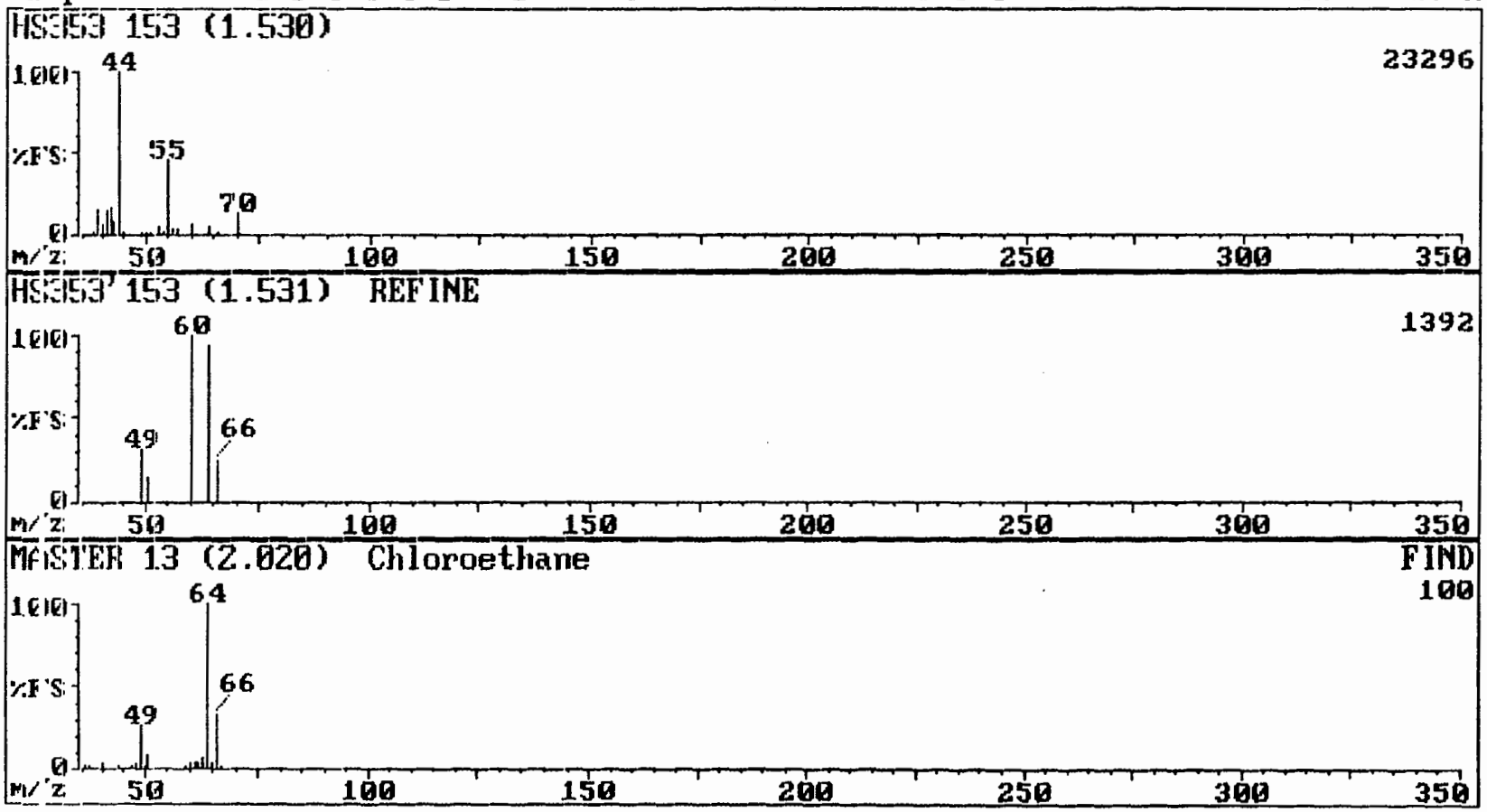
Sample: VOST-1 SET 3 TUBEA/B T/TC 173-46-3A/B TLI#42284 Instrument H



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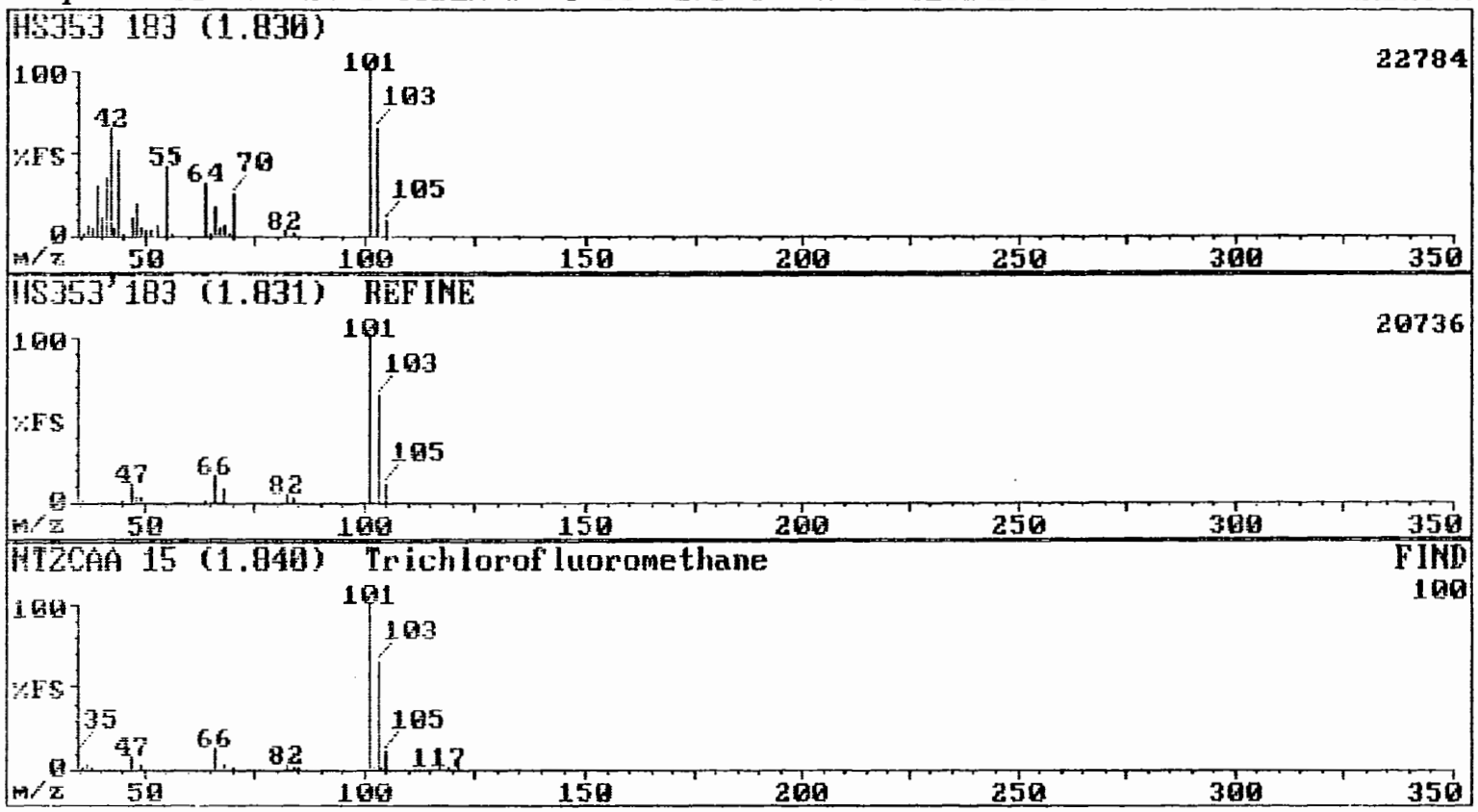
Sample: VOST-1 SET 3 TUBEA/B T/TC 173-46-3A/B TLI#42284 Instrument H



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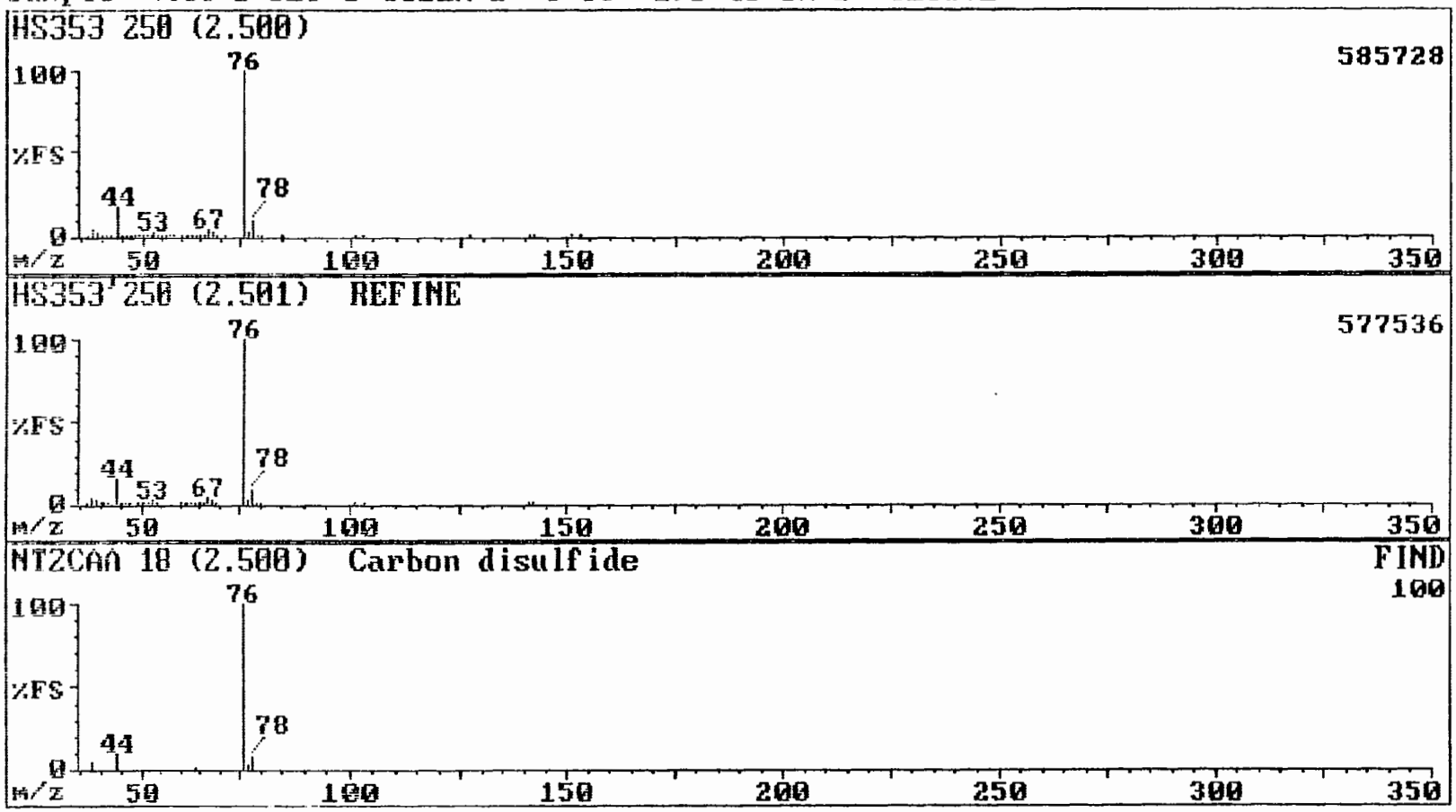

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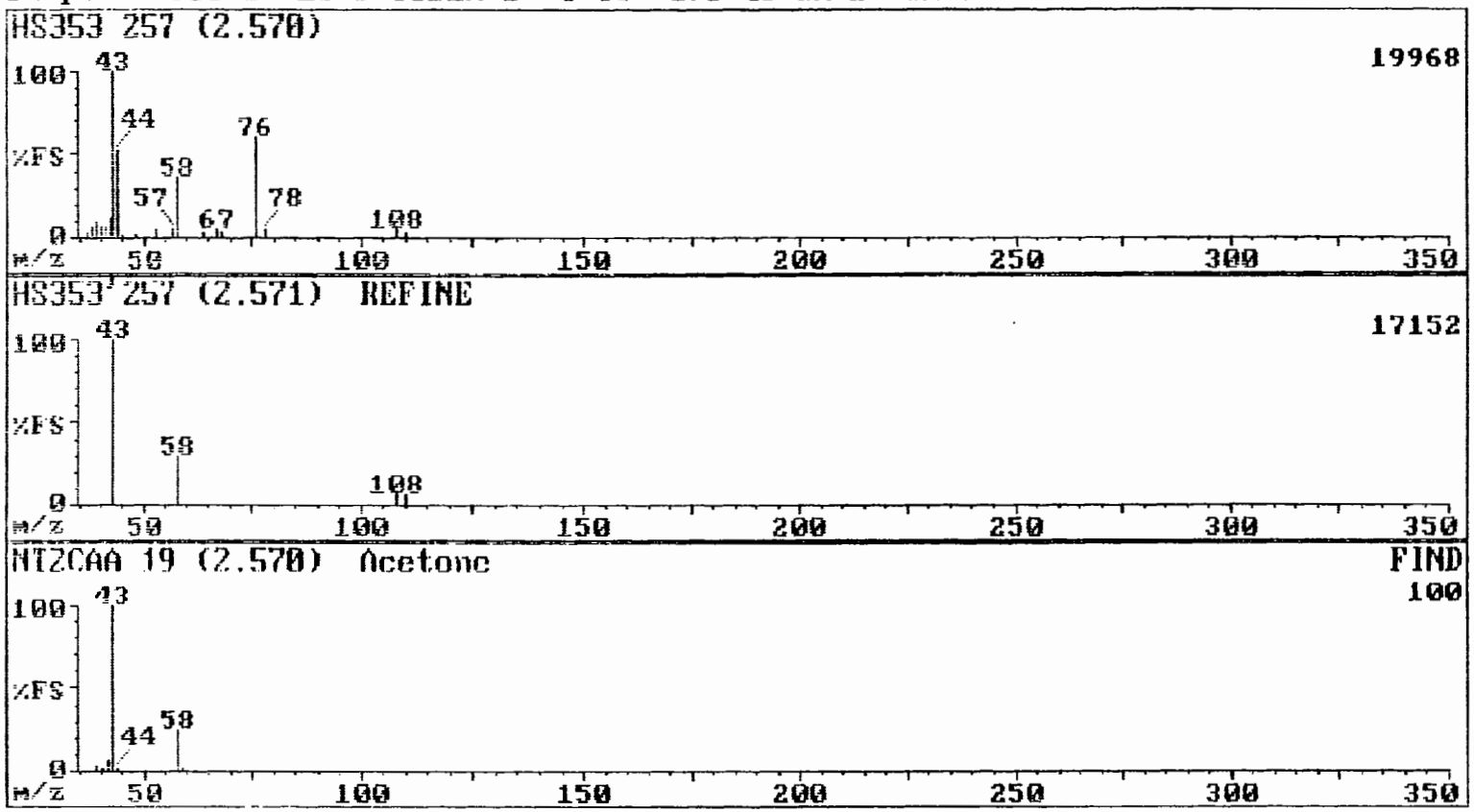

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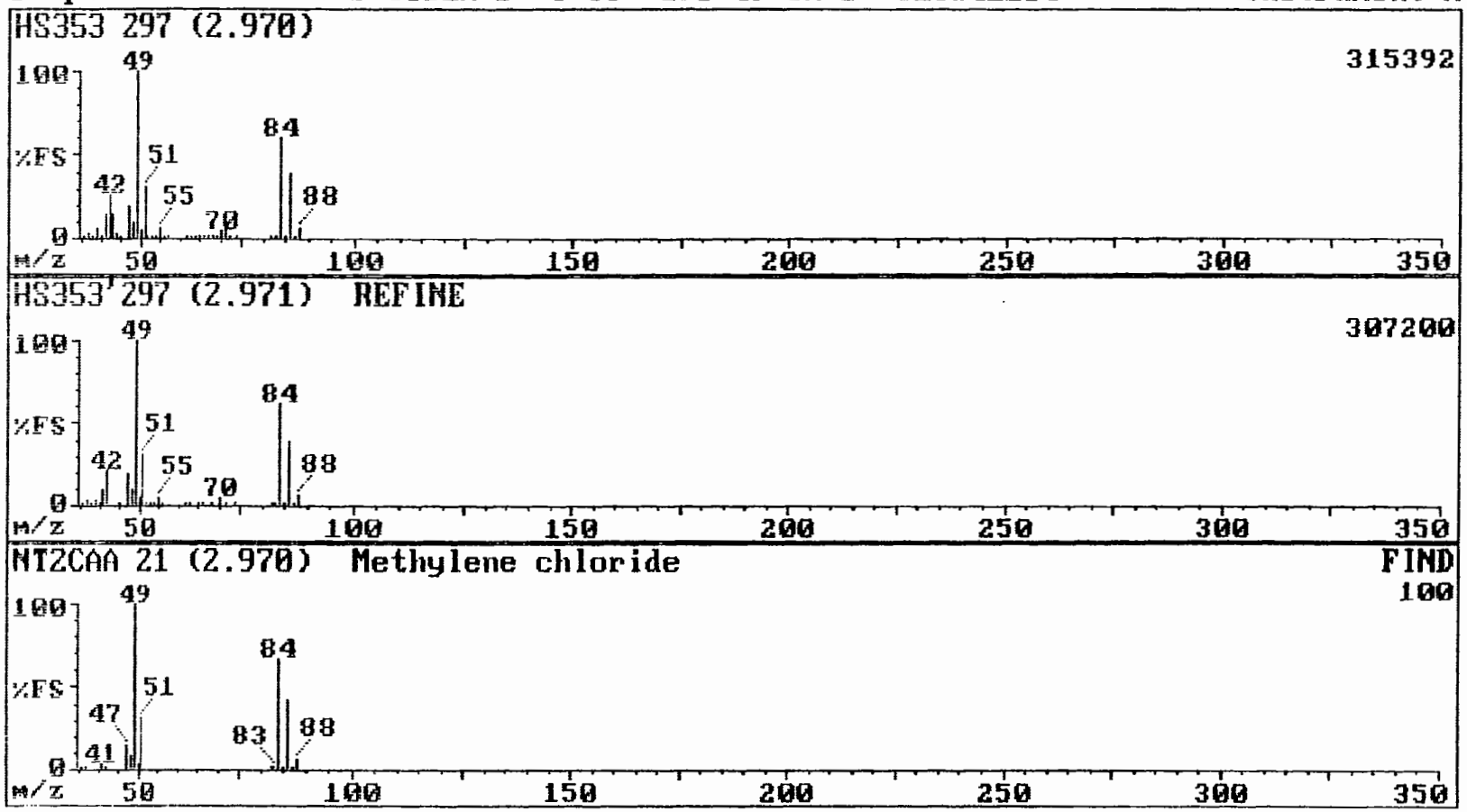
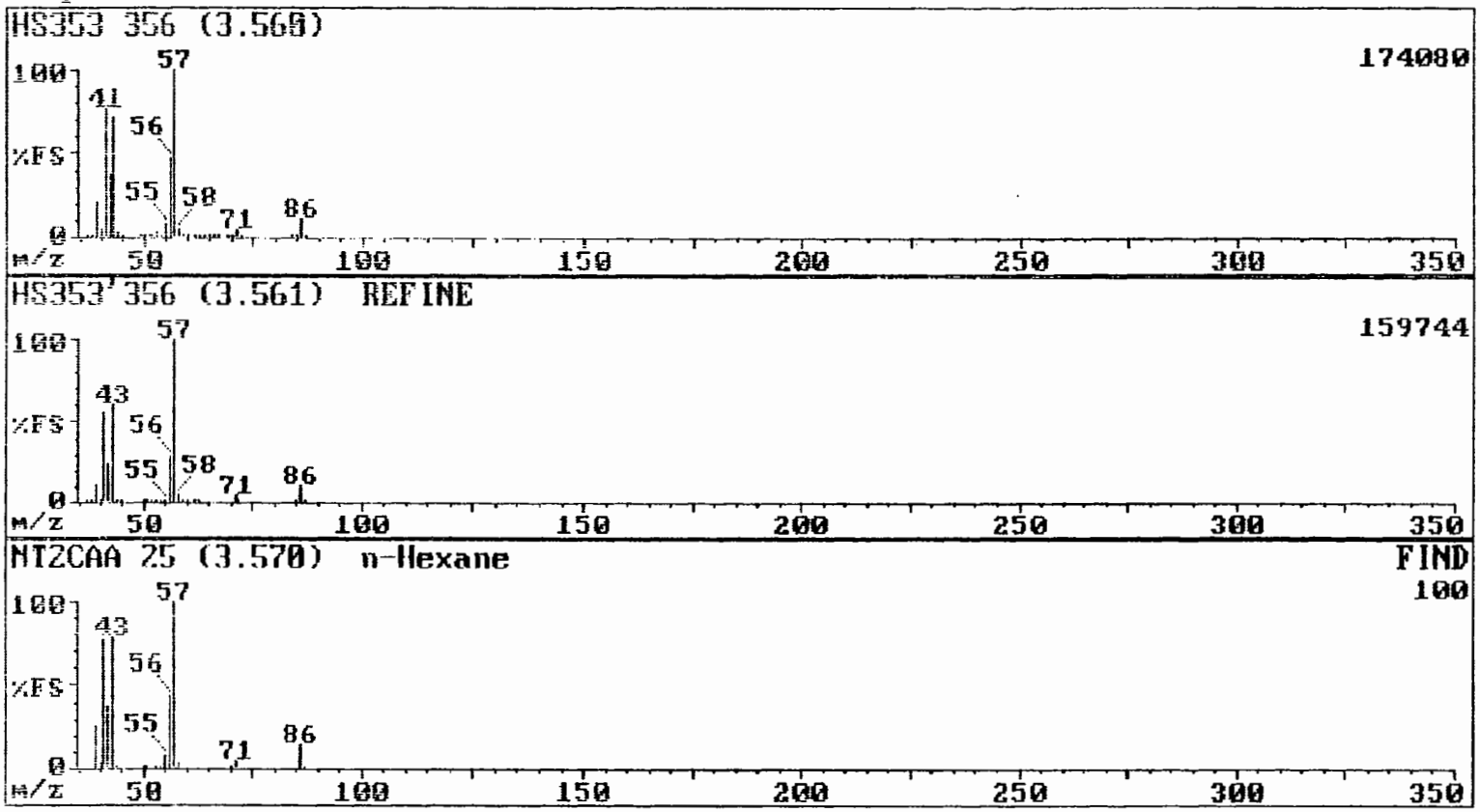
Sample: VOST-1 SET 3 TUBEA/B T/TC 173-46-3A/B TLI#42284 Instrument H



07 08 97 22:43 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 3 TUBEA/B T/TC 173-46-3A/B TLI#42284 Instrument H



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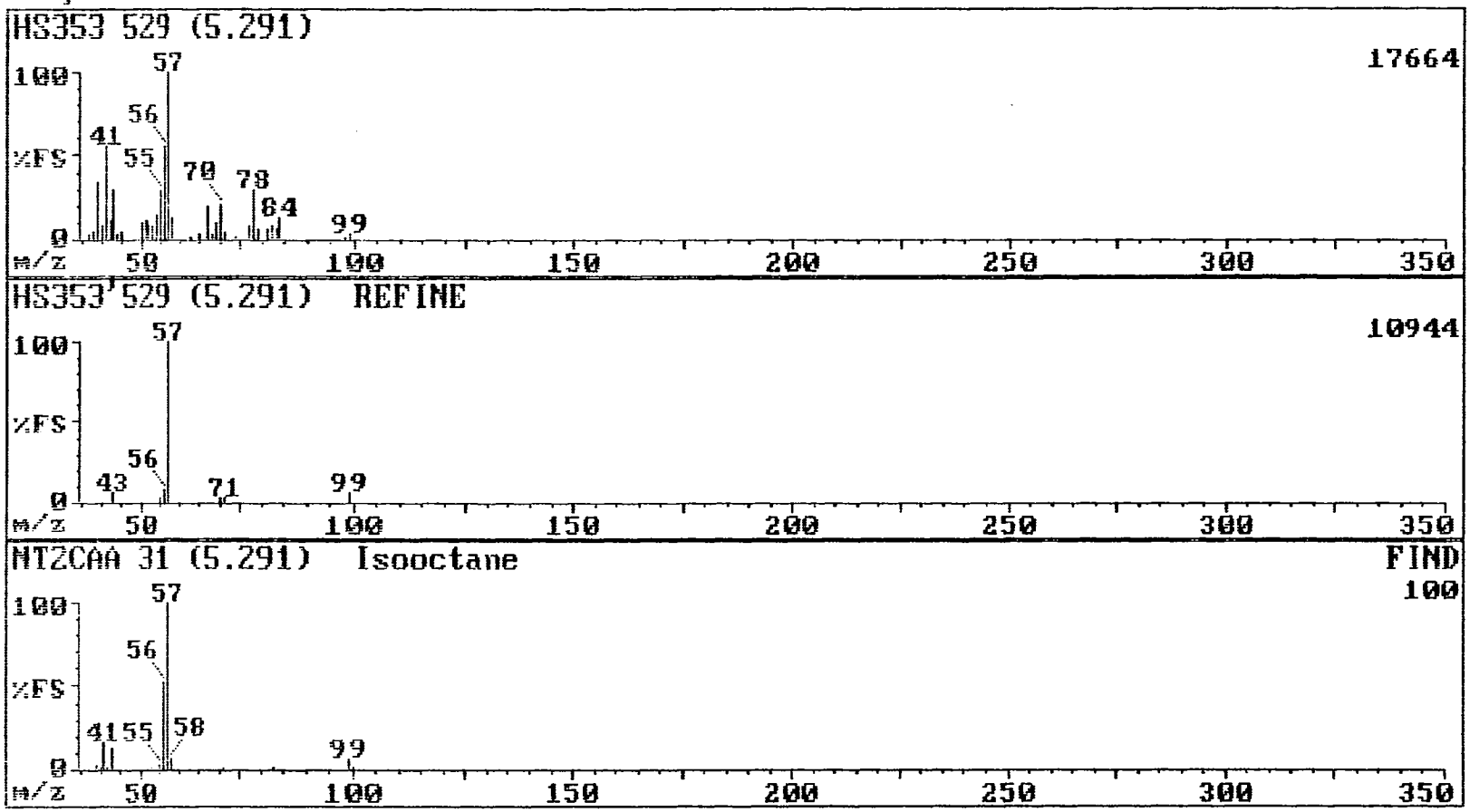
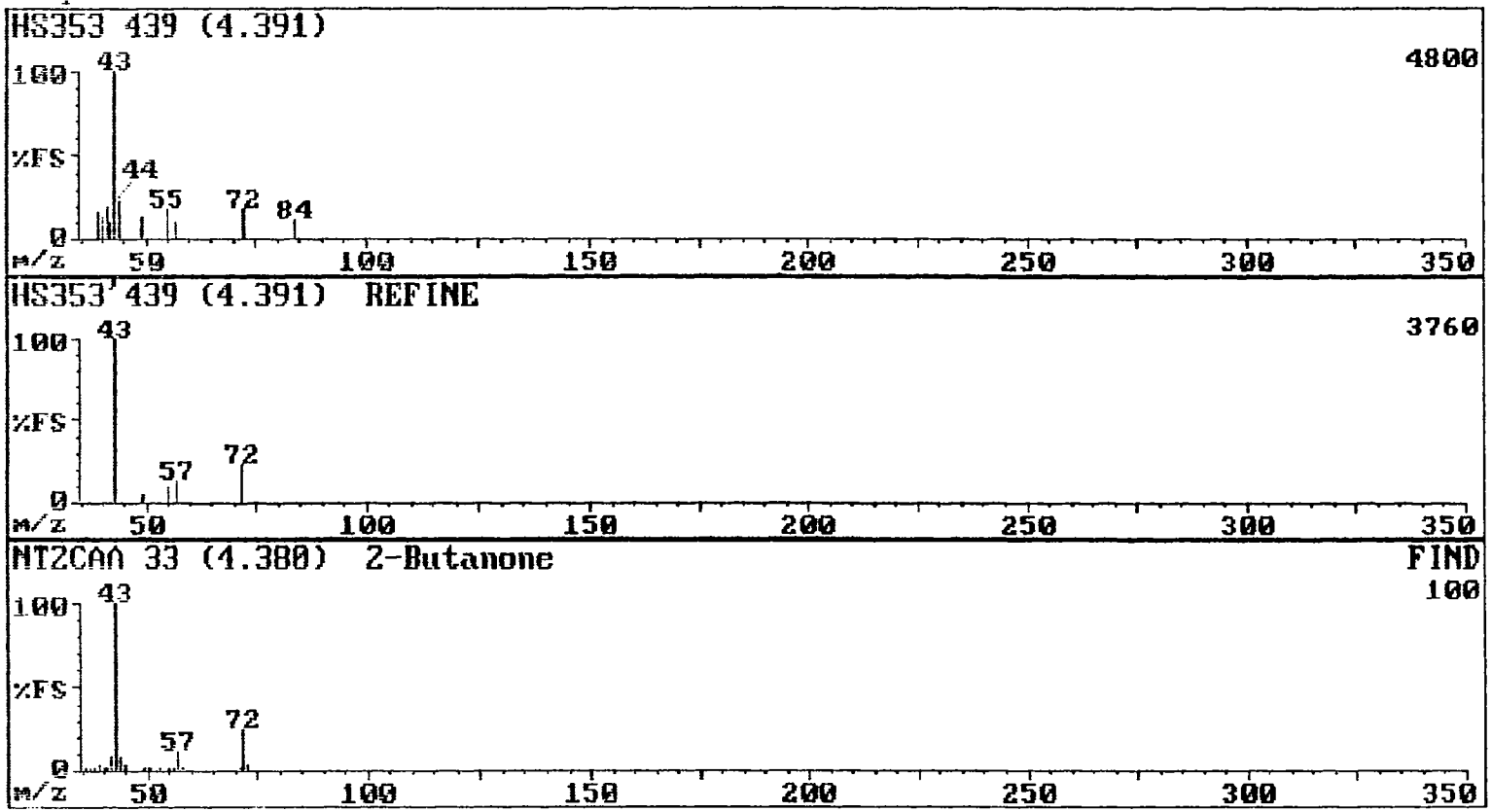
Sample: VOST-1 SET 3 TUBEA/B T/TC 173-46-3A/B TLI#42284 Instrument H



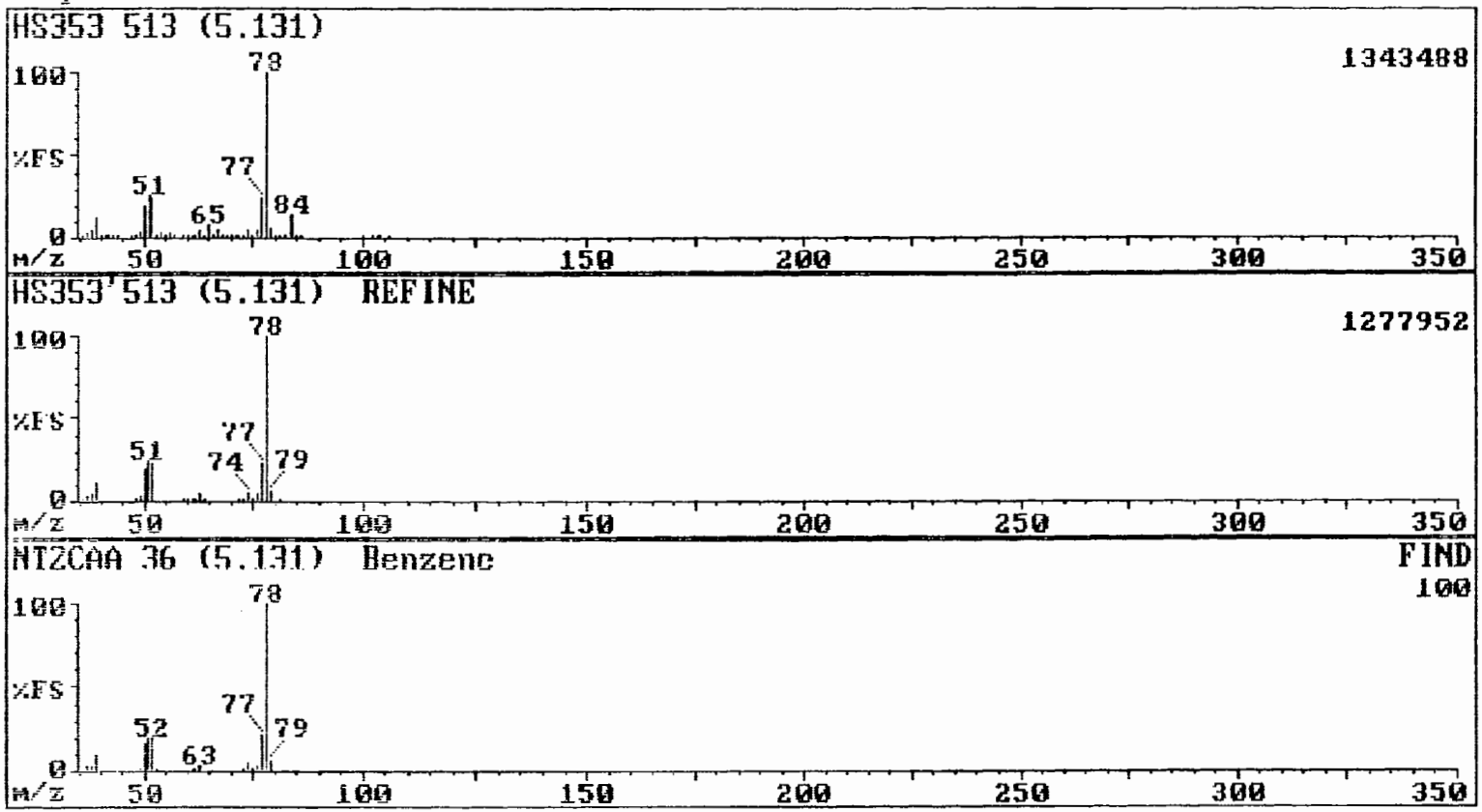
07-08-97 22:43 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 3 TUBEA/B T/TC 173-46-3A/B TLI#42284 Instrument H



07-08-97 22:43 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 3 TUBEA/B T/TC 173-46-3A/B TLI#42284 Instrument H



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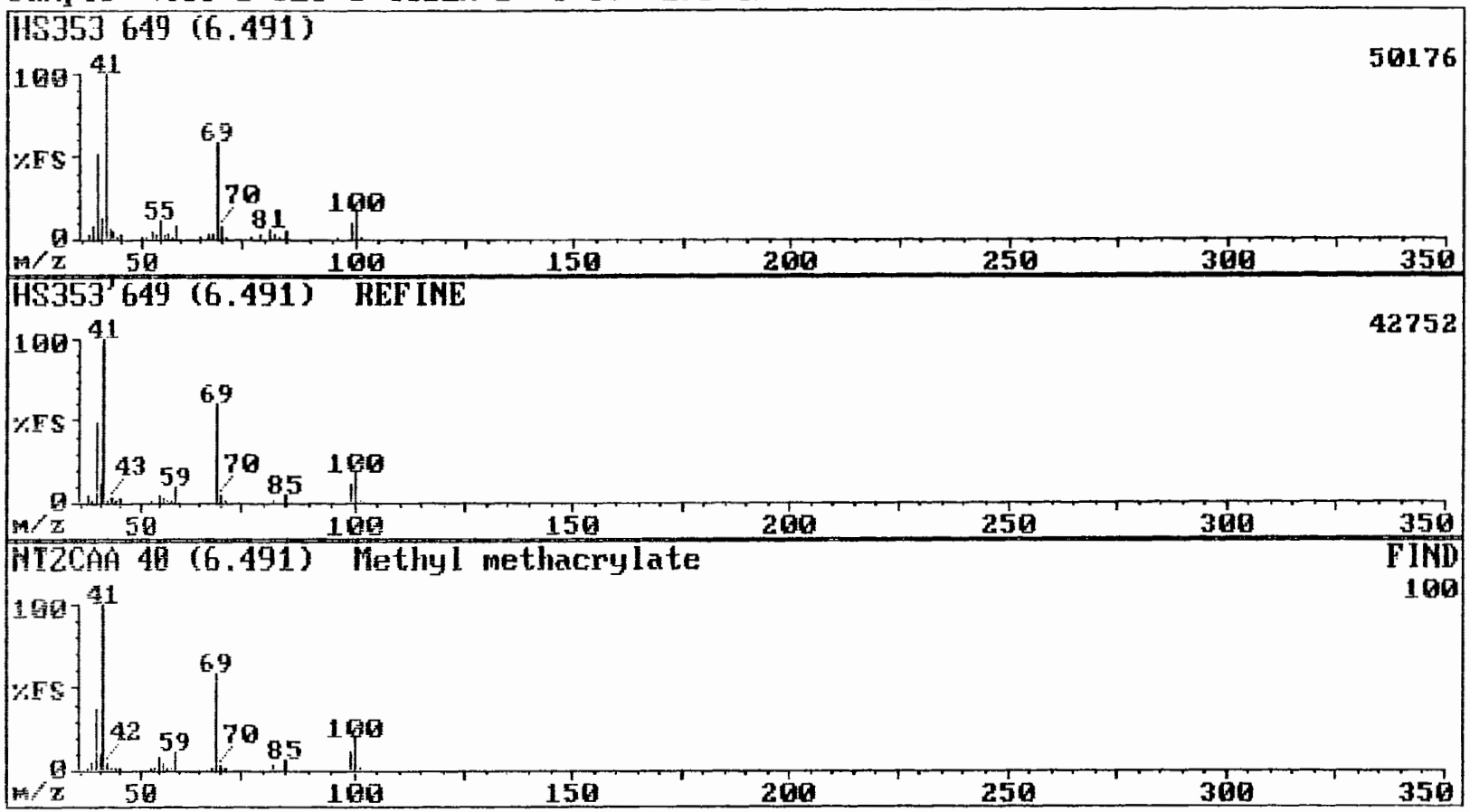
Sample: VOST-1 SET 3 TUBEA/B T/TC 173-46-3A/B TLI#42284 Instrument H



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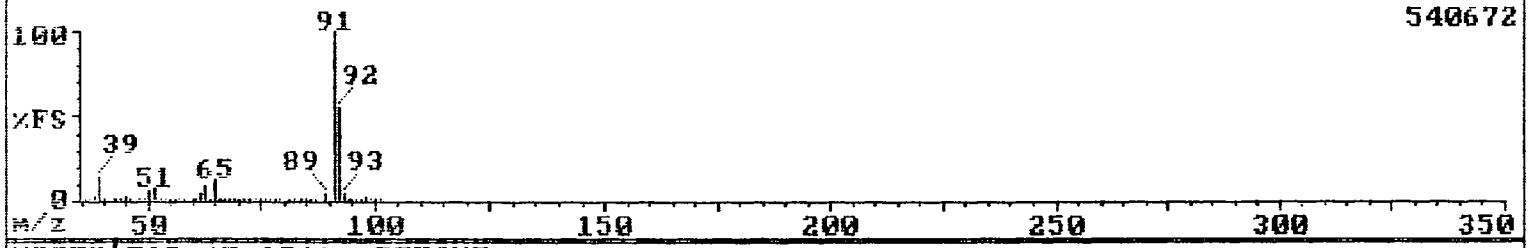
Sample: VOST-1 SET 3 TUBEA/B T/TC 173-46-3A/B TLI#42284 Instrument H

HS353 760 (7.601) 540672



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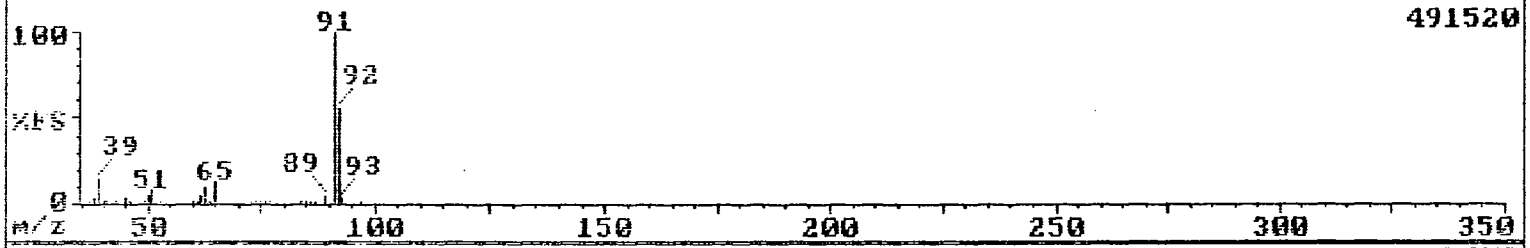
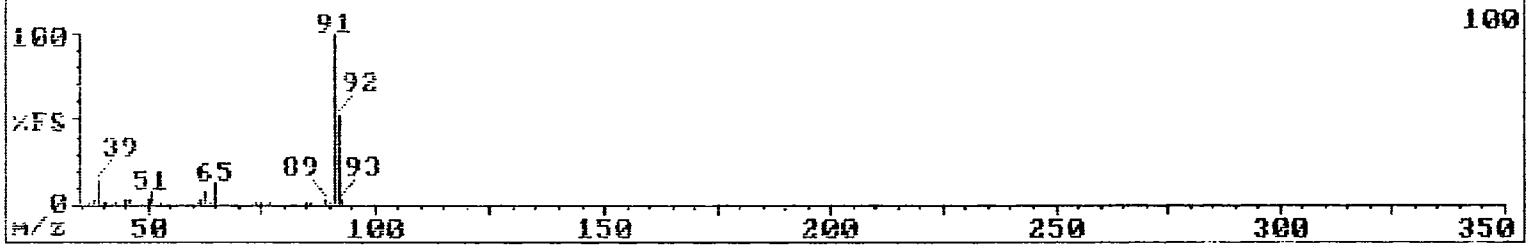


NT2CAA 49 (7.601) Toluene FIND 100



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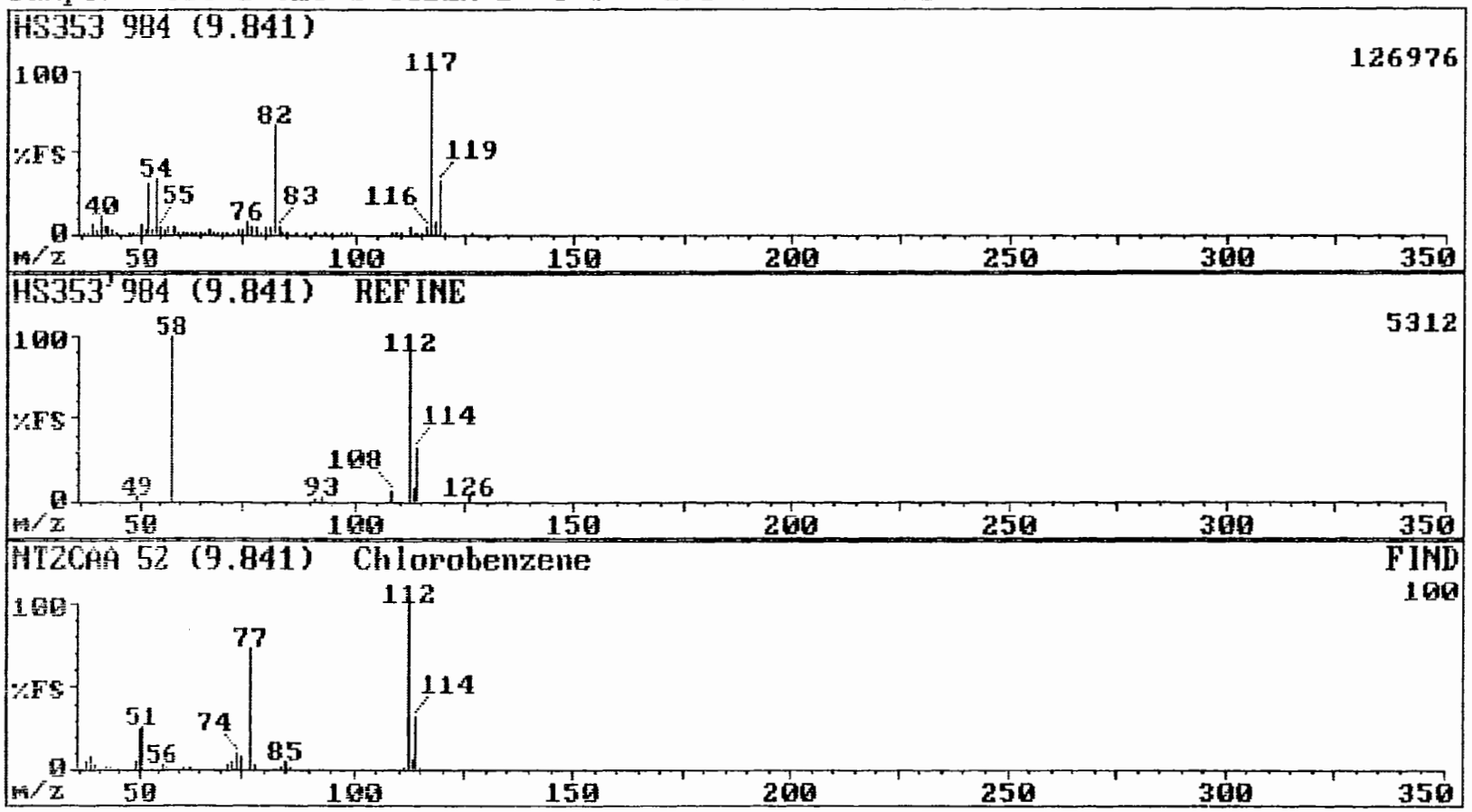
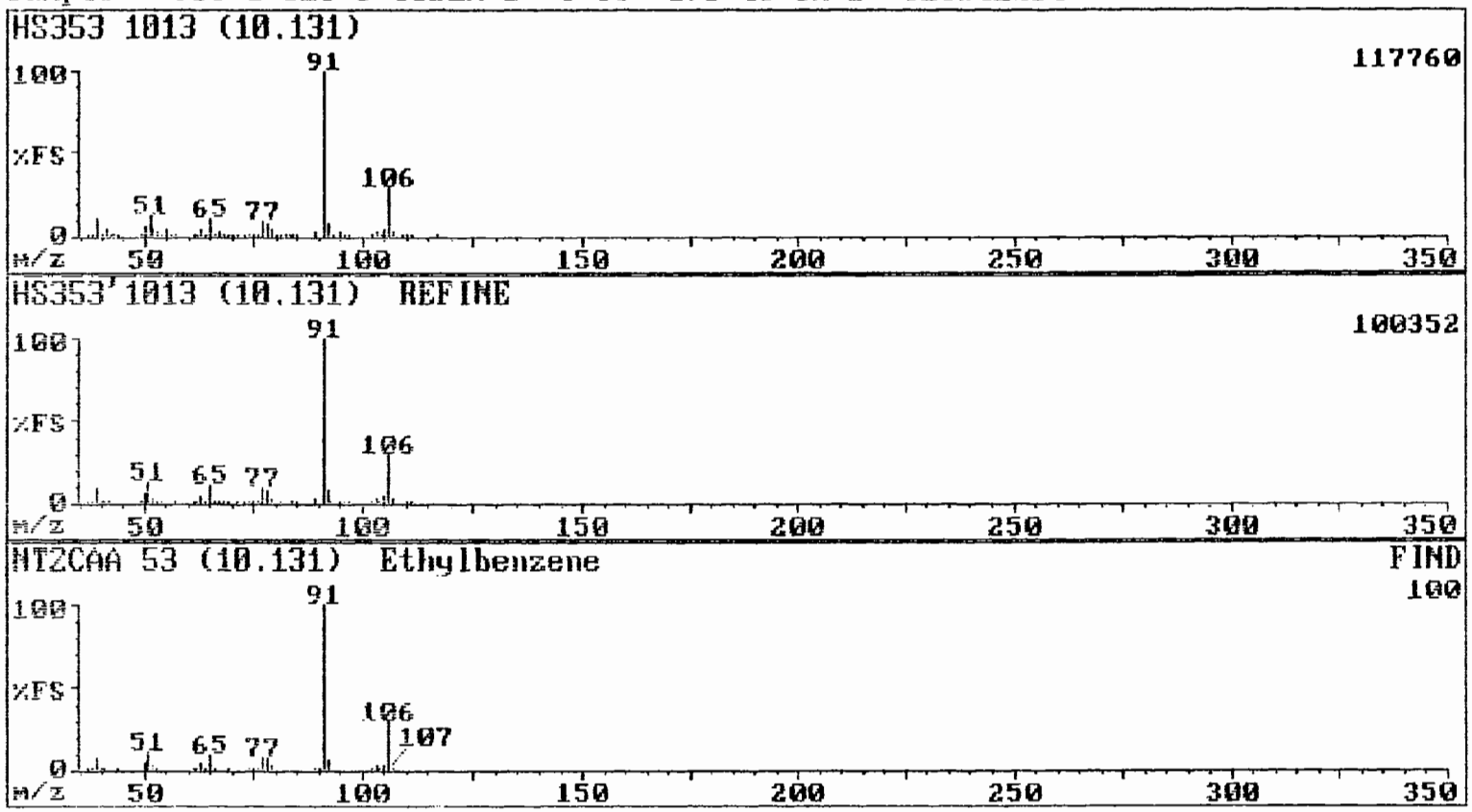
Sample: VOST-1 SET 3 TUBEA/B T/TC 173-46-3A/B TLI#42284 Instrument H



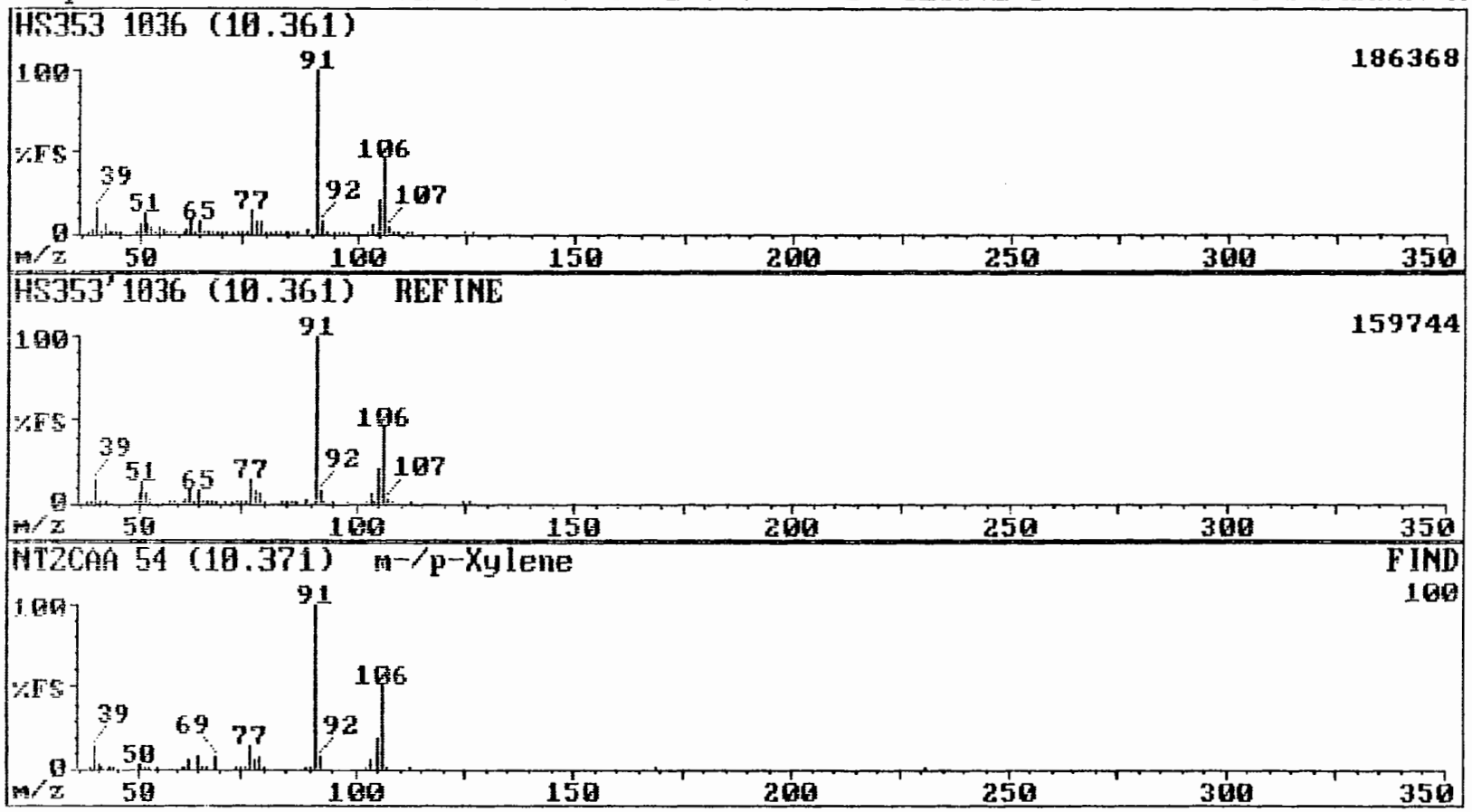
07-08-97 22:43 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 3 TUBEA/B T/TC 173-46-3A/B TLI#42284 Instrument H



07-08-97 22:43 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 3 TUBEA/B T/TC 173-46-3A/B TLI#42284 Instrument H



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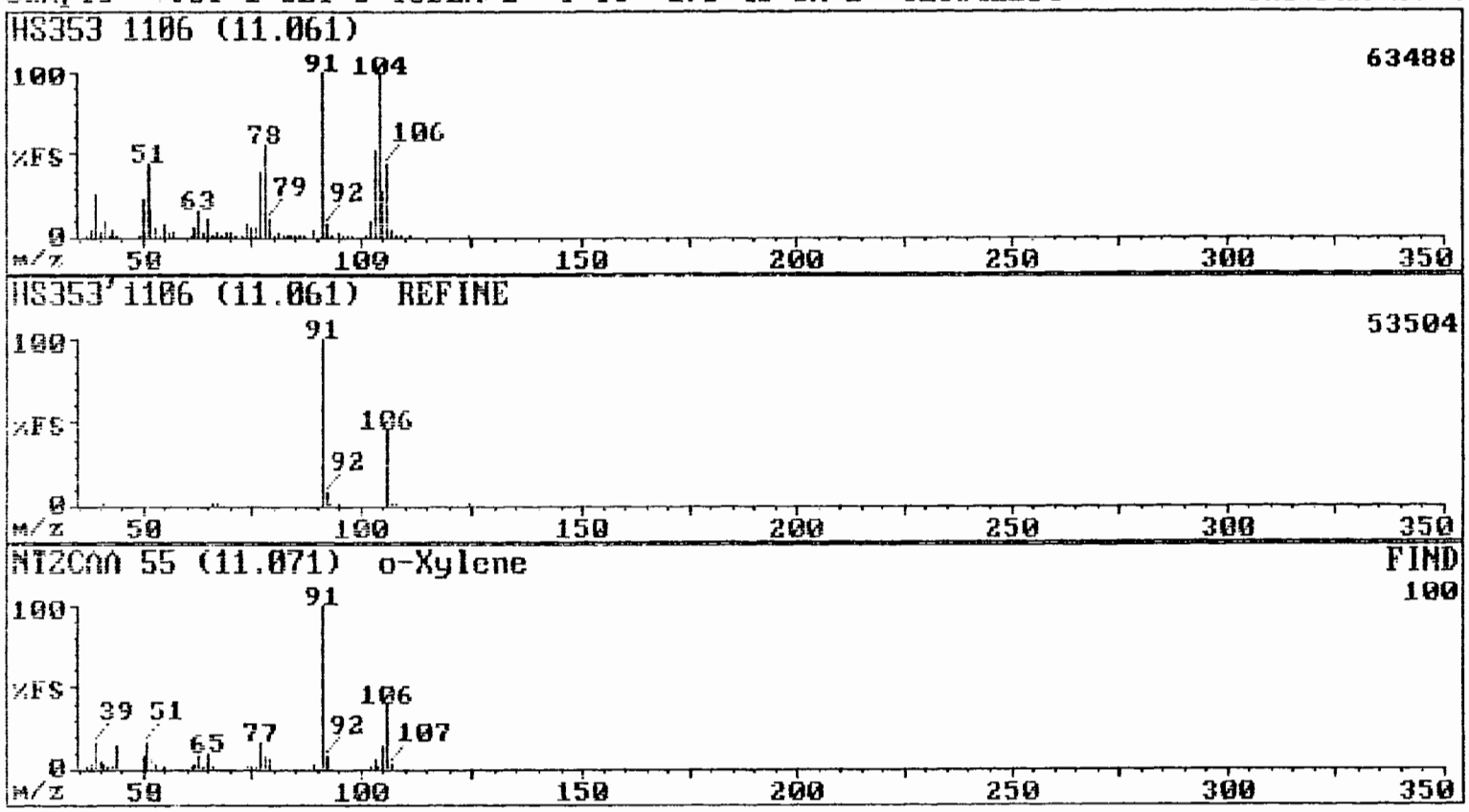
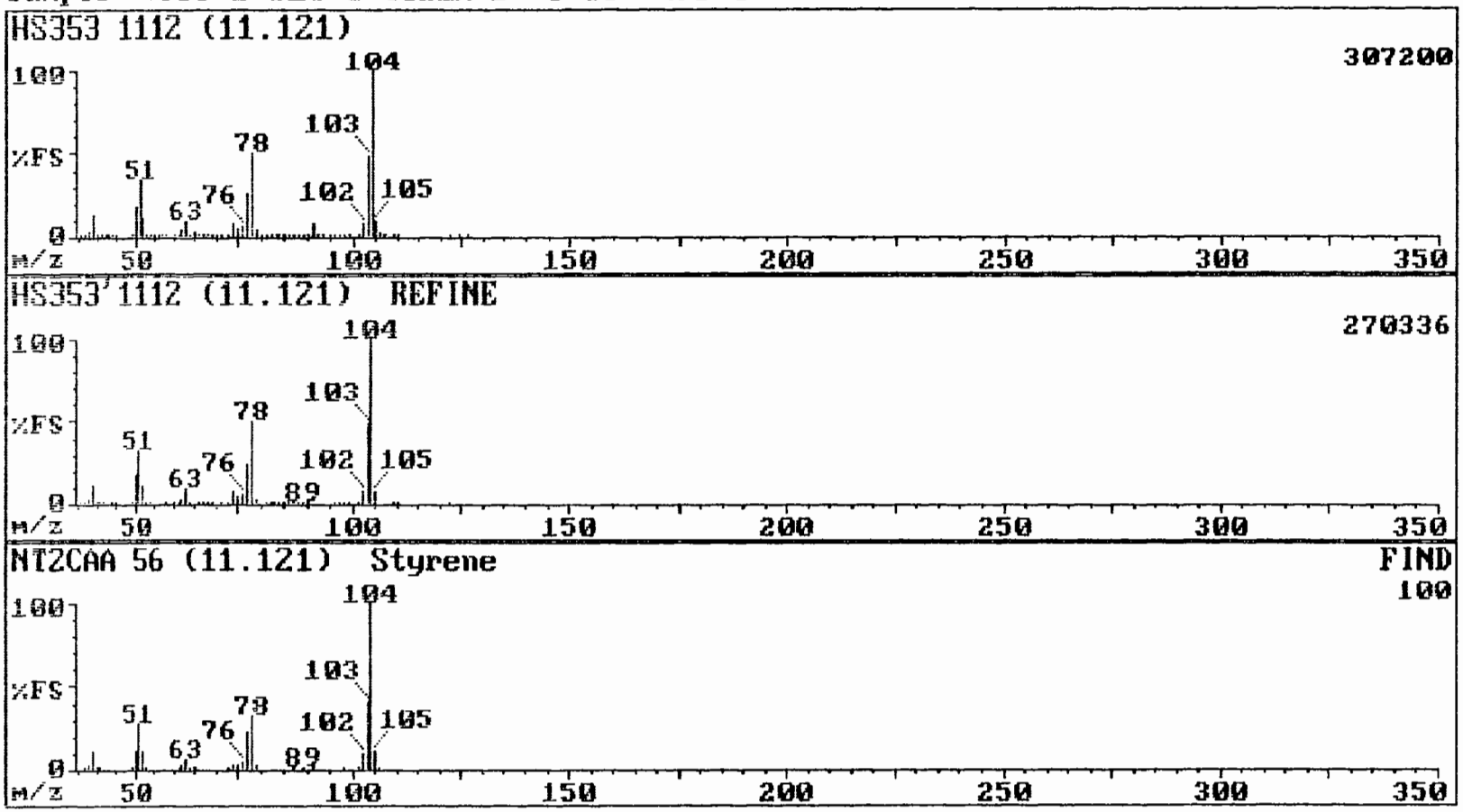
Sample: VOST-1 SET 3 TUBEA/B T/TC 173-46-3A/B TLI#42284 Instrument H



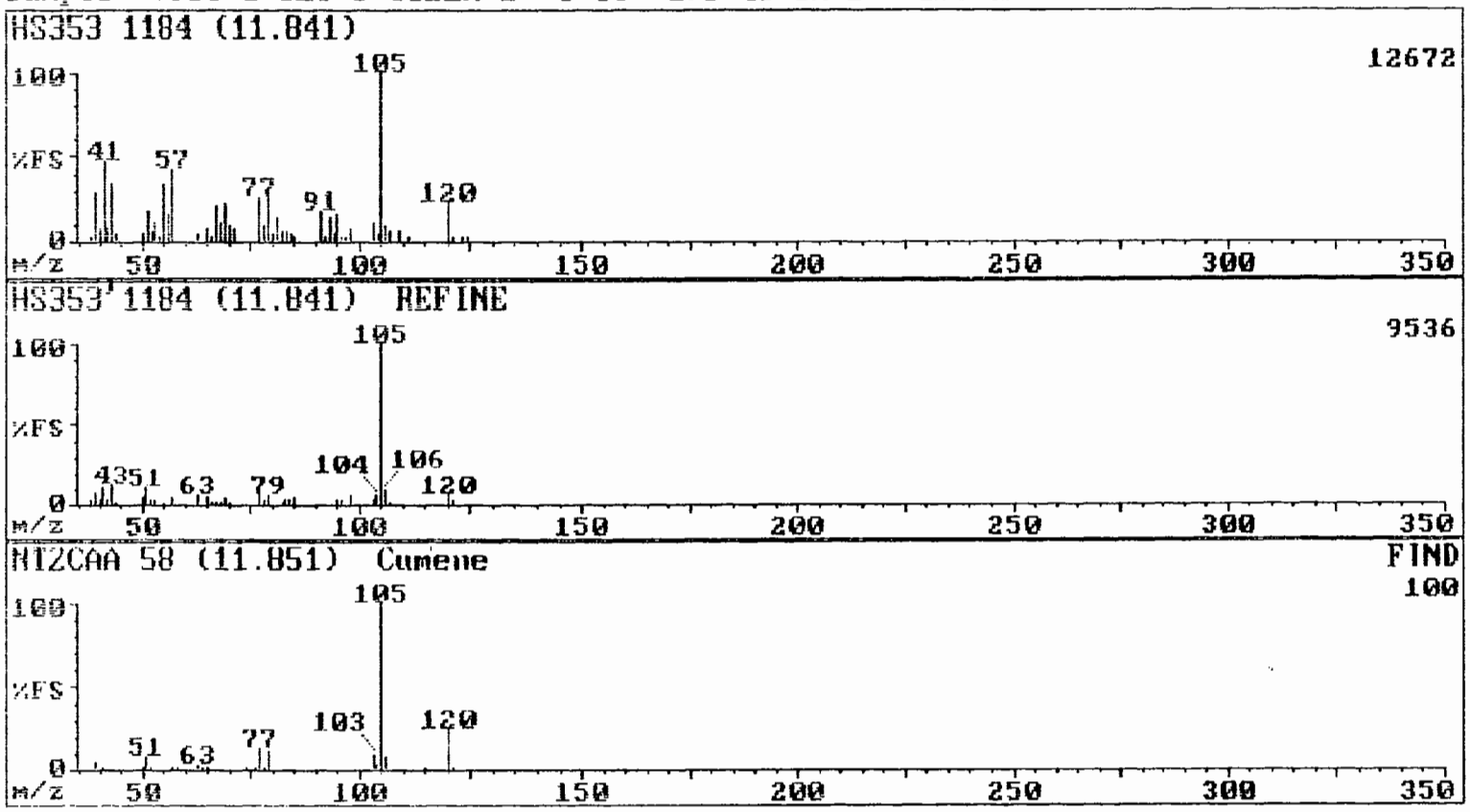
07-08-97 22:43 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 3 TUBEA/B T/TC 173-46-3A/B TLI#42284 Instrument H



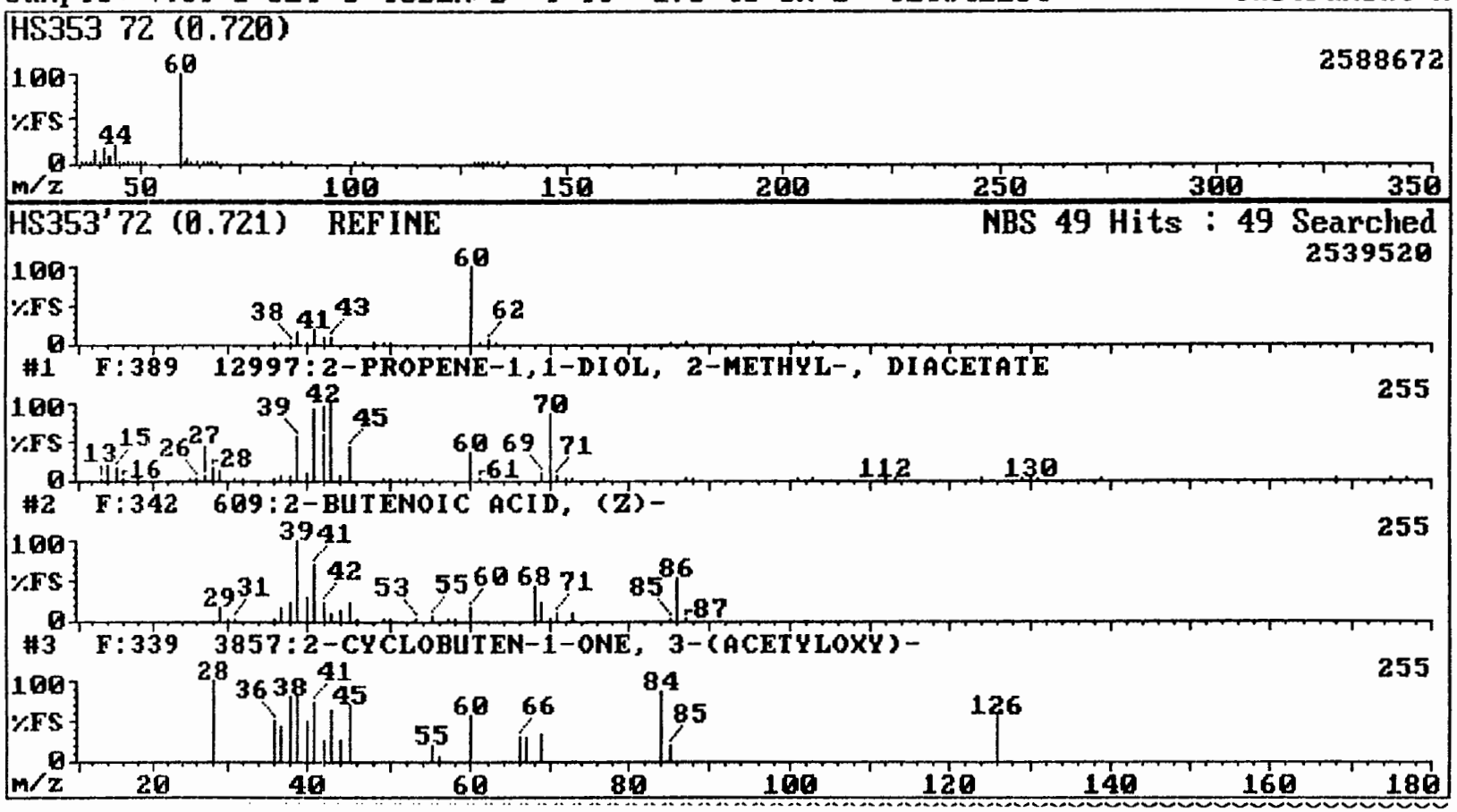
07 08-97 22:43 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 3 TUBEA/B T/TC 173-46-3A/B TLI#42284 Instrument H



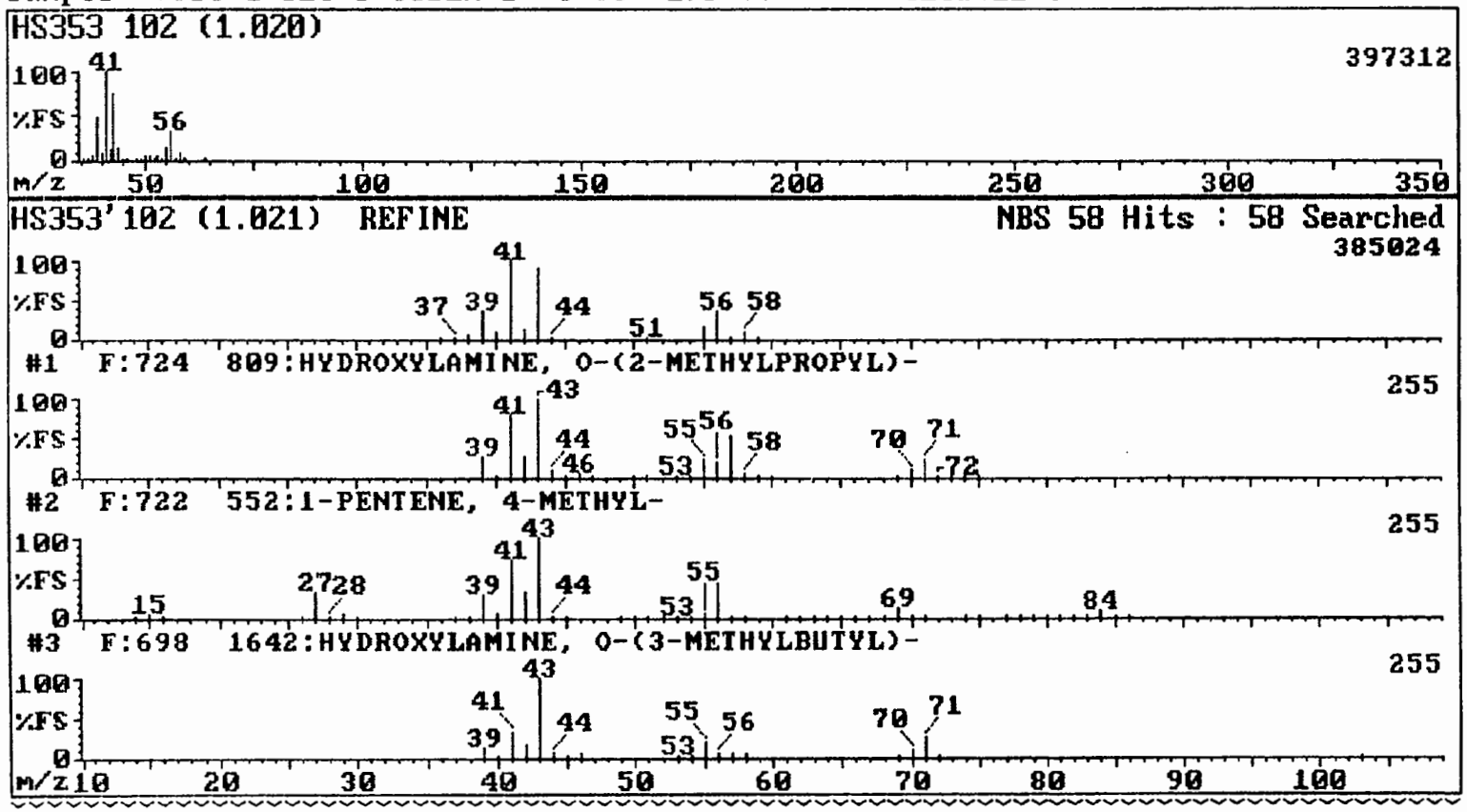
08-Jul-97 22:43 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 3 TUBEA/B T/TC 173-46-3A/B TLI#42284 Instrument H



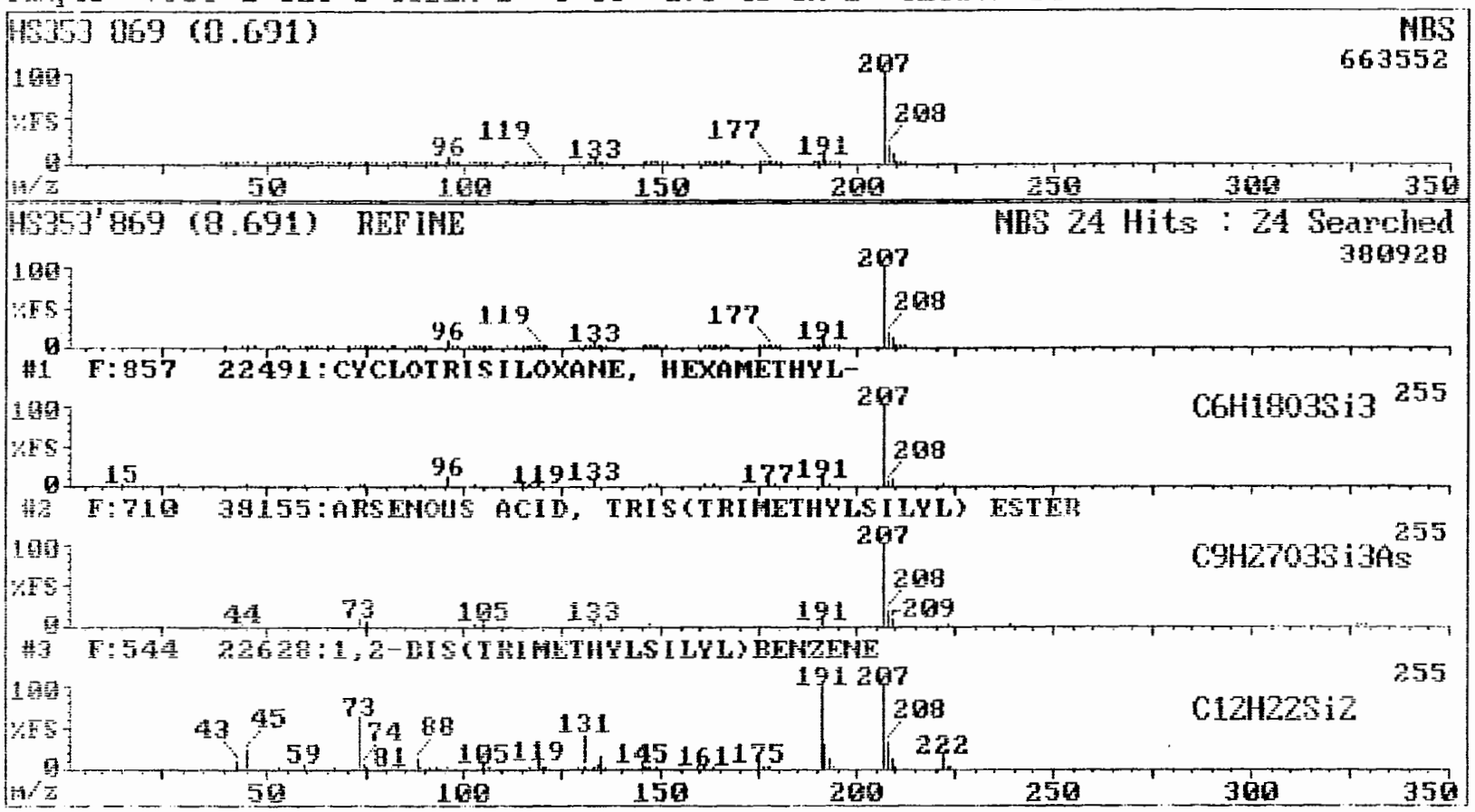
08-Jul-97 22:43 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 3 TUBEA/B T/TC 173-46-3A/B TLI#42284 Instrument H



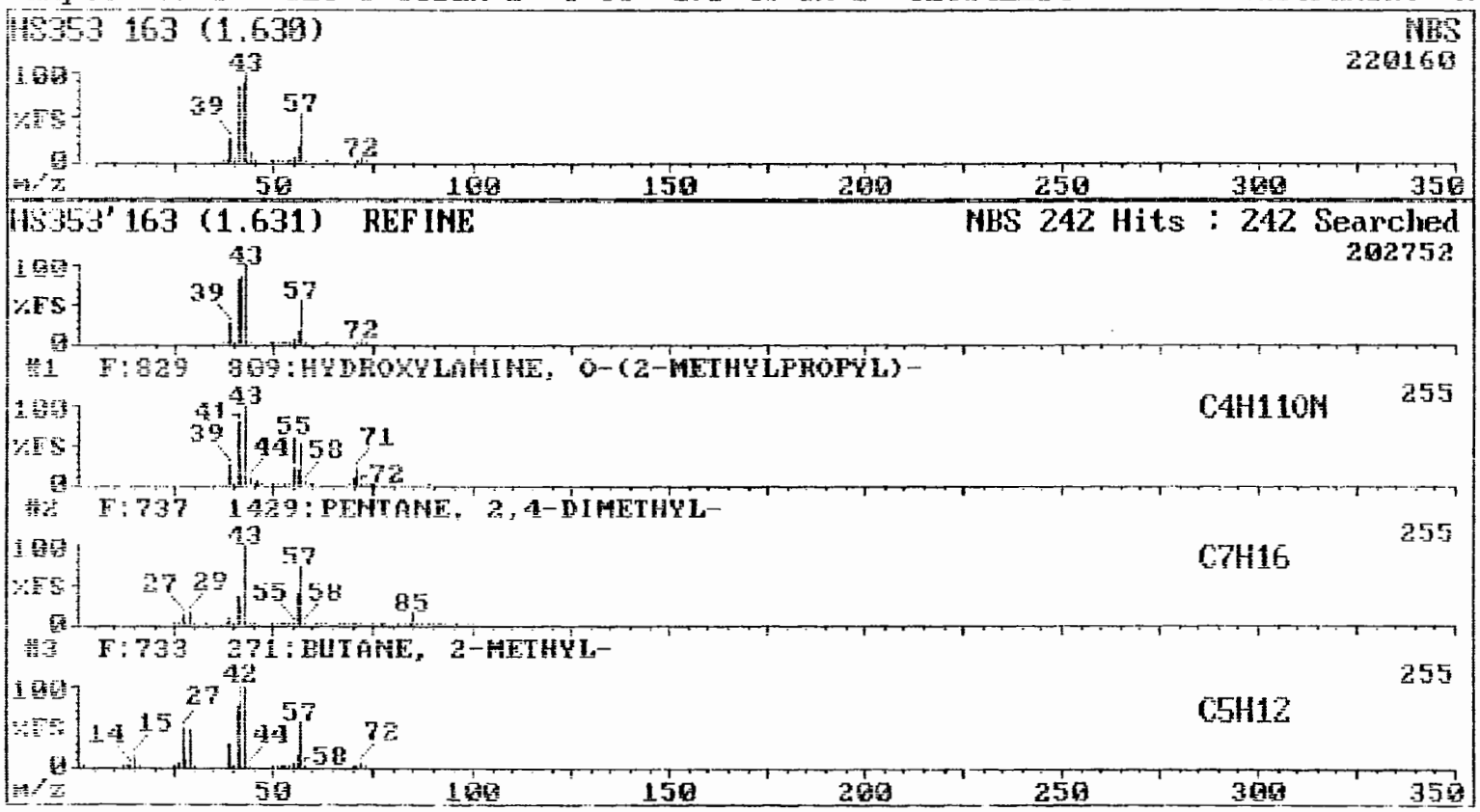
07/00/97 22:43 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 3 TUBEA/B T/TC 173-46-3A/B TLI#42284 Instrument: H



07/09/97 22:43 Triangle Laboratories of RTP, Inc. (919) 544-5729

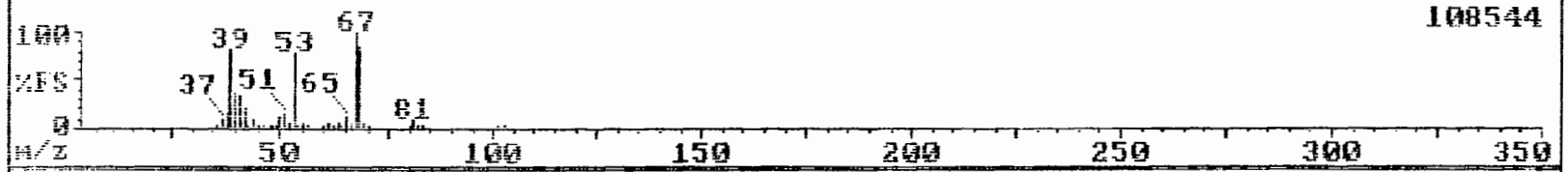
Sample: VOST-1 SET 3 TUBEA/B T/TC 173-46-3A/B TL1#42284 Instrument: H



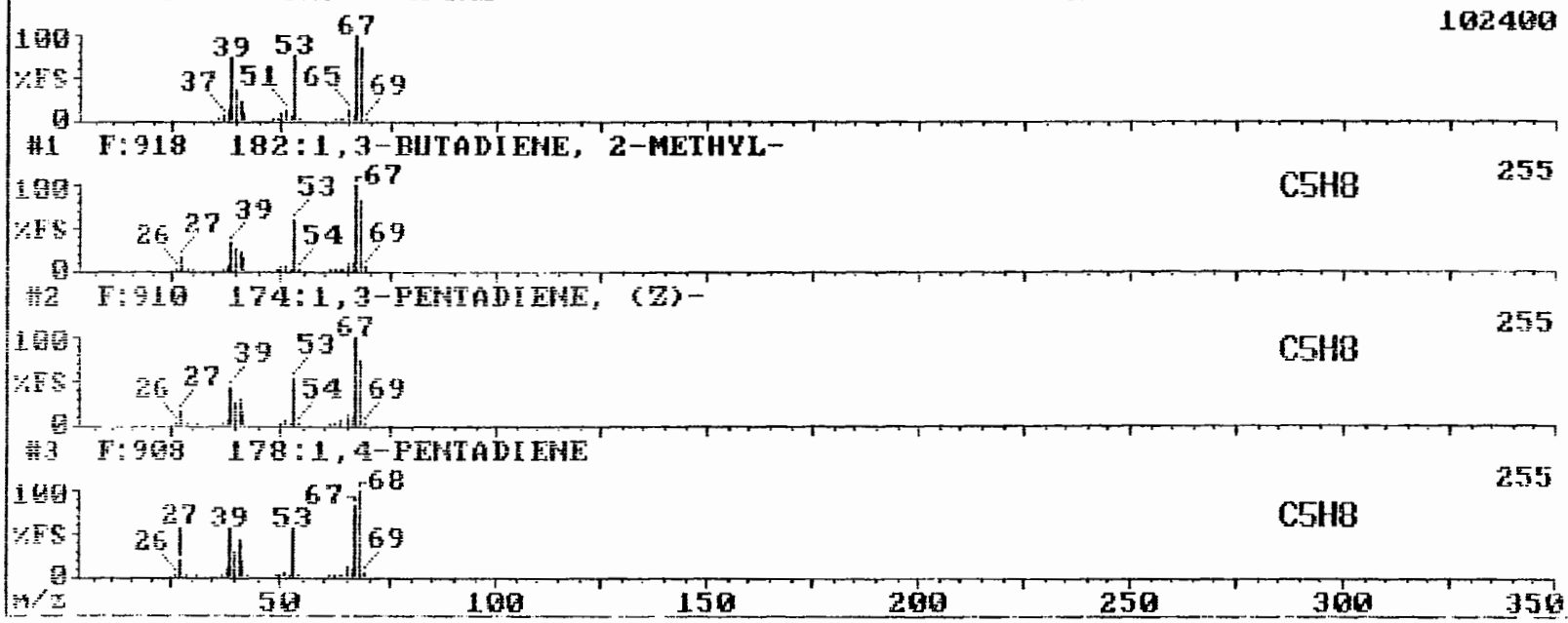
07/08/97 22:43 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 3 TUBEA/B T/TC 173-46-3A/B TLI#42284 Instrument: H

MS353 220 (2.200) NBS 108544

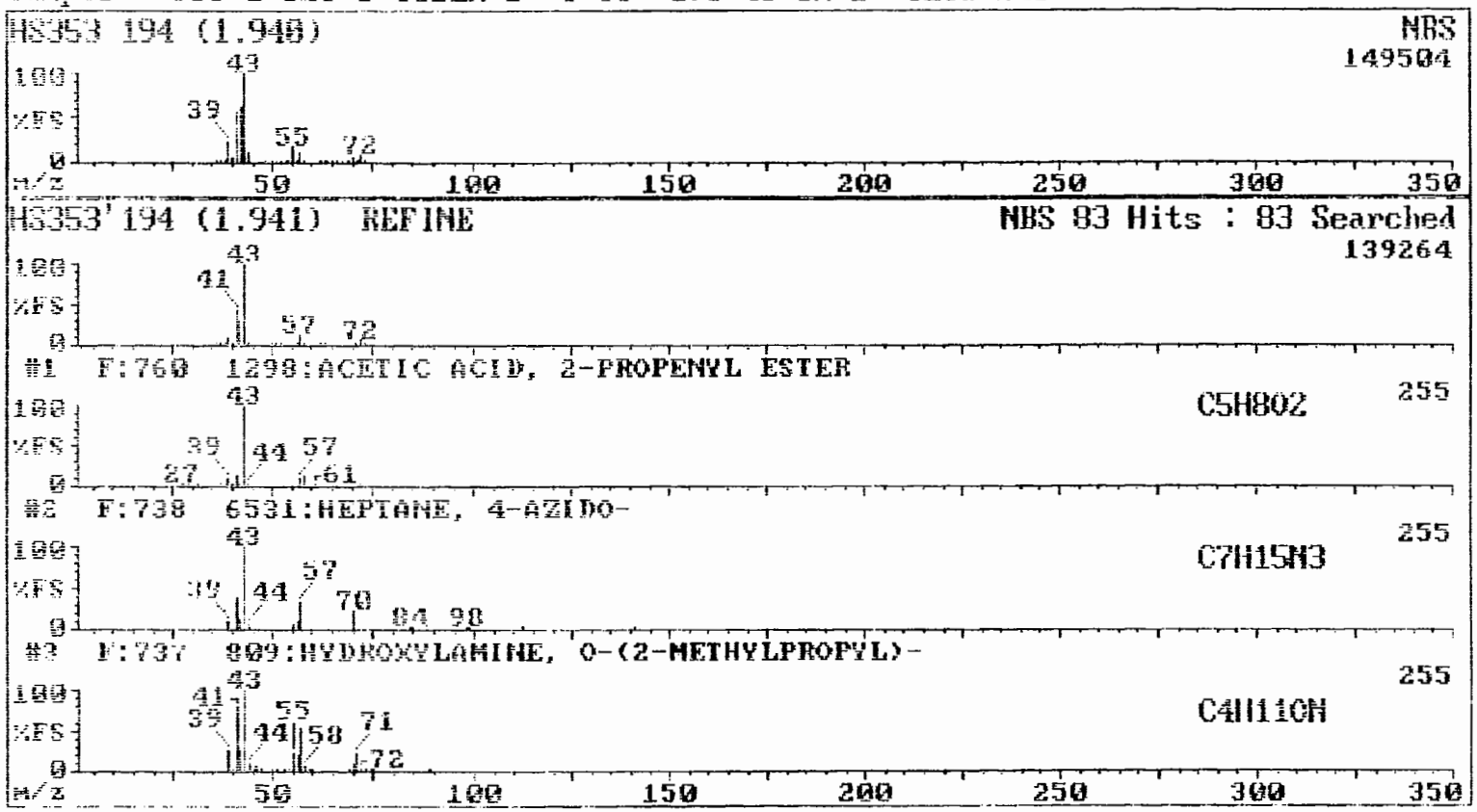


MS353'220 (2.201) REFINE NBS 33 Hits : 33 Searched 102400



07/08/97 22:43 Triangle Laboratories of RTP, Inc. (919) 544-5729

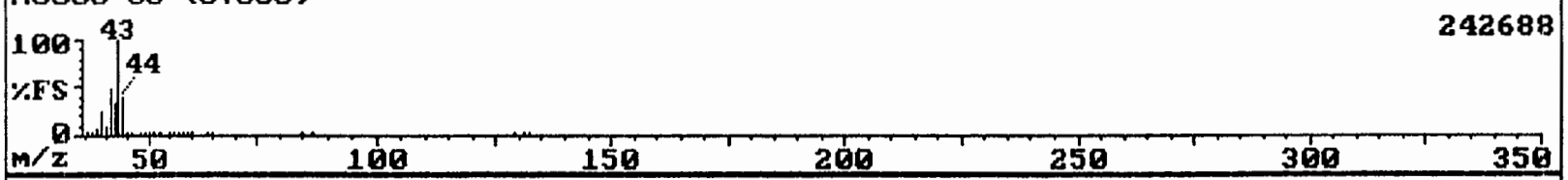
Sample: VOST-1 SET 3 TUBEA/B T/TC 173-46-3A/B TLI#42284 Instrument: H



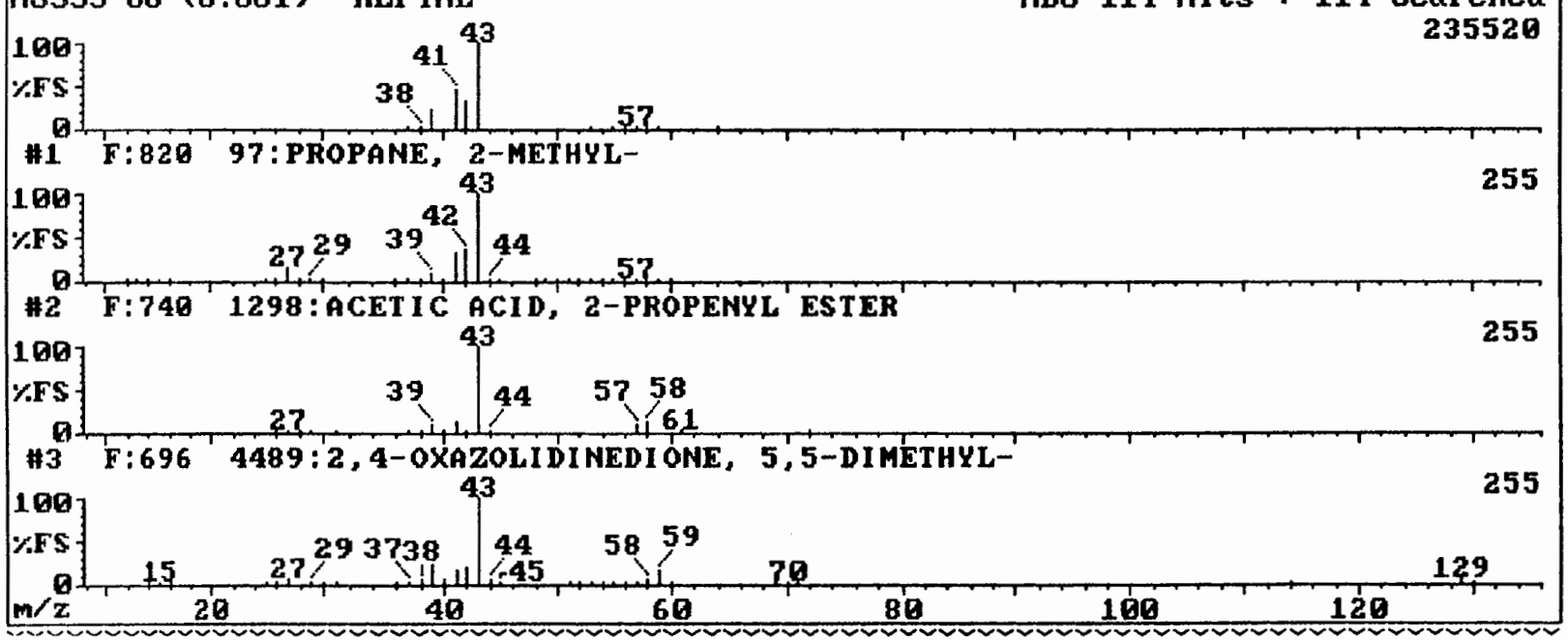
08-Jul-97 22:43 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 3 TUBEA/B T/TC 173-46-3A/B TLI#42284 Instrument H

HS353 86 (0.860)



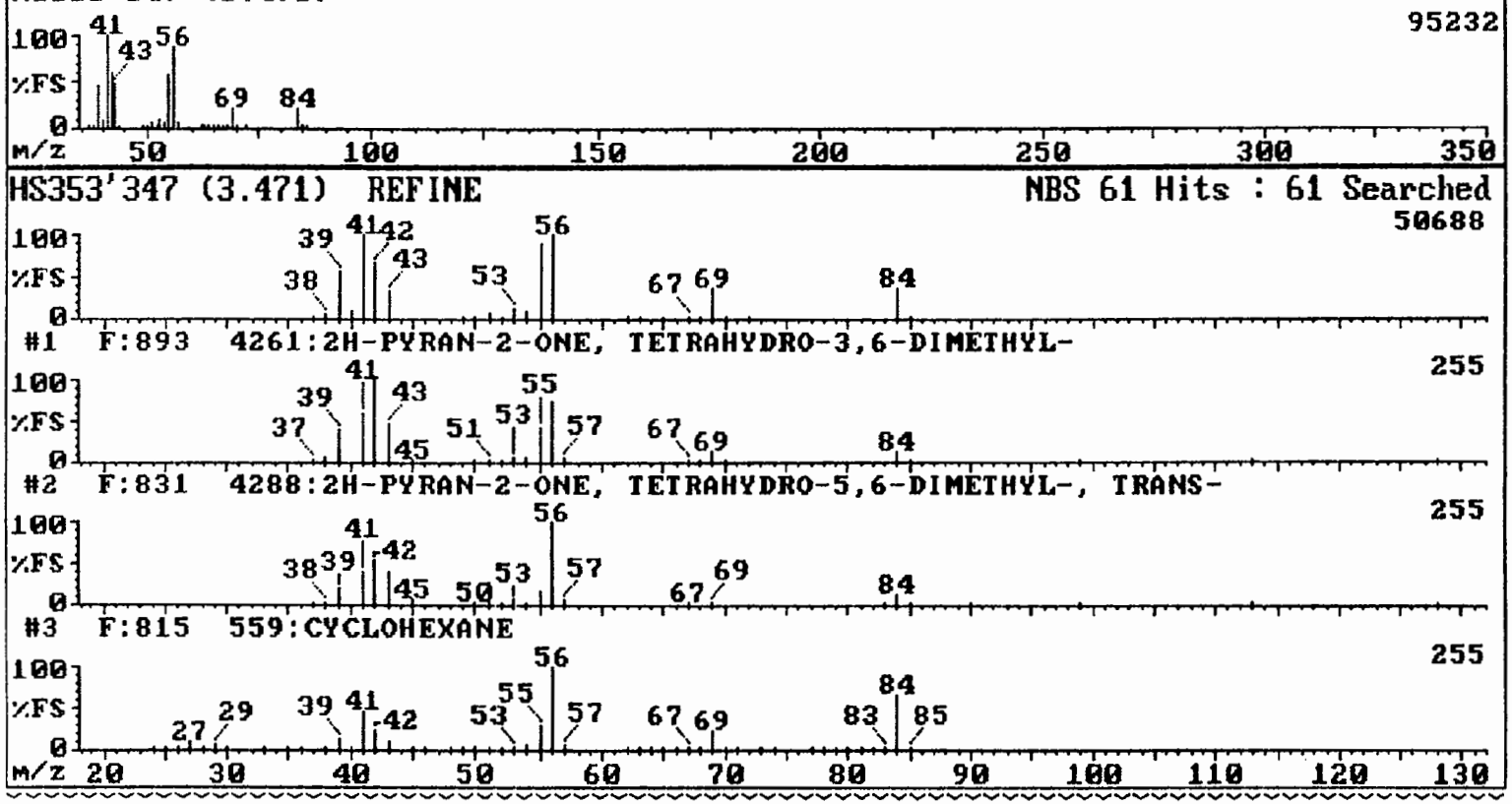
HS353'86 (0.861) REFINE NBS 114 Hits : 114 Searched



08-Jul-97 22:43 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 3 TUBEA/B T/TC 173-46-3A/B TLI#42284 Instrument H

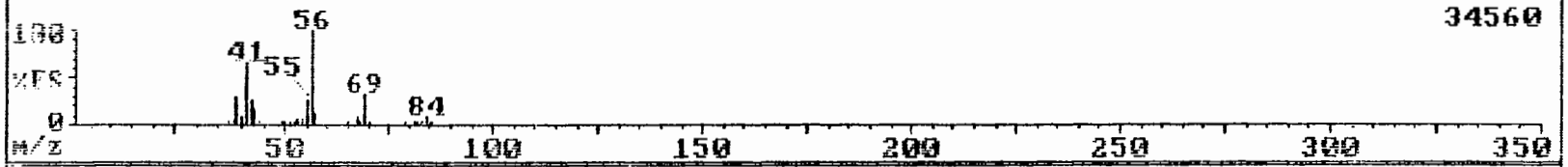
HS353 347 (3.470)



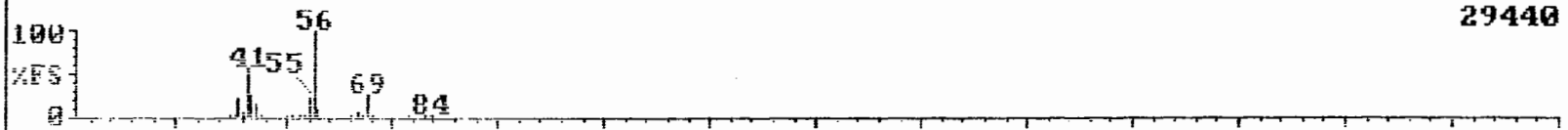
07/08/97 22:43 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 3 TUBEA/B T/TC 173-46-3A/B TLI#42284 Instrument: H

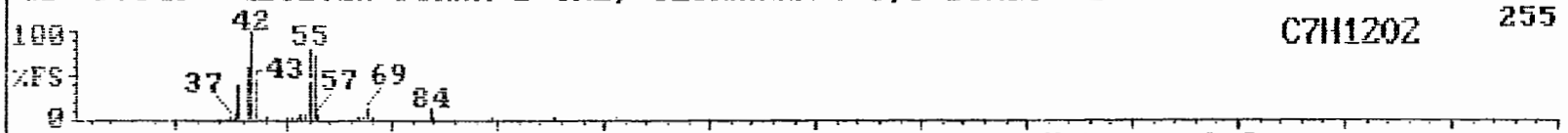
HS353 412 (4.120) NBS 34560



HS353'412 (4.121) REFINE NBS 66 Hits : 66 Searched 29440

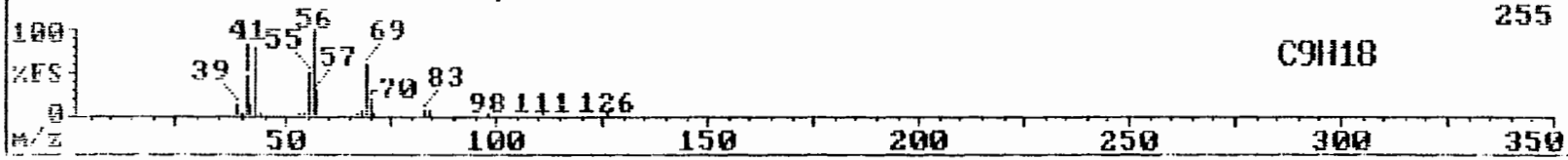


#1 F:849 4261:2H-PYRAN-2-ONE, TETRAHYDRO-3,6-DIMETHYL- C7H12O2 255



#2 F:843 4288:2H-PYRAN-2-ONE, TETRAHYDRO-5,6-DIMETHYL-, TRANS- C7H12O2 255

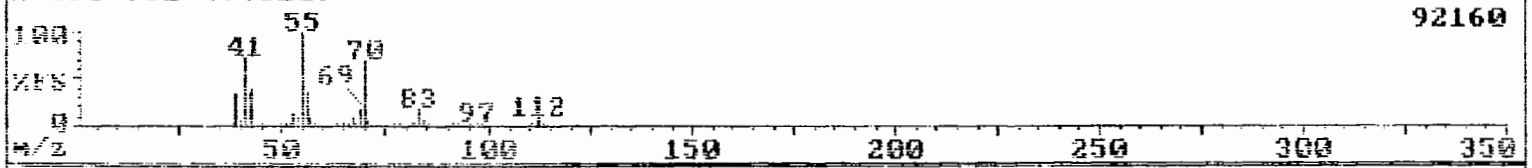
#3 F:820 4031:1-OCTENE, 7-METHYL- C9H18 255



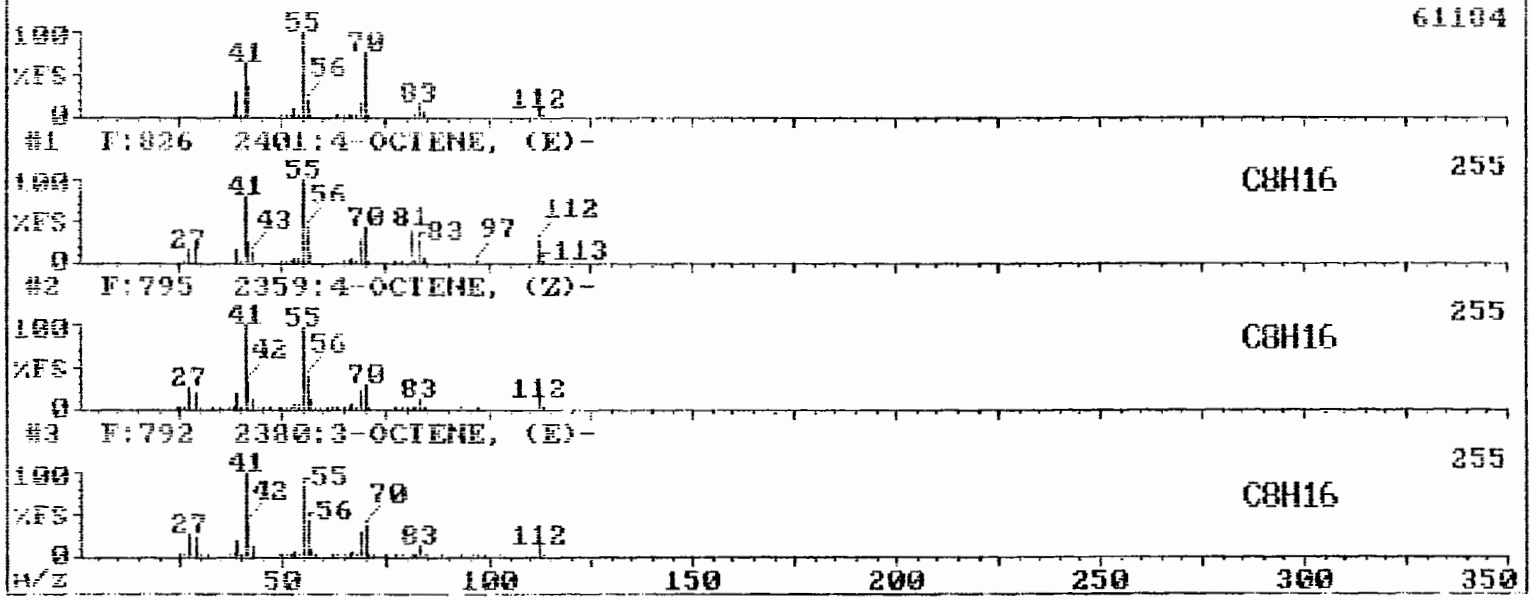
07/08/97 22:43 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 3 TUBEA/B T/TC 173-46-3A/B TLI#42284 Instrument: H

MS353 782 (7.821) NBS 92160



MS353'782 (7.821) REFINE NBS 74 Hits : 74 Searched 61104



Pacific Environmental Services

Project Number: 42284 | Method 8240A VOST
Sample File: HS354 | Sample ID: VOST-1 SET 4 TUBEA/B T/TC

Client Project: S407-003 | Date Received: 06/30/97 | Response File: ICALH708
TLI ID: 173-46-4A,B
Date Analyzed : 07/08/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
Bromochloromethane		IS 1	4.50		
Chloromethane	0.171		0.92		0.05
Vinyl Chloride		U		0.001	0.05
1,3-Butadiene	0.180		1.08		0.05
Bromomethane	0.018	J	1.41		0.05
Chloroethane	0.004	J	1.53		0.05
Vinyl bromide		U		0.001	0.05
Trichlorofluoromethane	0.064		1.82		0.05
1,1-Dichloroethene		U		0.001	0.05
Iodomethane		U		0.001	0.05
Carbon disulfide	0.420		2.49		0.05
Acetone	0.091	B	2.57		0.05
Allyl chloride		U		0.001	0.05
Methylene chloride	2.798	BE	2.97		0.05
trans-1,2-Dichloroethene		U		0.001	0.05
tert-Butyl methyl ether		U		0.001	0.05
Acrylonitrile		U		0.003	0.05
n-Hexane	1.272	E	3.56		0.05
1,1-Dichloroethane		U		0.001	0.05
1,2-Epoxybutane		U		0.003	0.05
cis-1,2-Dichloroethene		U		0.001	0.05
Chloroform		U		0.001	0.05
1,2-Dichloroethane		U		0.001	0.05
Isooctane	0.051		5.30		0.05
1,4-Difluorobenzene		IS 2	5.67		
Vinyl acetate		U		0.001	0.05

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

Pacific Environmental Services

Project Number: 42284 | **Method 8240A VOST**
Sample File: HS354 | **Sample ID: VOST-1 SET 4 TUBEA/B T/TC**

Client Project: S407-003 | **Date Received: 06/30/97** | **Response File: ICALH708**
TLI ID: 173-46-4A,B
Date Analyzed : 07/08/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
2-Butanone	0.016	J	4.40		0.05
1,1,1-Trichloroethane		U		0.001	0.05
Carbon tetrachloride	0.008	J	4.92		0.05
Benzene	1.108	BE	5.13		0.05
Trichloroethene		U		0.001	0.05
1,2-Dichloropropane		U		0.001	0.05
Ethyl acrylate		U		0.001	0.05
Methyl methacrylate	0.097		6.50		0.05
Bromodichloromethane		U		0.001	0.05
cis-1,3-Dichloropropene		U		0.001	0.05
trans-1,3-Dichloropropene		U		0.001	0.05
1,1,2-Trichloroethane		U		0.001	0.05
Dibromochloromethane		U		0.001	0.05
Ethylene dibromide		U		0.001	0.05
Bromoform		U		0.001	0.05
Chlorobenzene-d_5		IS 3	9.80		
4-Methyl-2-pentanone		U		0.001	0.05
Toluene	0.357	B	7.61		0.05
Tetrachloroethene		U		0.001	0.05
2-Hexanone		U		0.001	0.05
Chlorobenzene	0.007	J	9.85		0.05
Ethylbenzene	0.050		10.14		0.05
m-/p-Xylene	0.122		10.37		0.10
o-Xylene	0.045	J	11.08		0.05
Styrene	0.239		11.13		0.05
1,1,2,2-Tetrachloroethane		U		0.001	0.05

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

Triangle Laboratories of RTP, Inc.
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Savar v3.5
Printed: 15:02 07/22/1997

Pacific Environmental Services

Project Number: 42284 | **Method 8240A VOST**
Sample File: HS354 | **Sample ID: VOST-1 SET 4 TUBEA/B T/TC**

Client Project: S407-003 | **Date Received: 06/30/97** | **Response File: ICALH708**
TLI ID: 173-46-4A,B
Date Analyzed : 07/08/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
Cumene	0.005	J	11.86		0.05

Surrogate Summary	Amount (ug)	RT	IS Ref	%REC
1,2-Dichloroethane-d_4	0.287	5.11	1	115
Benzene-d_6	0.309	5.10	2	124
Toluene-d_8	0.294	7.52	3	118

Reviewed by TW Date 7/22/97

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

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Savar v3.5
Printed: 15:02 07/22/1997

Pacific Environmental Services

Project Number:	42284	Method 8240A	
Sample File:	HS354	Sample ID:	VOST-1 SET 4 TUBEA/B T/TC

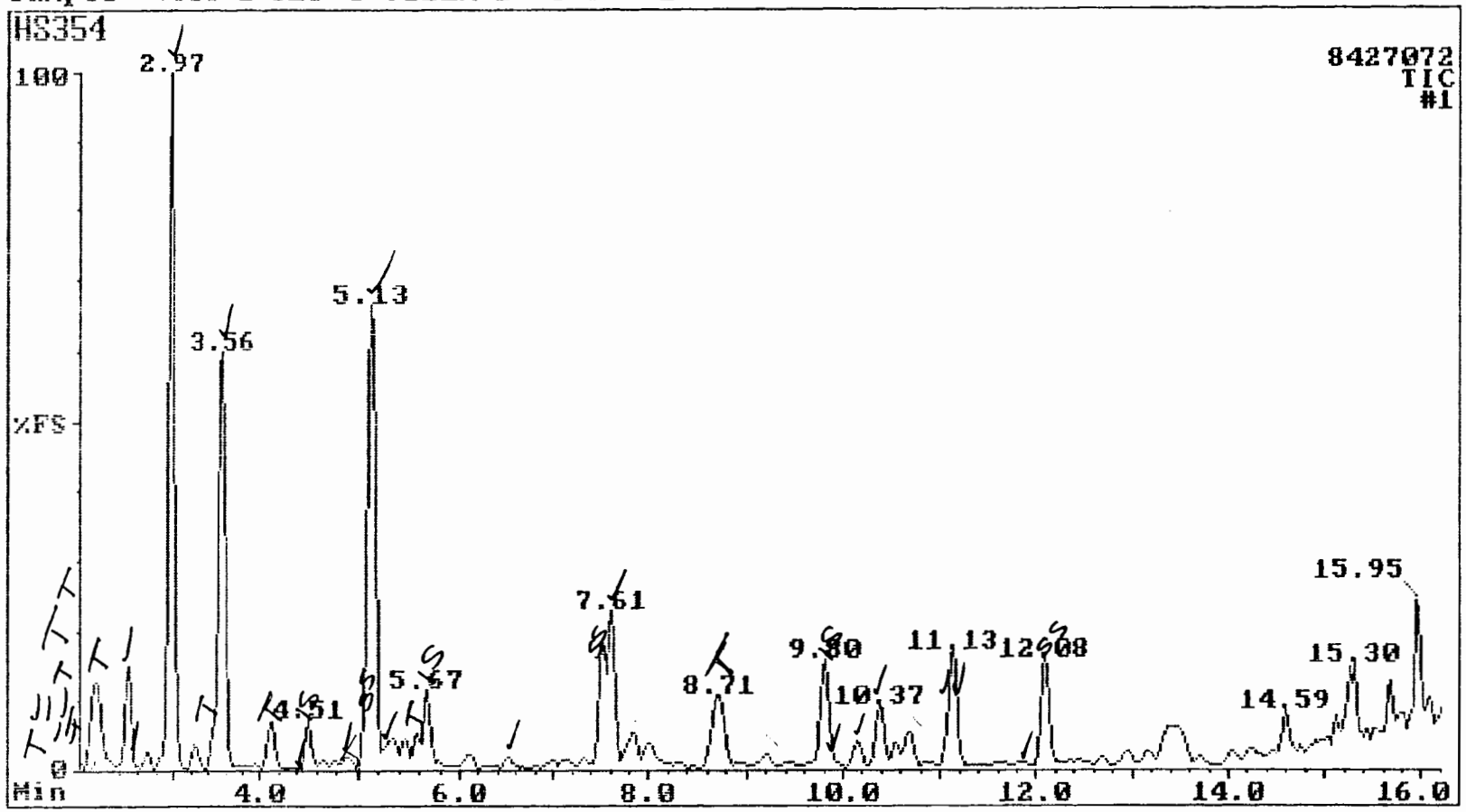
Client Project:	S407-003	Date Received:	06/30/97
TLI ID:	173-46-4A,B	Date Analyzed:	07/08/97
	Dilution Factor:	1.00	

Tentatively Identified Compounds

Name	RT	Area	IS RT	IS Area	Amount, ug
Unknown	0.72	37877712	4.511	5059289	1.872
Methylbutane Isomer	1.620	33751072	4.511	5059289	1.668
C5H8 Isomer	2.16	11259503	4.511	5059289	0.556
Halogenated Hydrocarbon	1.02	10214934	4.511	5059289	0.505
Pentane	1.930	7658952	4.511	5059289	0.378
Methyl Propane Isomer	0.85	5962515	4.511	5059289	0.295
Hexamethylcyclotrisiloxane	8.711	12839838	9.801	11919703	0.269
Tetrahydrodimethyl Pyranone Isomer	4.120	5164354	4.511	5059289	0.255
C6H12 Isomer	3.48	3255152	4.511	5059289	0.161
C7H16 Isomer	5.57	2870396	4.511	5059289	0.142

07-08-97 23:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 4 TUBEA/B T/TC 173-46-4A/B TLI#42284 Instrument H



Data Review: TW
Date: 7-20-97

UAN DB : H6354 LAB-BASE QUAN 07-08-97 23:27

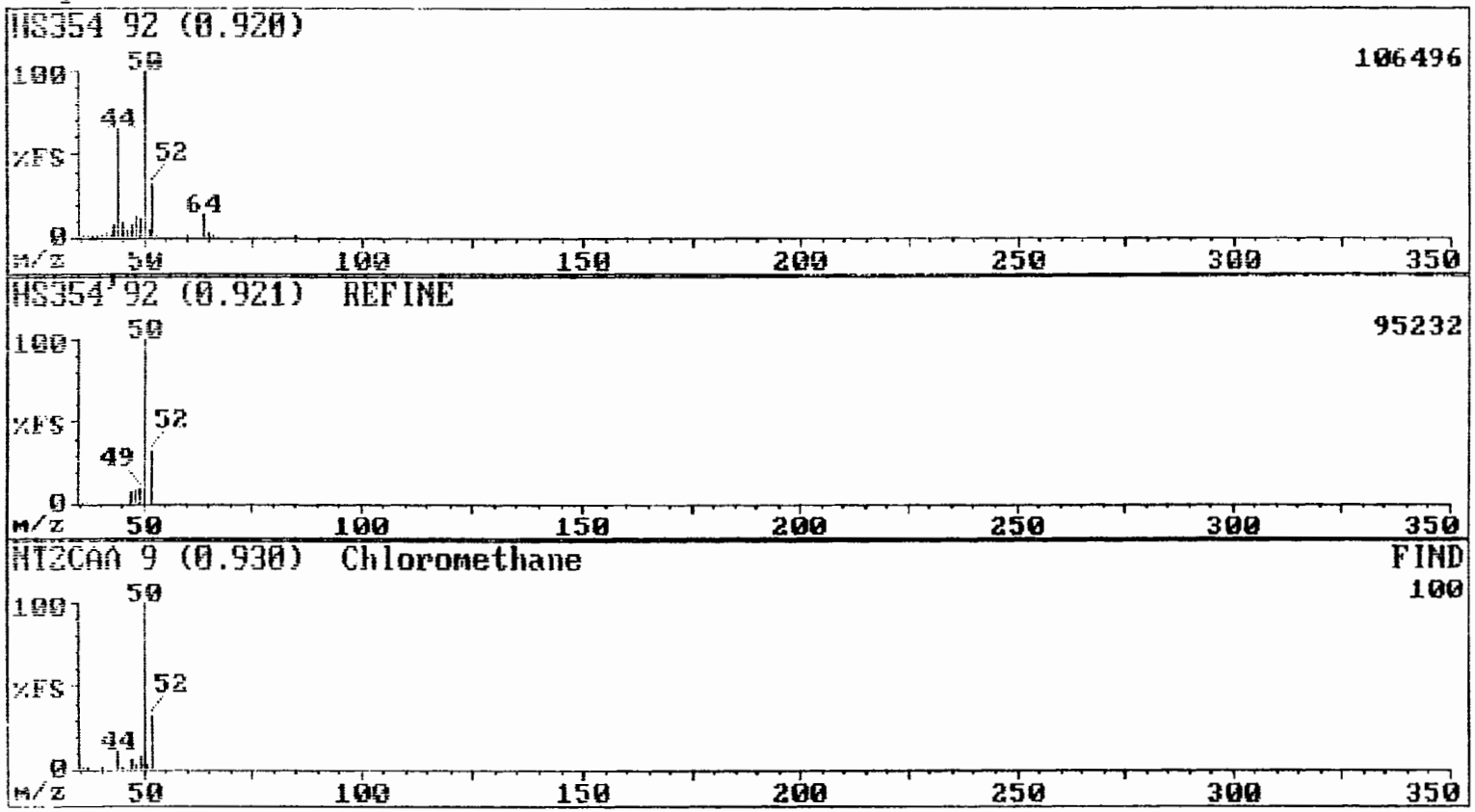
No.	MAT	FOR	REV	Delta	Area	P.Flags	RT	QM	Name
1	100	91	99	-1	394908	bb	4.50	128	Bromochloromethane
2	100	92	97	2	2418048	bb	5.67	114	1,4-Difluorobenzene
3	100	96	98	-2	3056432	bv	9.80	117	Chlorobenzene-d5
4	54	20	67	2	1219696	bv	5.11	65	1,2-Dichloroethane-d4
5	99	80	81	0	3454636	bv	5.10	84	Benzene-d6
6	100	89	99	1	4074484	bv	7.52	98	Toluene-d8
~~7~~	~~19~~	~~12~~	~~32~~	~~78~~	~~33112~~	~~A~~	~~13.33~~	98	o-Xylene-d10 FP TW
8	100	87	94	2	1968560	vv	12.09	95	4-Bromofluorobenzene
9	100	81	89	-1	568848	vv	0.92	50	Chloromethane
10	0	0	0	0	0		0.00	62	Vinyl Chloride
11	100	77	100	-1	~~1908056 A~~ 748260		~~1.01~~ 1.08	39	1,3-Butadiene MI TW
12	89	49	95	-1	63032	bv	1.41	94	Bromomethane
13	31	33	50	27	~~333428 A~~ 8656		~~1.81~~ 1.53	64	Chloroethane MI TW
14	0	0	0	0	0		0.00	106	Vinyl bromide
15	90	56	95	-2	292228	bb	1.82	101	Trichlorofluoromethane
~~16~~	~~26~~	~~10~~	~~56~~	~~24~~	~~3396~~	~~bb~~	~~2.16~~	96	1,1-Dichloroethene FP TW
17	0	0	0	0	0		0.00	142	Iodomethane
18	100	82	99	0	4184640	bv	2.49	76	Carbon disulfide
19	87	61	82	1	187589	vb	2.57	43	Acetone
~~20~~	~~73~~	~~45~~	~~73~~	~~-1~~	~~15876~~	~~vb~~	~~2.81~~	76	Allyl chloride FP TW
21	100	87	96	1	8706852	bv	2.97	84	Methylene chloride
22	0	0	0	0	0		0.00	96	trans-1,2-Dichloroethene
~~23~~	~~79~~	~~62~~	~~66~~	~~1~~	~~27012~~	~~bb~~	~~3.31~~	73	tert-Butyl methyl ether
~~24~~	~~25~~	~~7~~	~~33~~	~~-1~~	~~29288~~	~~bv~~	~~3.25~~	53	Acrylonitrile FP TW
25	100	99	100	0	9400863	vv	3.56	57	n-Hexane
26	0	0	0	0	0		0.00	63	1,1-Dichloroethane
~~27~~	~~55~~	~~44~~	~~54~~	~~7~~	~~372099~~	~~vv~~	~~4.11~~	42	1,2-Epoxybutane FP TW
28	0	0	0	0	0		0.00	96	cis-1,2-Dichloroethene
29	0	0	0	0	0		0.00	83	Chloroform
30	0	0	0	0	0		0.00	62	1,2-Dichloroethane
31	100	79	95	2	1280660	bv	5.30	57	Isooctane
~~32~~	~~32~~	~~31~~	~~62~~	~~29~~	~~6940365~~	~~bv~~	~~3.56~~	43	Vinyl acetate FP TW
33	93	75	76	1	6104	A	4.40	72	2-Butanone
34	0	0	0	0	0		0.00	97	1,1,1-Trichloroethane
35	36	14	45	0	35696	bb	4.92	117	Carbon tetrachloride
36	100	93	100	-1	13574330	bv	5.13	78	Benzene
37	0	0	0	0	0		0.00	130	Trichloroethene
~~38~~	~~20~~	~~18~~	~~41~~	~~30~~	~~840~~	~~bb~~	~~5.85~~	63	1,2-Dichloropropane FP TW
~~39~~	~~40~~	~~30~~	~~62~~	~~13~~	~~279744~~	~~bb~~	~~6.09~~	55	Ethyl acrylate
40	100	92	97	0	226800	vb	6.50	69	Methyl methacrylate
41	0	0	0	0	0		0.00	83	Bromodichloromethane
42	0	0	0	0	0		0.00	75	cis-1,3-Dichloropropene
43	0	0	0	0	0		0.00	75	trans-1,3-Dichloropropen
44	0	0	0	0	0		0.00	97	1,1,2-Trichloroethane
45	0	0	0	0	0		0.00	129	Dibromochloromethane
46	0	0	0	0	0		0.00	107	Ethylene dibromide
47	0	0	0	0	0		0.00	173	Bromoform
~~48~~	~~37~~	~~35~~	~~78~~	~~19~~	~~139210~~	~~vv~~	~~7.31~~	43	4-Methyl-2-pentanone FP TW
49	100	94	99	1	3225572	bv	7.61	92	Toluene
50	0	0	0	0	0		0.00	164	Tetrachloroethene

Data Review: TW
Date: 7-20-97

No.	MAT	FOR	REV	Delta	Area	P.Flags	RT	QM	Name
~~51~~	~~35~~	~~6~~	~~59~~	~~-7~~	~~47797~~	~~vb~~	~~8.75~~	43	2-Hexanone FP-TW
52	57	22	73	1	88692	bb	9.85	112	Chlorobenzene
53	100	87	98	1	311832	bv	10.14	106	Ethylbenzene
54	100	87	94	0	953864	vv	10.37	106	m-/p-Xylene
55	99	76	82	1	334496	bv	11.08	106	o-Xylene
56	100	93	98	1	2946956	bv	11.13	104	Styrene
~~57~~	~~27~~	~~5~~	~~46~~	~~6~~	~~3104~~	~~A~~	~~12.50~~	83	1,1,2,2-Tetrachloroe FP-TW
58	66	36	72	1	126173	bv	11.86	105	Cumene

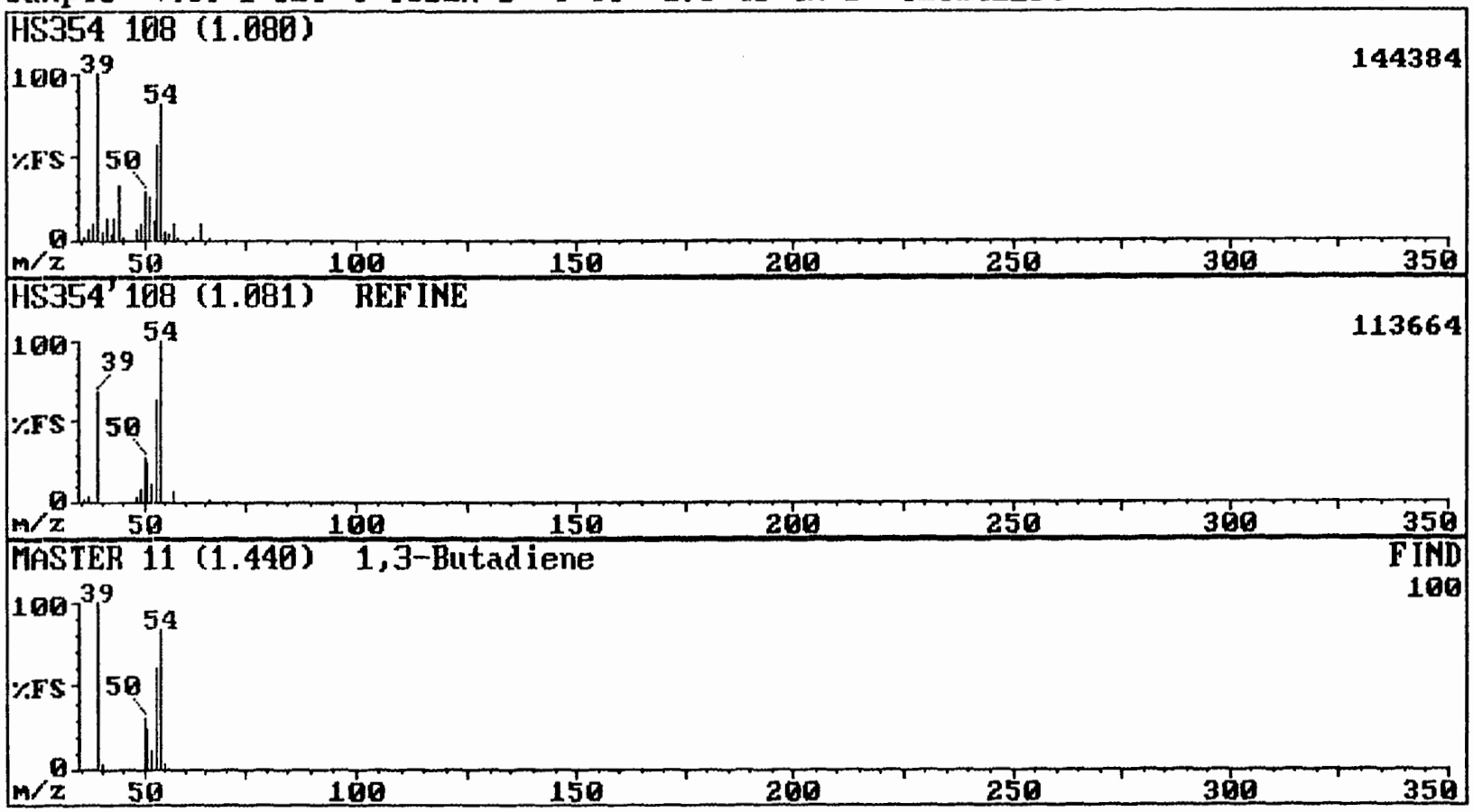
07-08-97 23:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 4 TUBEA/B T/TC 173-46-4A/B TLI#42284 Instrument II



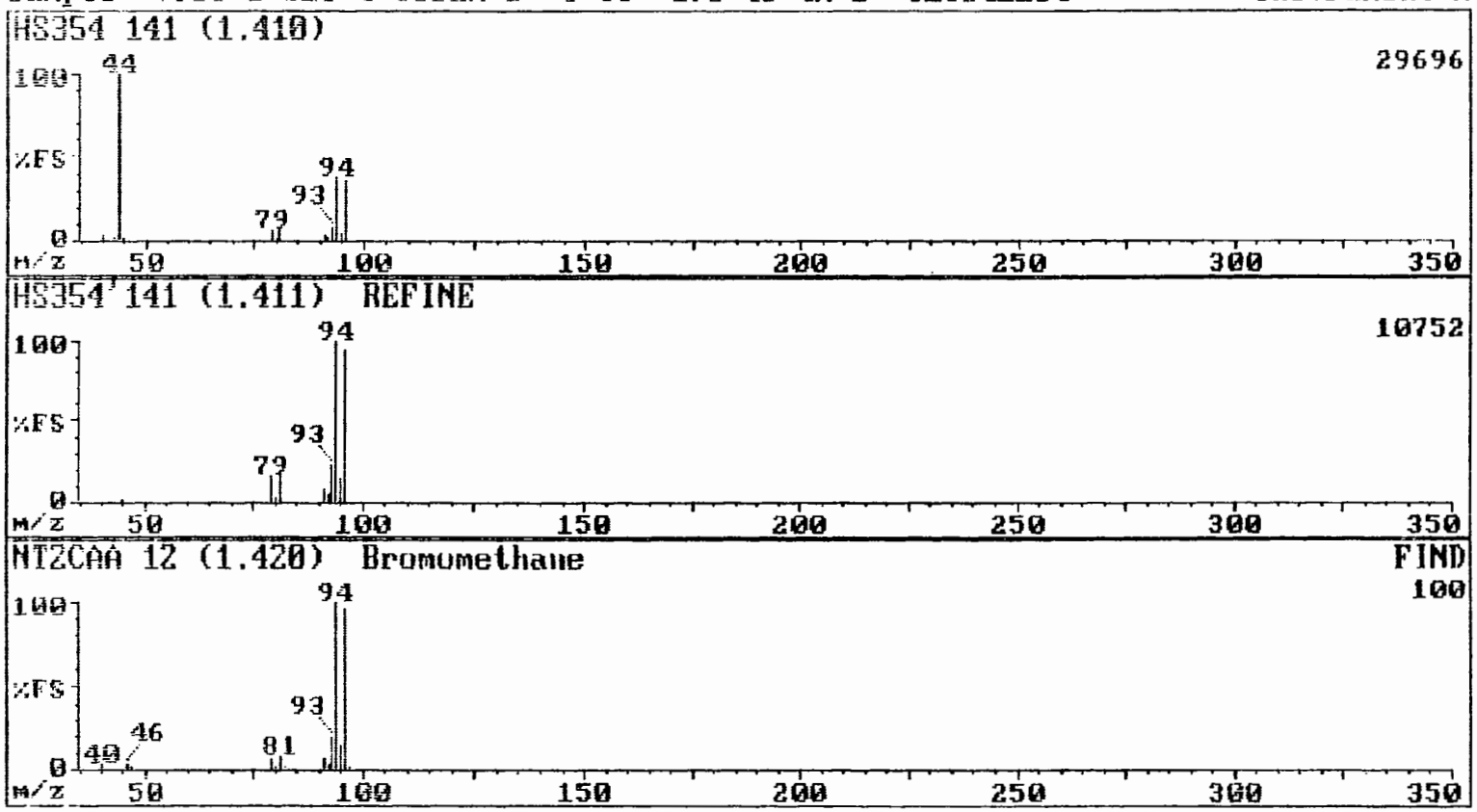
08-Jul-97 23:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 4 TUBEA/B T/TC 173-46-4A/B TLI#42284 Instrument H



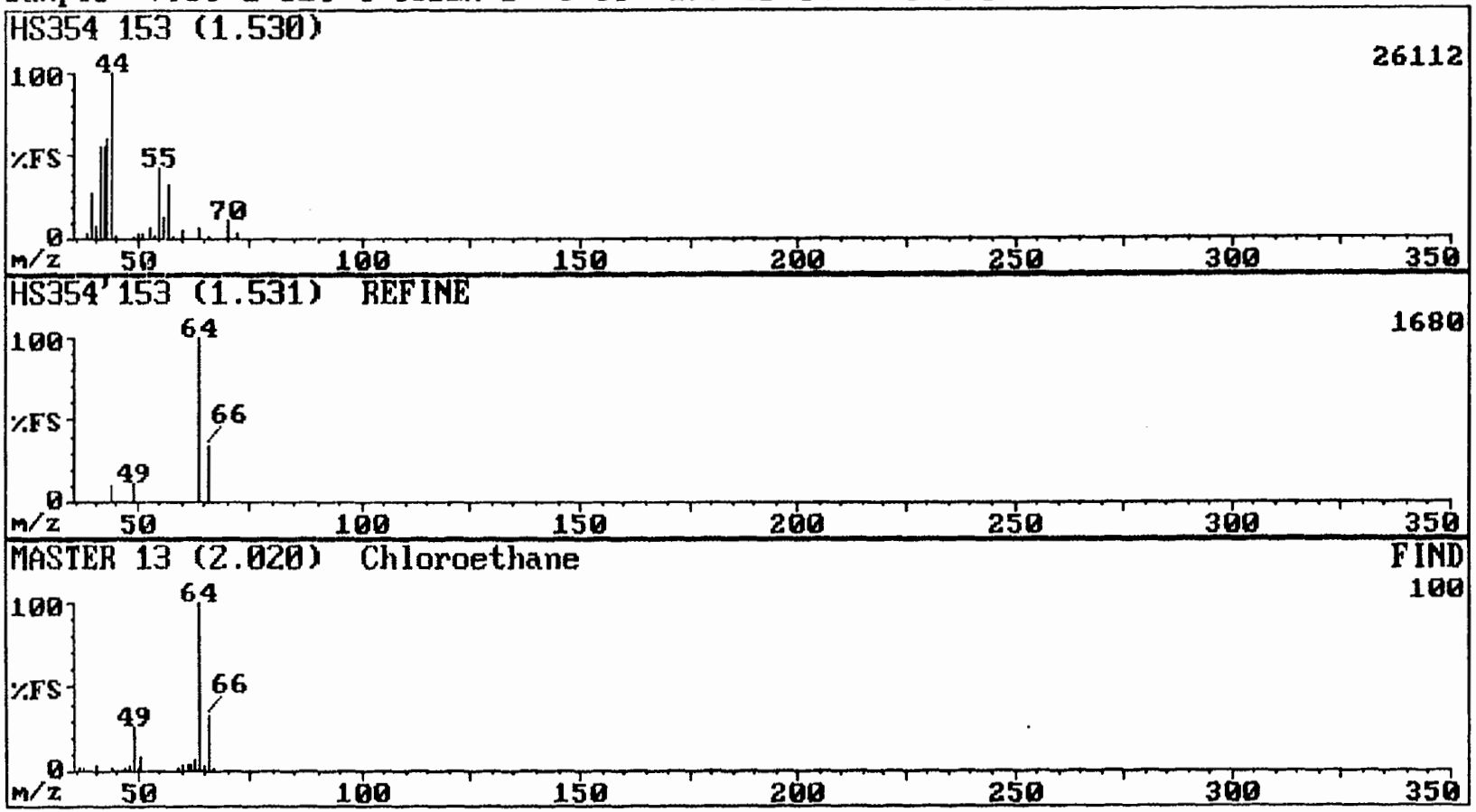
07-08-97 23:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 4 TUBEA/B T/TC 173-46-4A/B TLI#42284 Instrument H



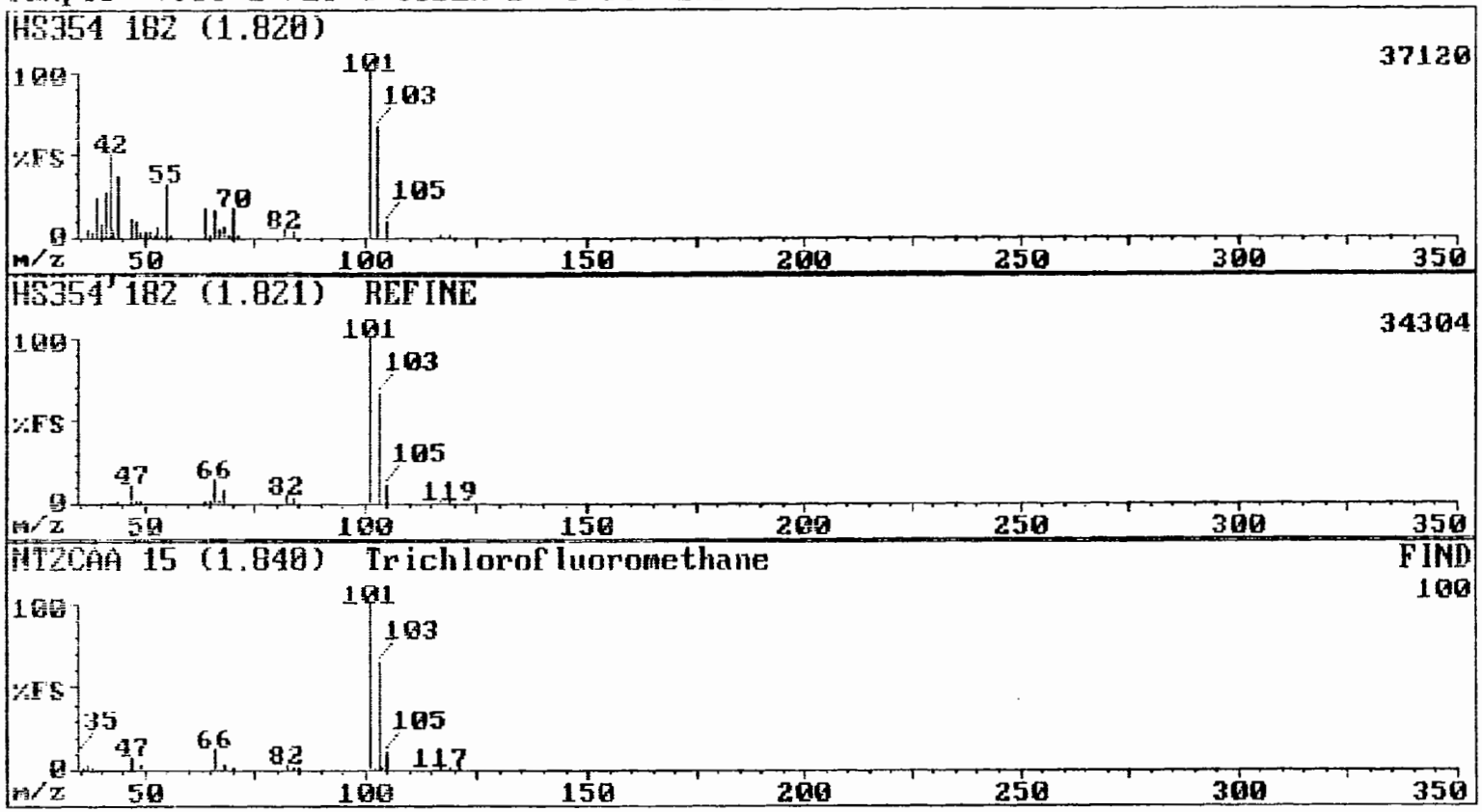
08-Jul-97 23:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 4 TUBEA/B T/TC 173-46-4A/B TLI#42284 Instrument H



07-08-97 23:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

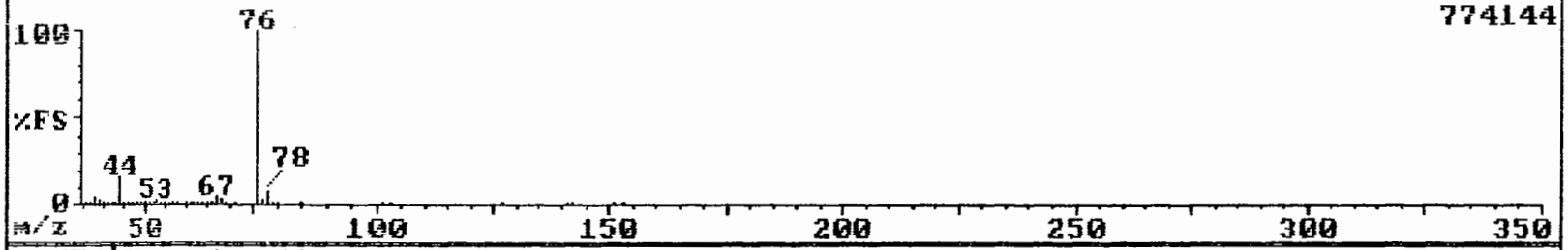
Sample: VOST-1 SET 4 TUBEA/B T/TC 173-46-4A/B TLI#42284 Instrument H



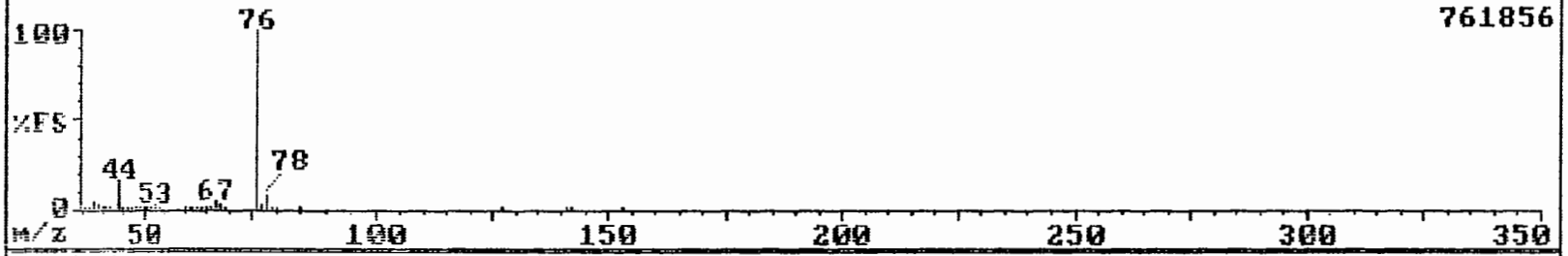
07-08-97 23:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 4 TUBEA/B T/TC 173-46-4A/B TLI#42284 Instrument H

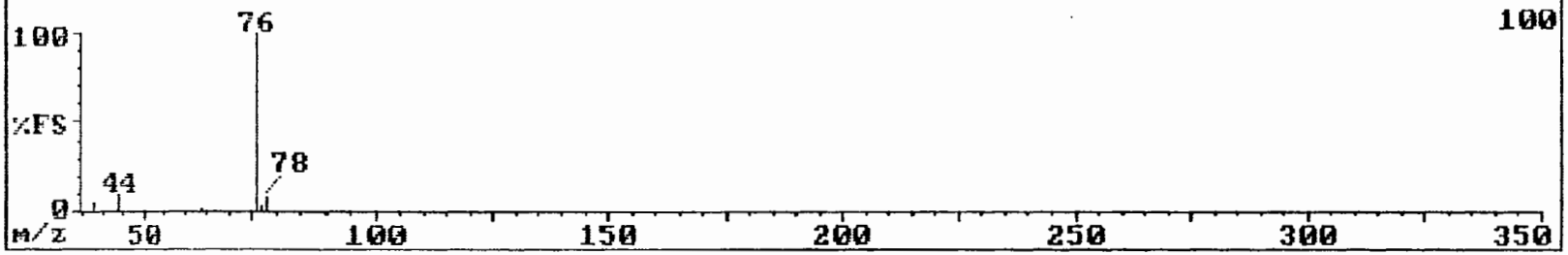
HS354 249 (2.490) 774144



HS354 249 (2.491) REFINE 761856

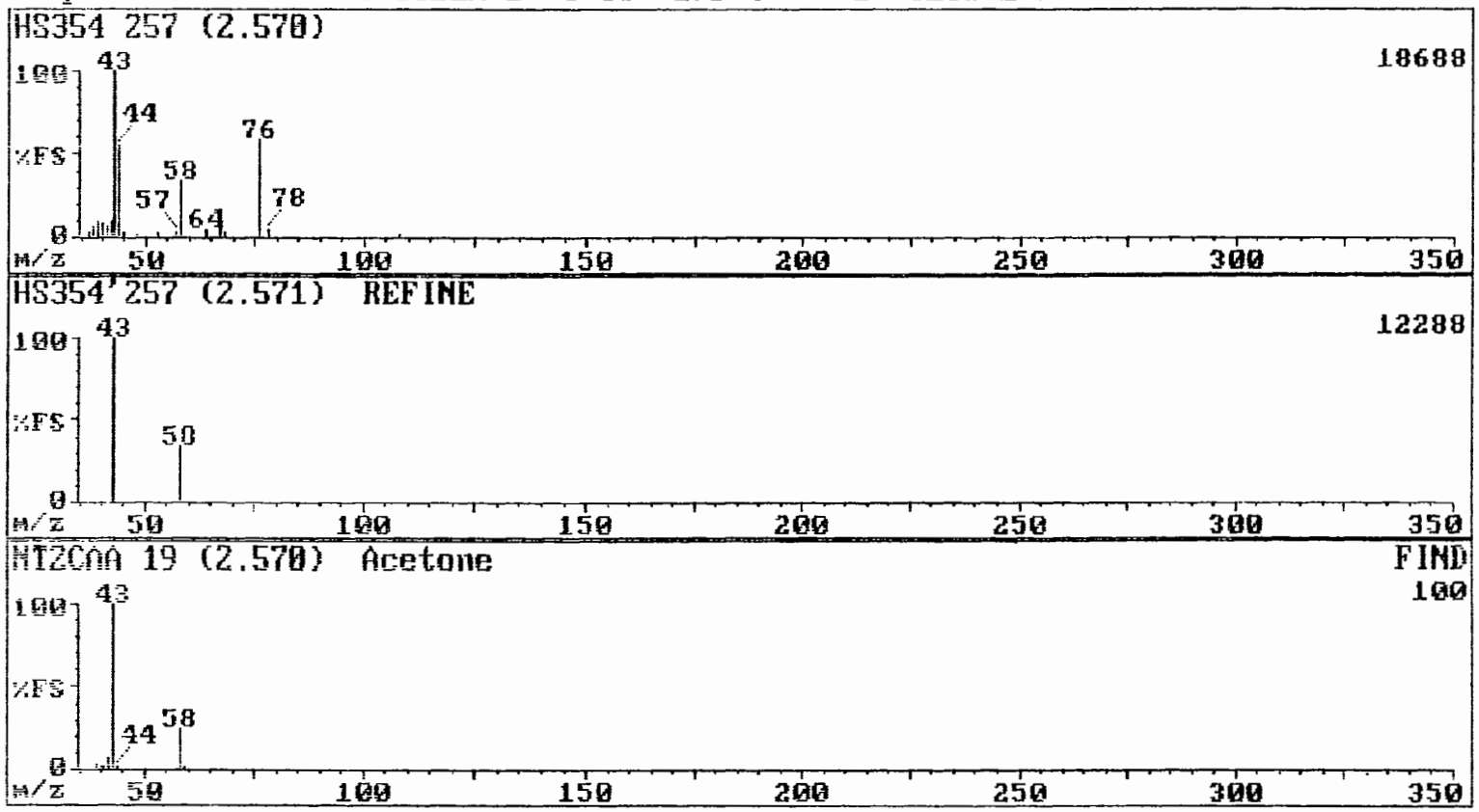


NTZCAA 18 (2.500) Carbon disulfide FIND 100



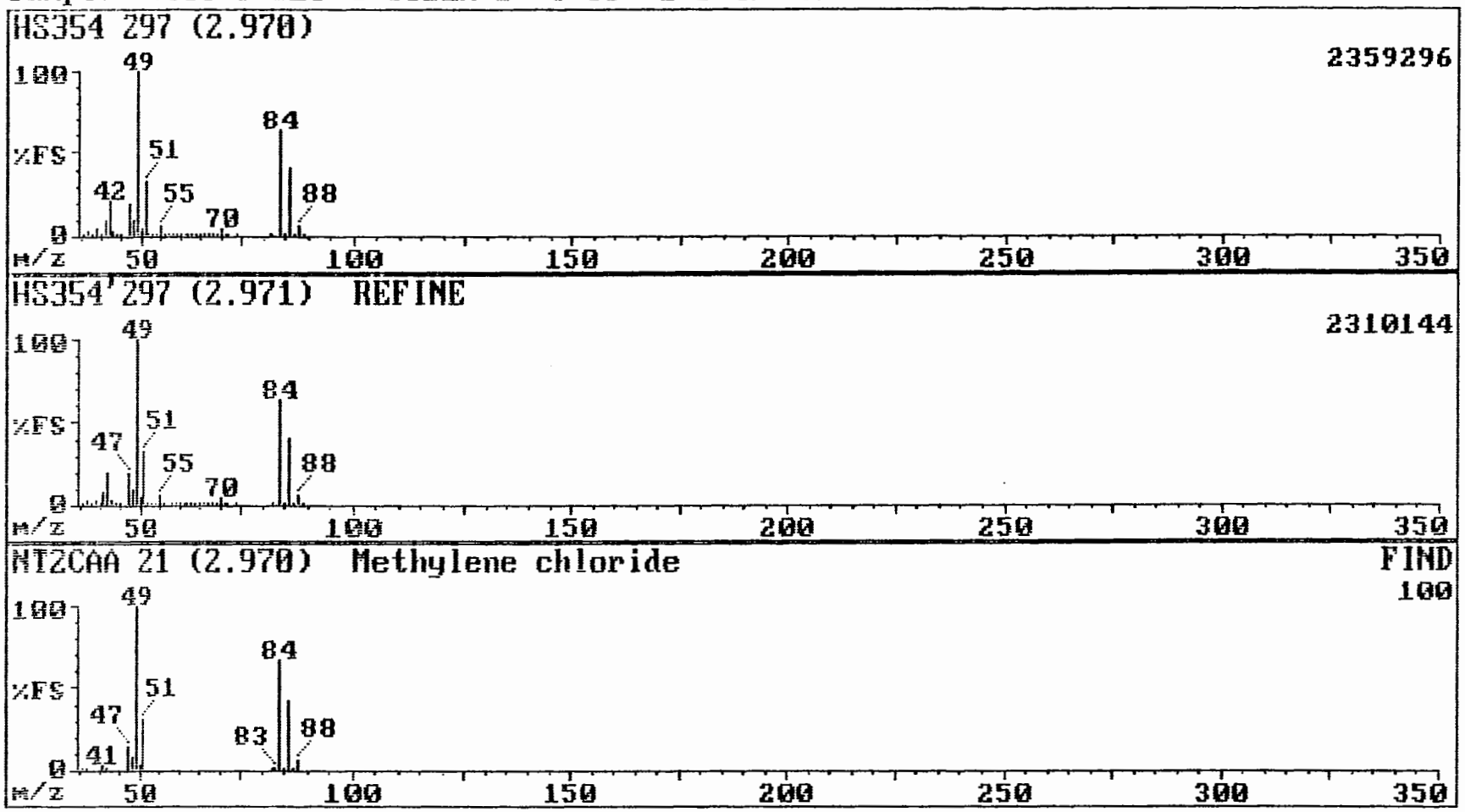
07-08-97 23:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 4 TUBEA/B T/TC 173-46-4A/B TLI#42284 Instrument H



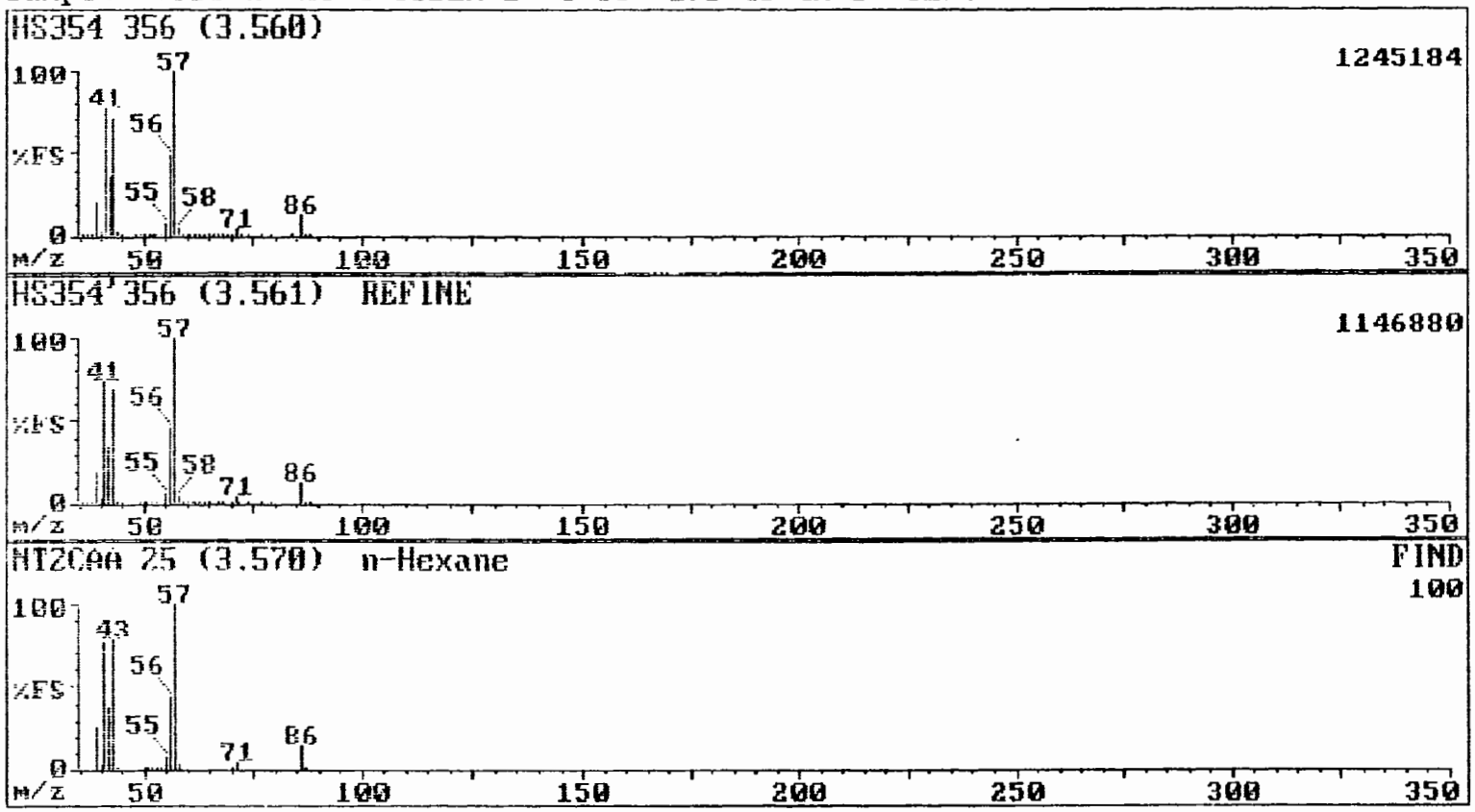
07-08-97 23:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 4 TUBEA/B T/TC 173-46-4A/B TLI#42284 Instrument H



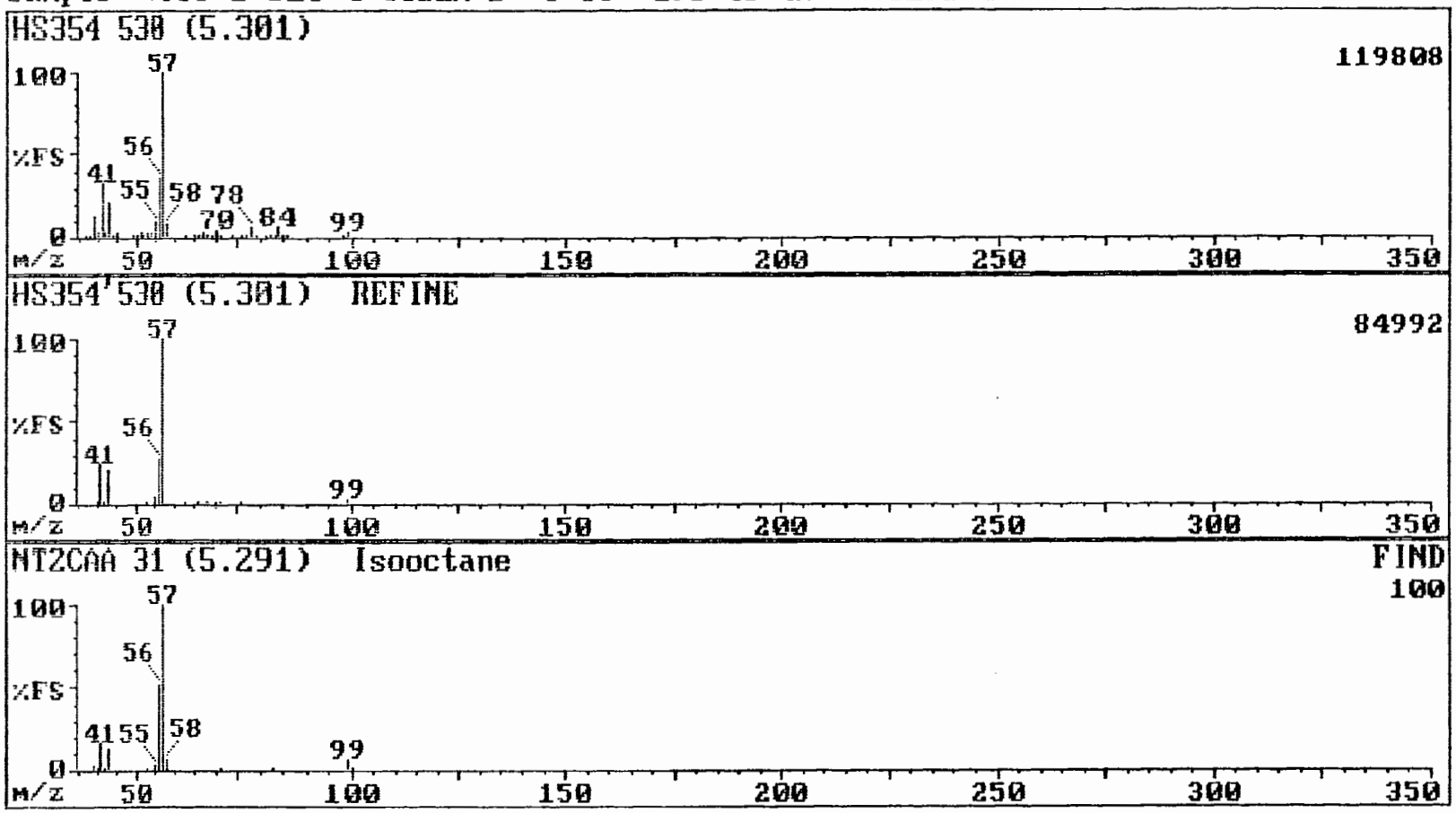
07-08-97 23:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 4 TUBEA/B T/TC 173-46-4A/B TLI#42284 Instrument H



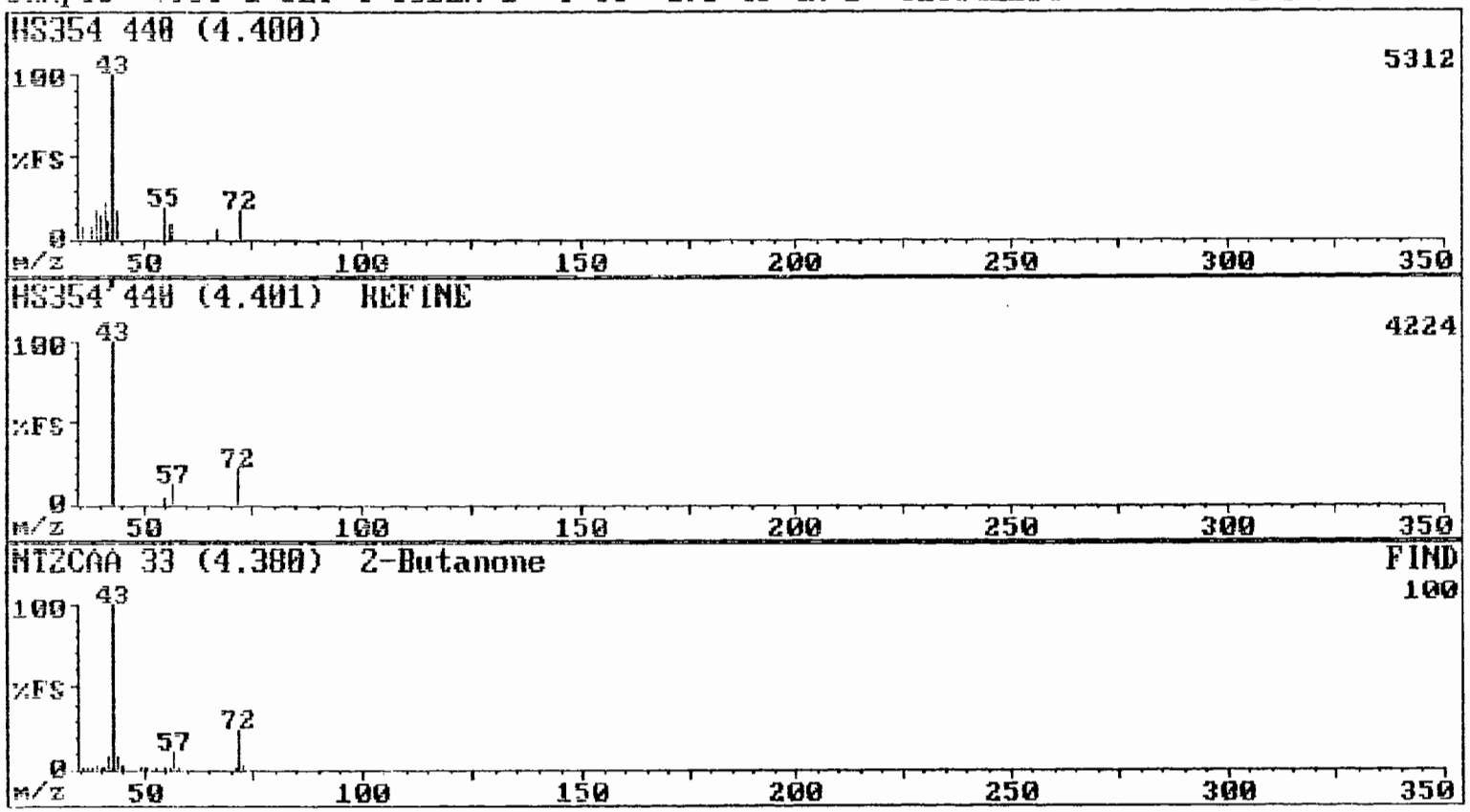
07-08-97 23:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 4 TUBEA/B T/TC 173-46-4A/B TLI#42284 Instrument H



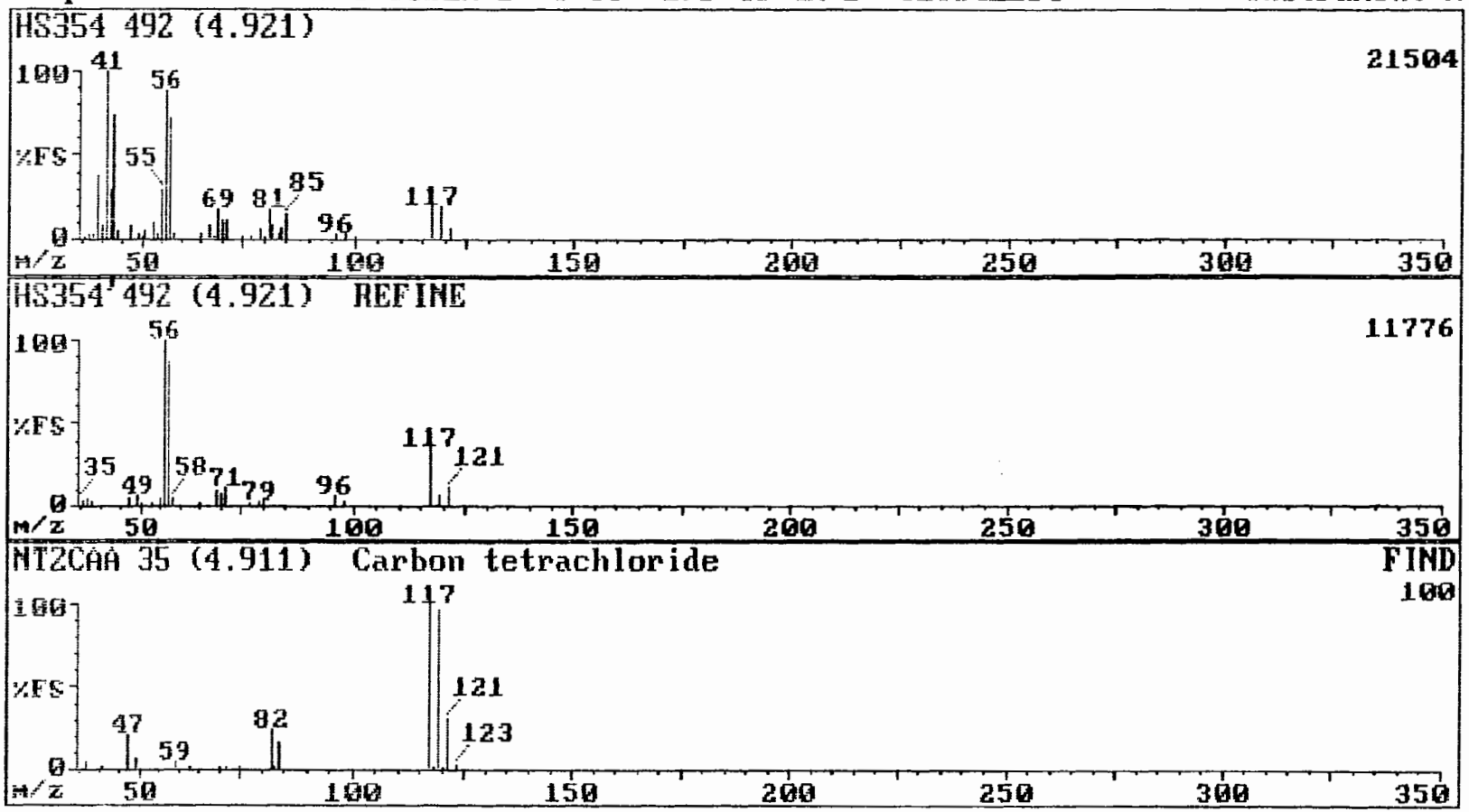
07-08-97 23:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 4 TUBEA/B T/TC 173-46-4A/B TLI#42284 Instrument H



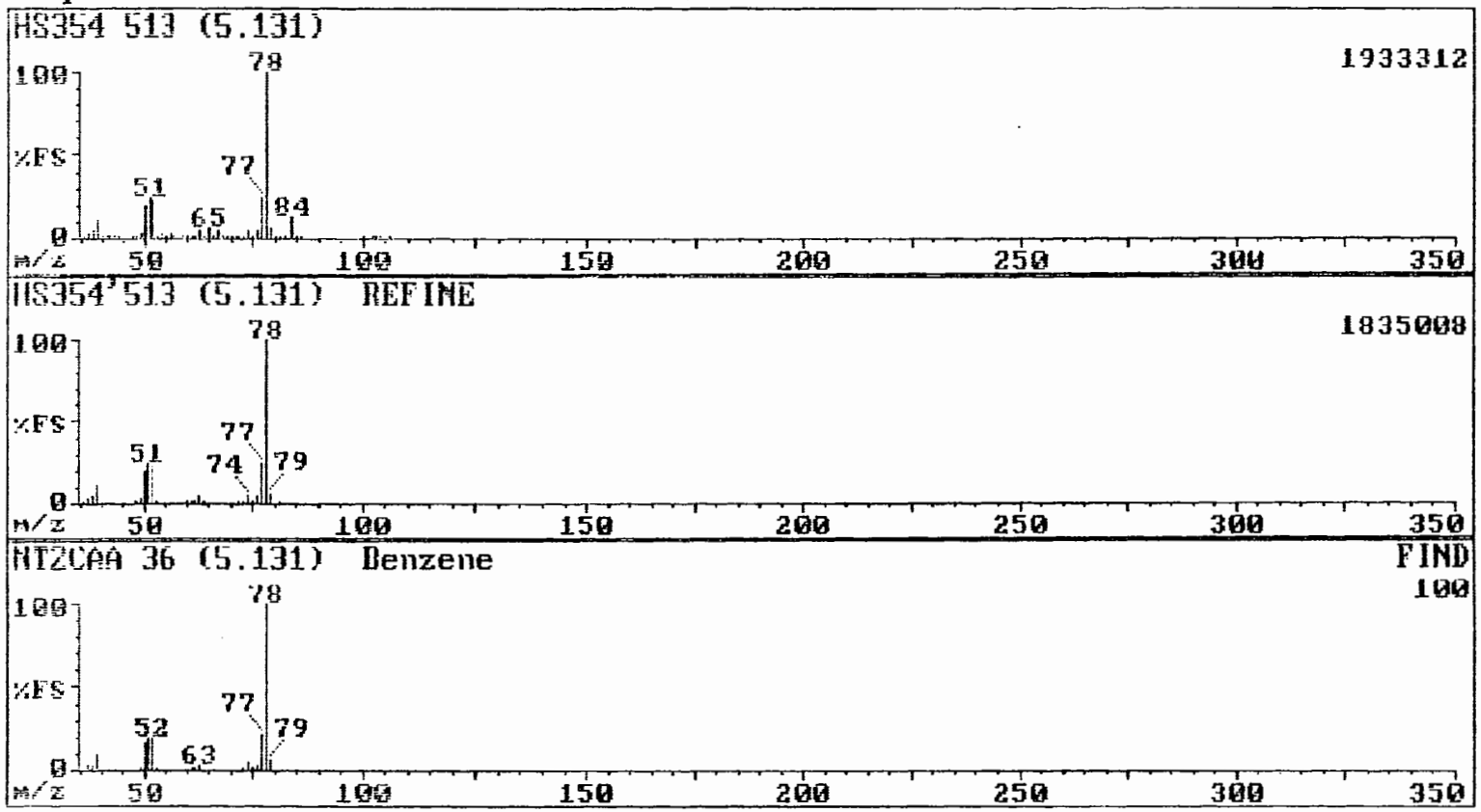
07-08-97 23:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 4 TUBEA/B T/TC 173-46-4A/B TLI#42284 Instrument H



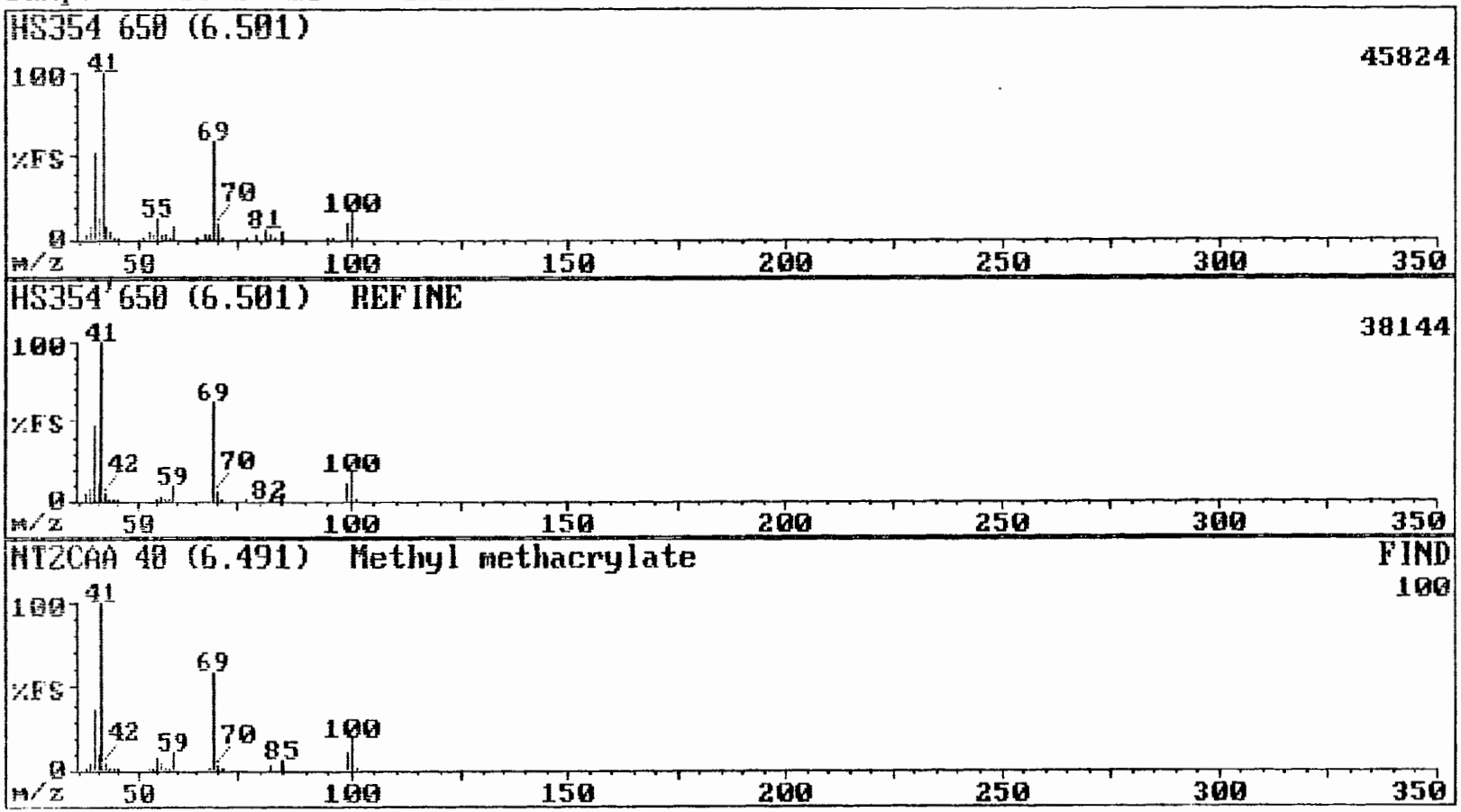
07-08-97 23:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 4 TUBEA/B T/TC 173-46-4A/B TLI#42284 Instrument H



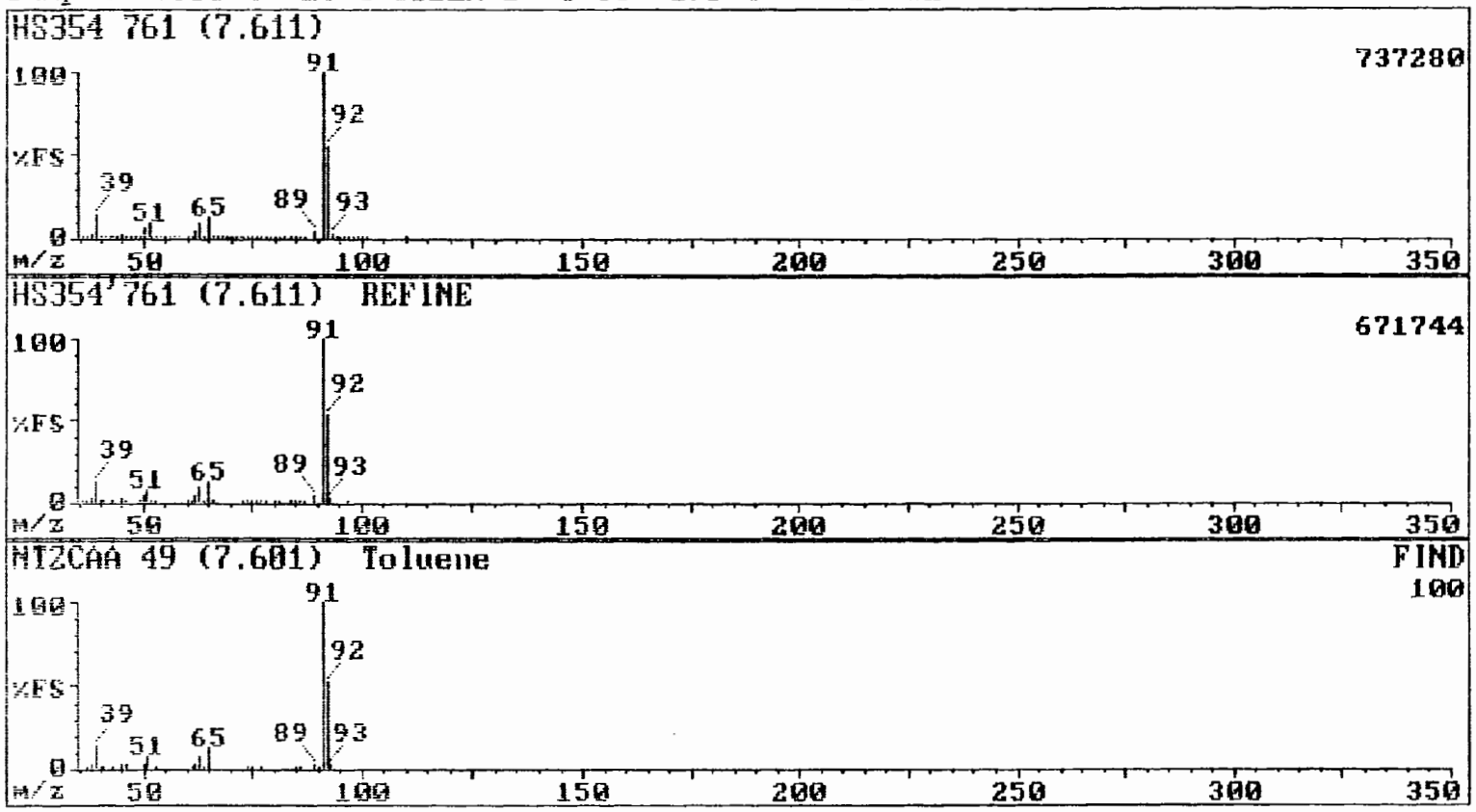
07-08-97 23:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 4 TUBEA/B T/TC 173-46-4A/B TLI#42284 Instrument H



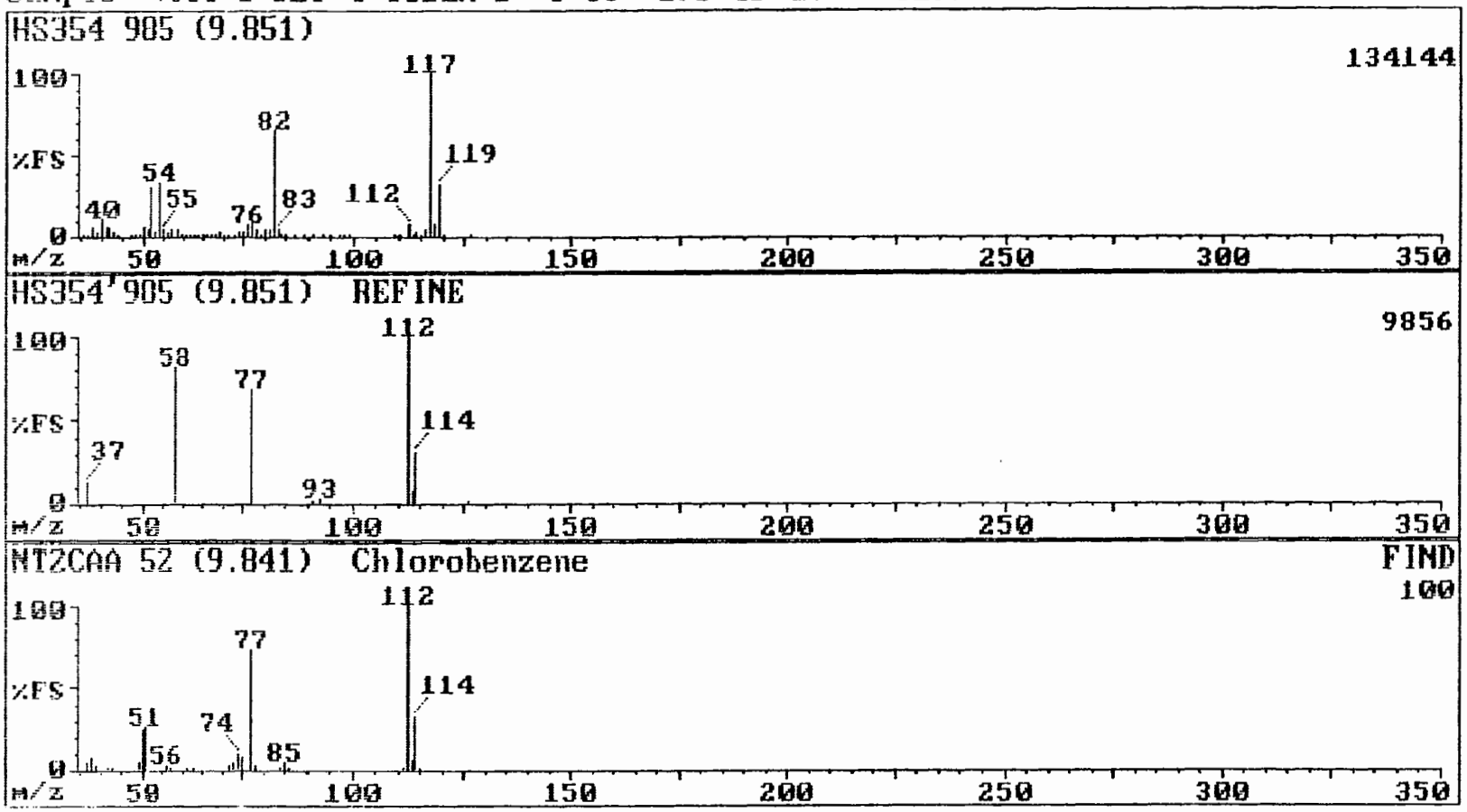
07-08-97 23:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 4 TUBEA/B T/TC 173-46-4A/B TLI#42284 Instrument H



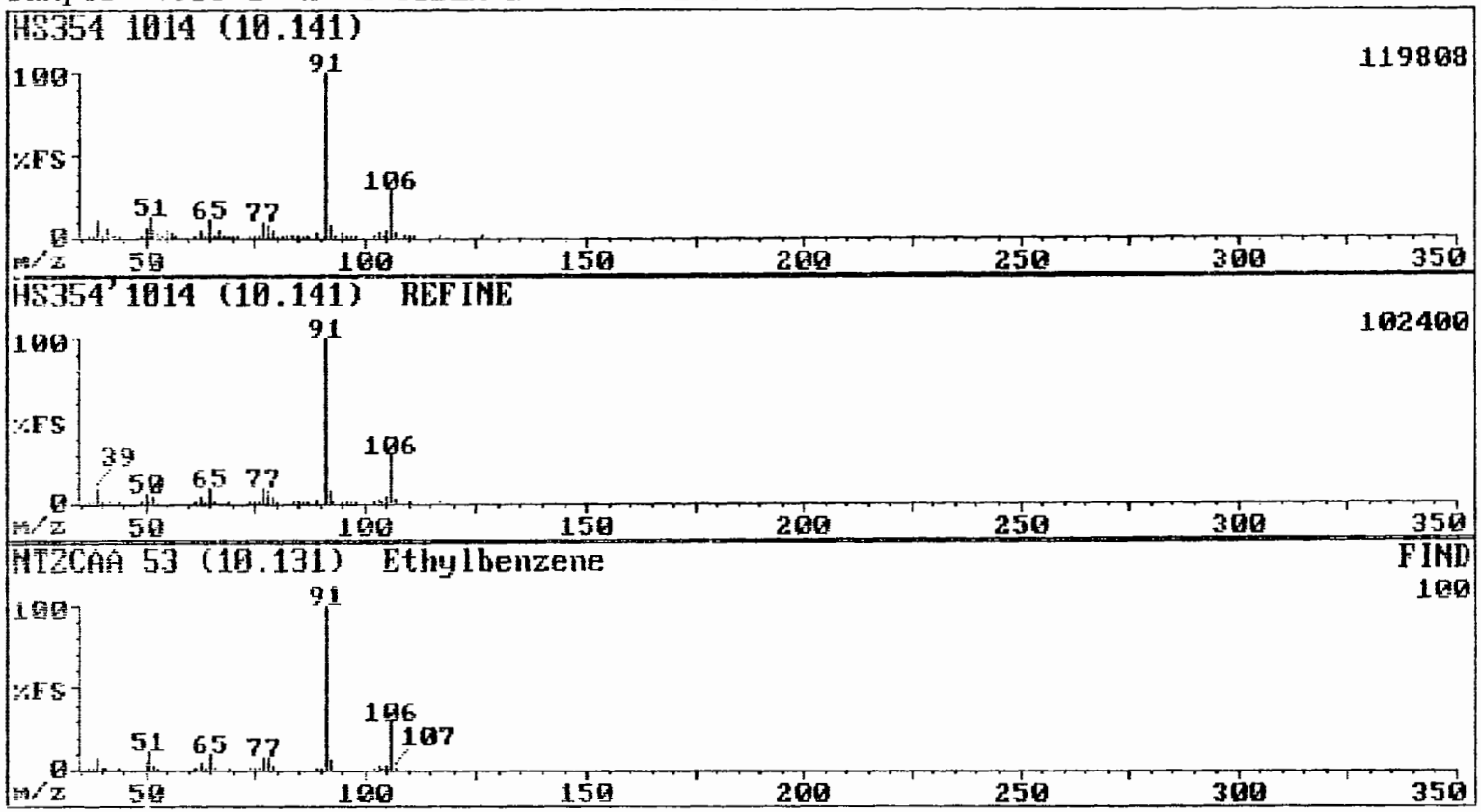
07-08-97 23:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 4 TUBEA/B T/TC 173-46-4A/B TLI#42284 Instrument H



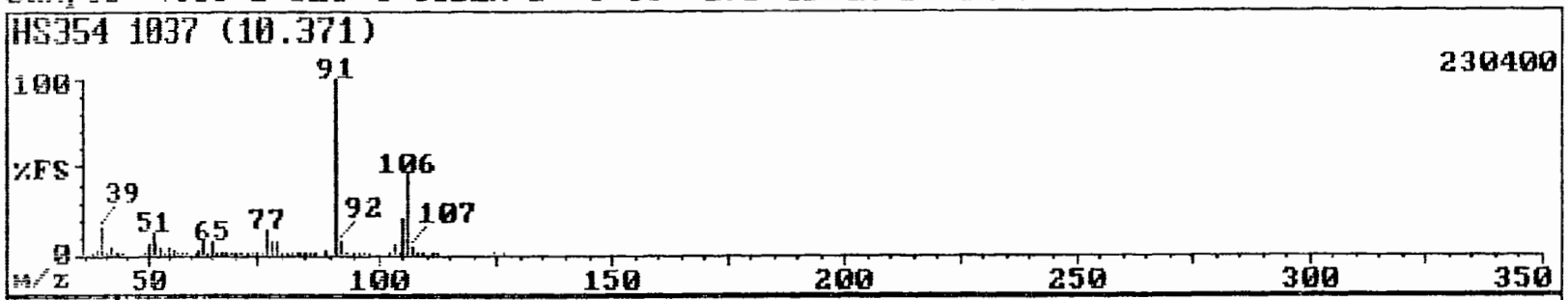
07-08-97 23:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

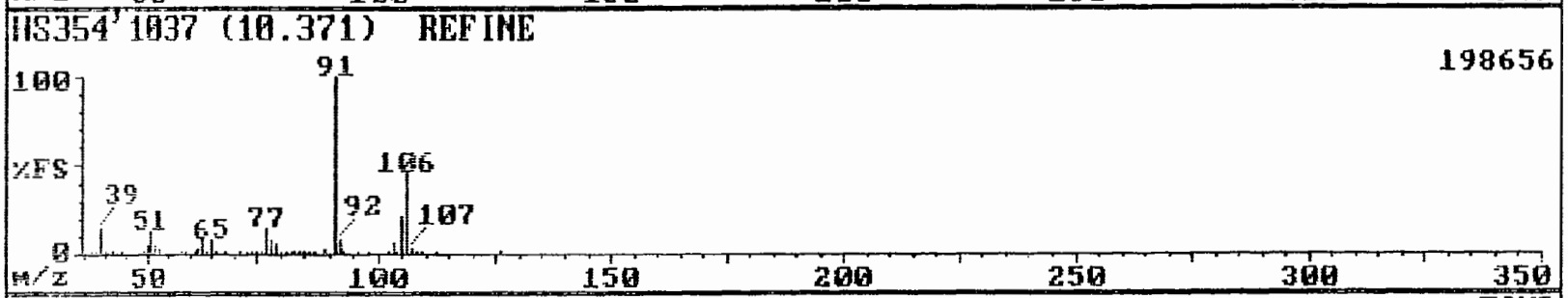
Sample: VOST-1 SET 4 TUBEA/B T/TC 173-46-4A/B TLI#42284 Instrument H

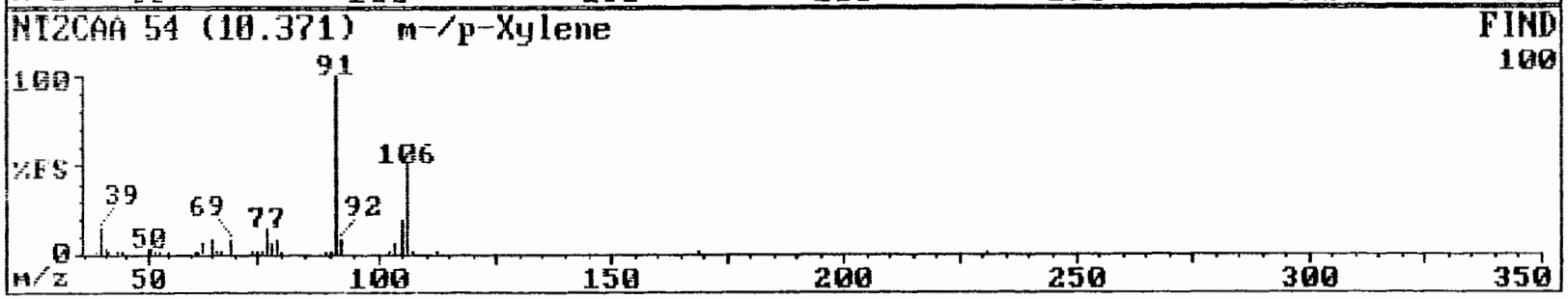


07-08-97 23:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 4 TUBEA/B T/TC 173-46-4A/B TLI#42284 Instrument H

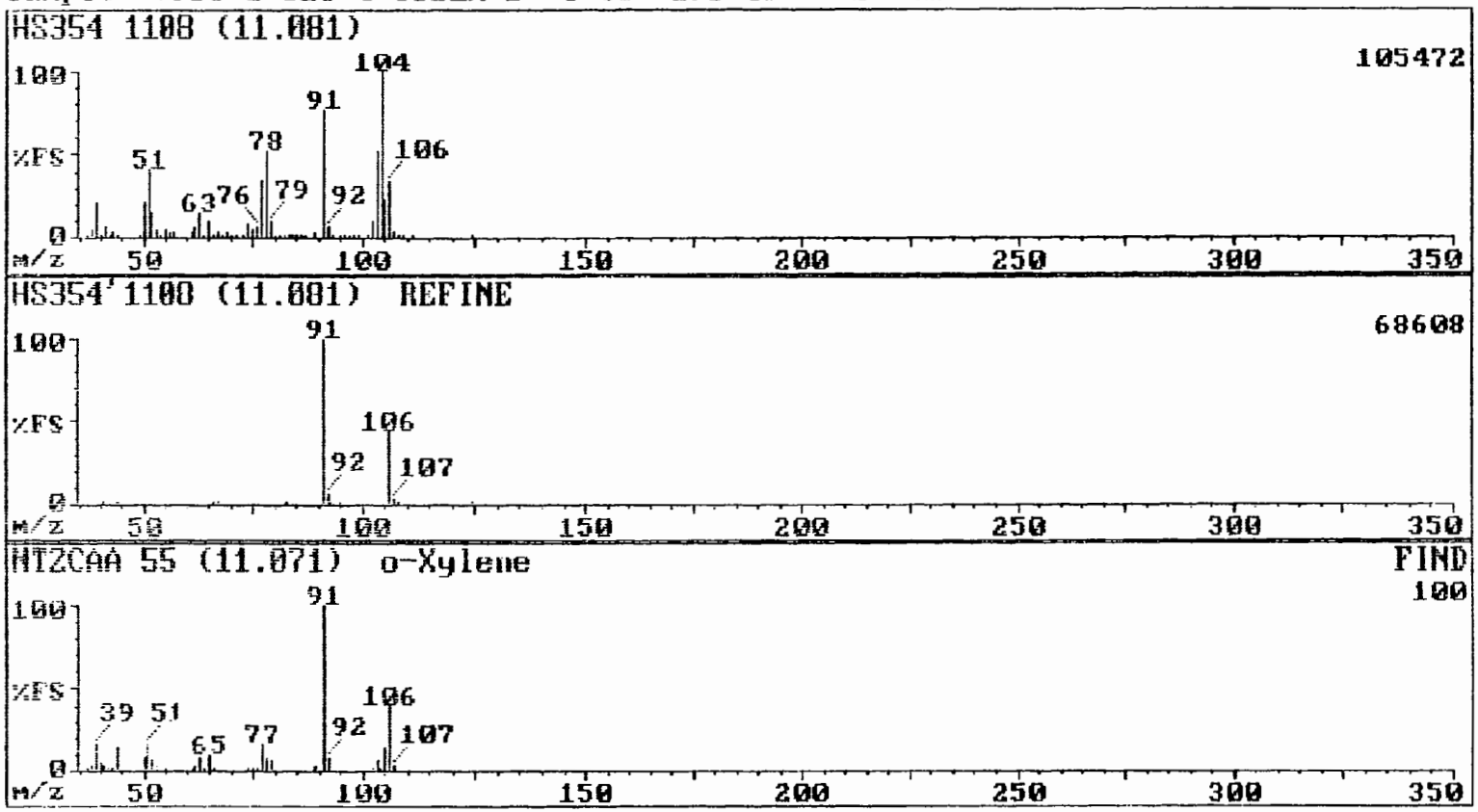






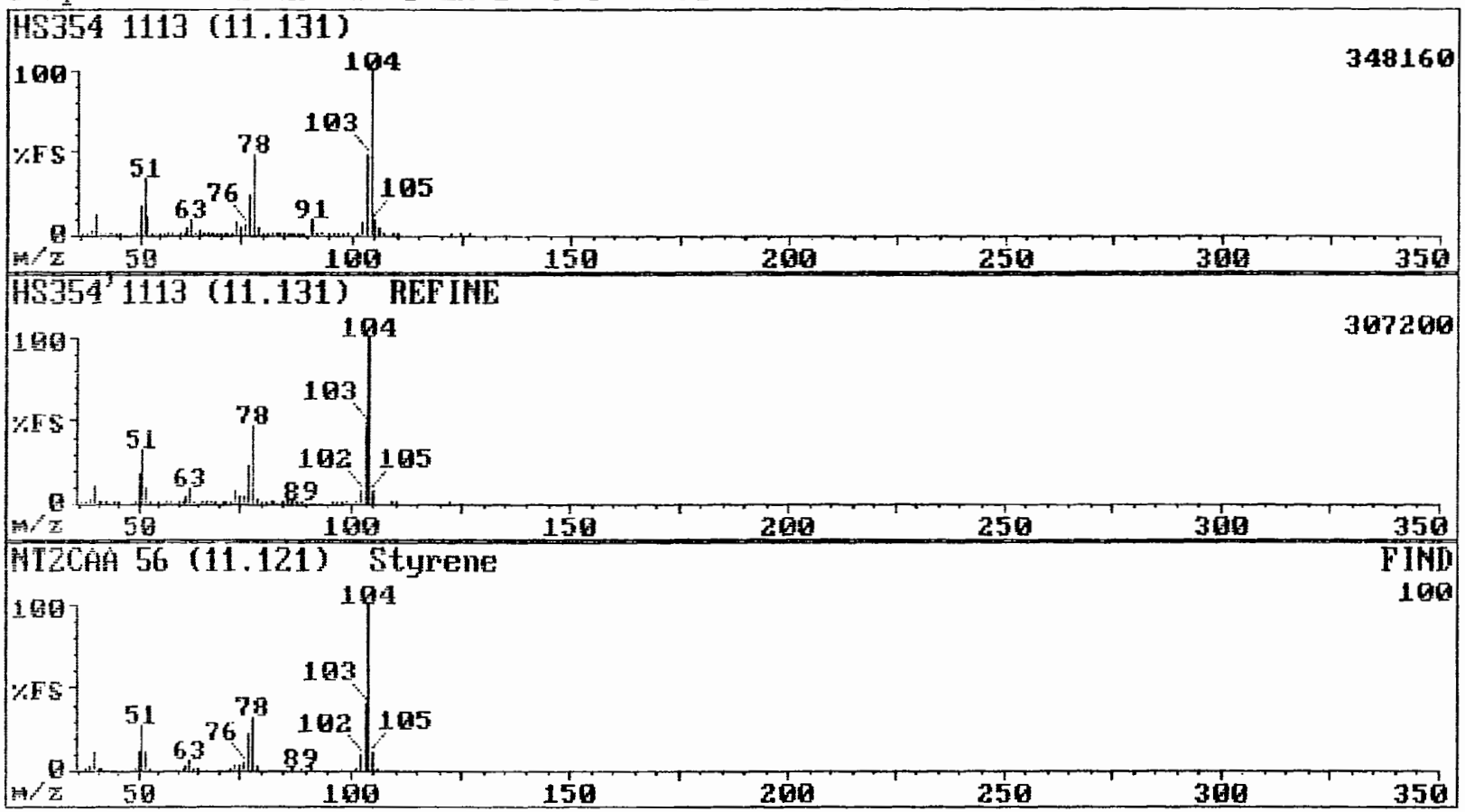
07-08-97 23:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 4 TUBEA/B T/TC 173-46-4A/B TLI#42284 Instrument H



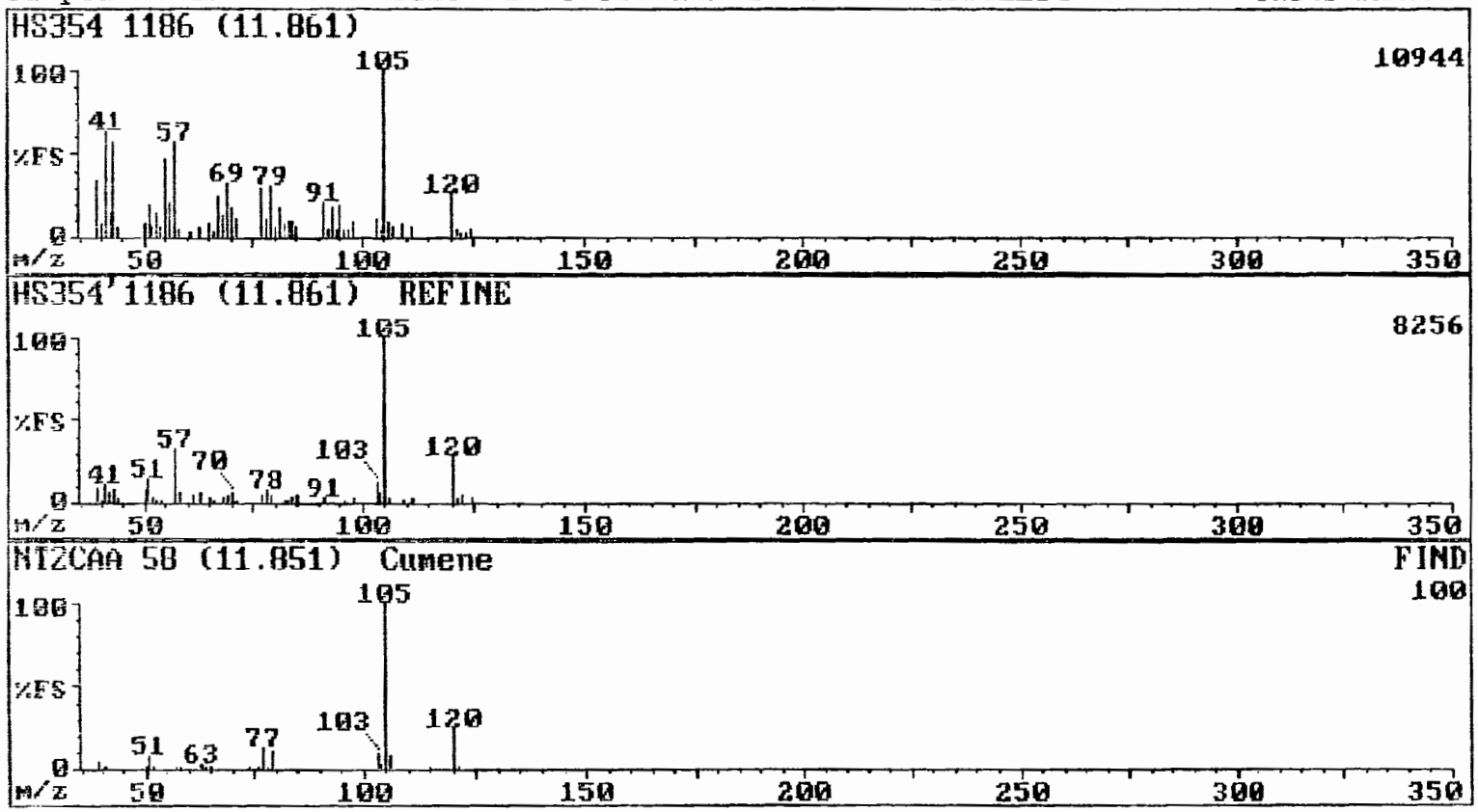
07-08-97 23:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 4 TUBEA/B T/TC 173-46-4A/B TLI#42284 Instrument H

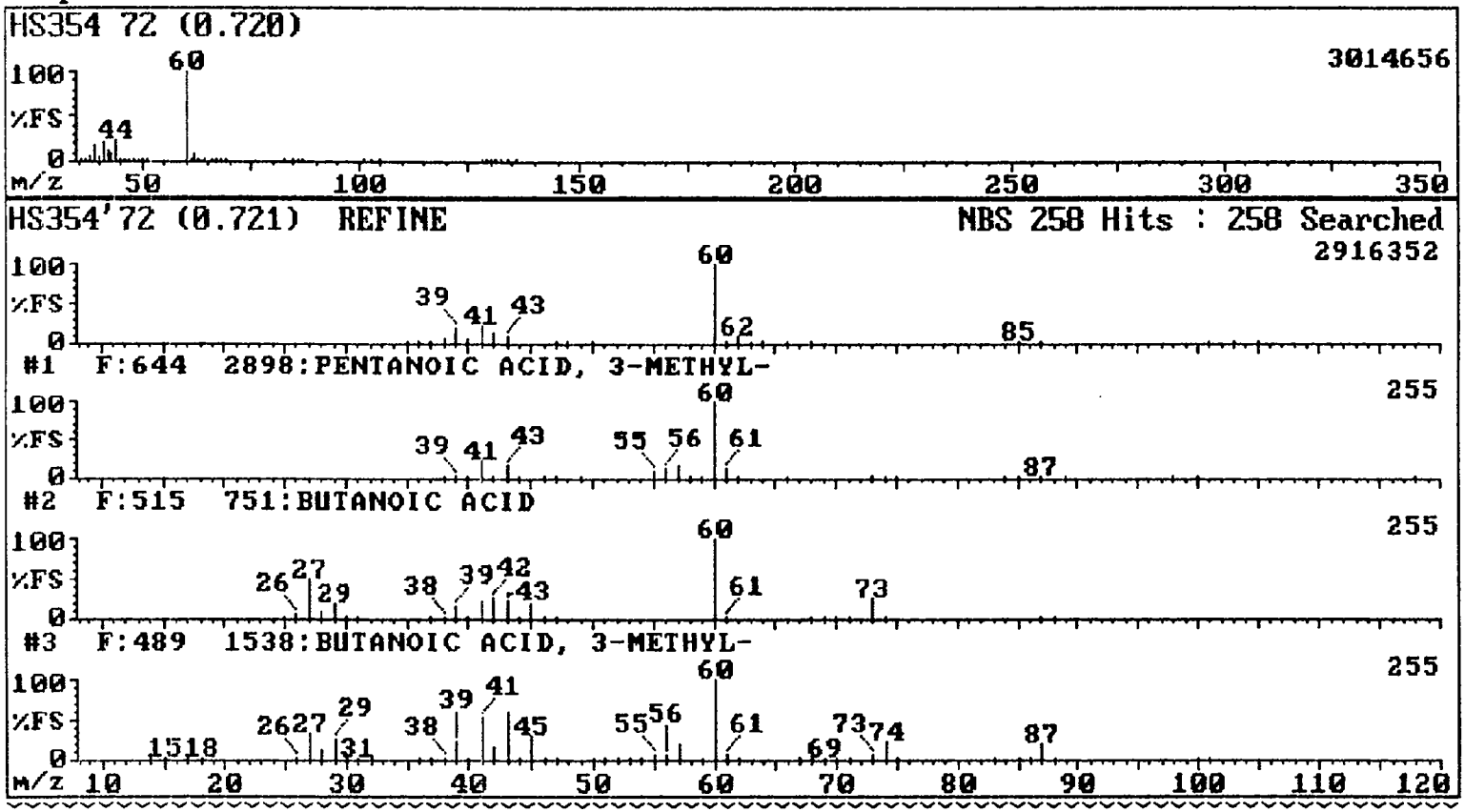


07-08-97 23:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 4 TUBEA/B T/TC 173-46-4A/B TLI#42284 Instrument H



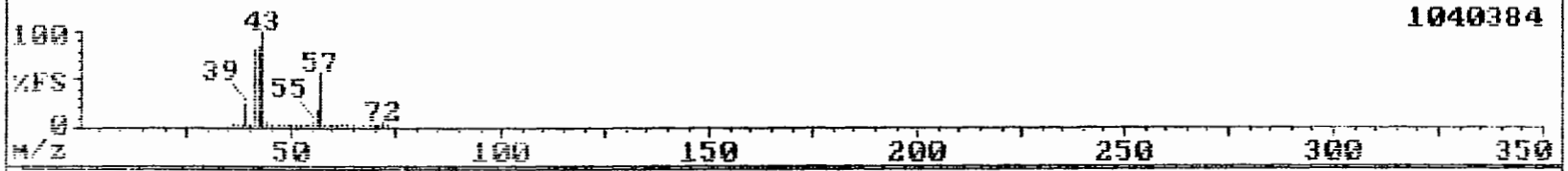
08-Jul-97 23:07 Triangle Laboratories of RTP, Inc. (919) 544-5729
Sample: VOST-1 SET 4 TUBEA/B T/TC 173-46-4A/B TLI#42284 Instrument H



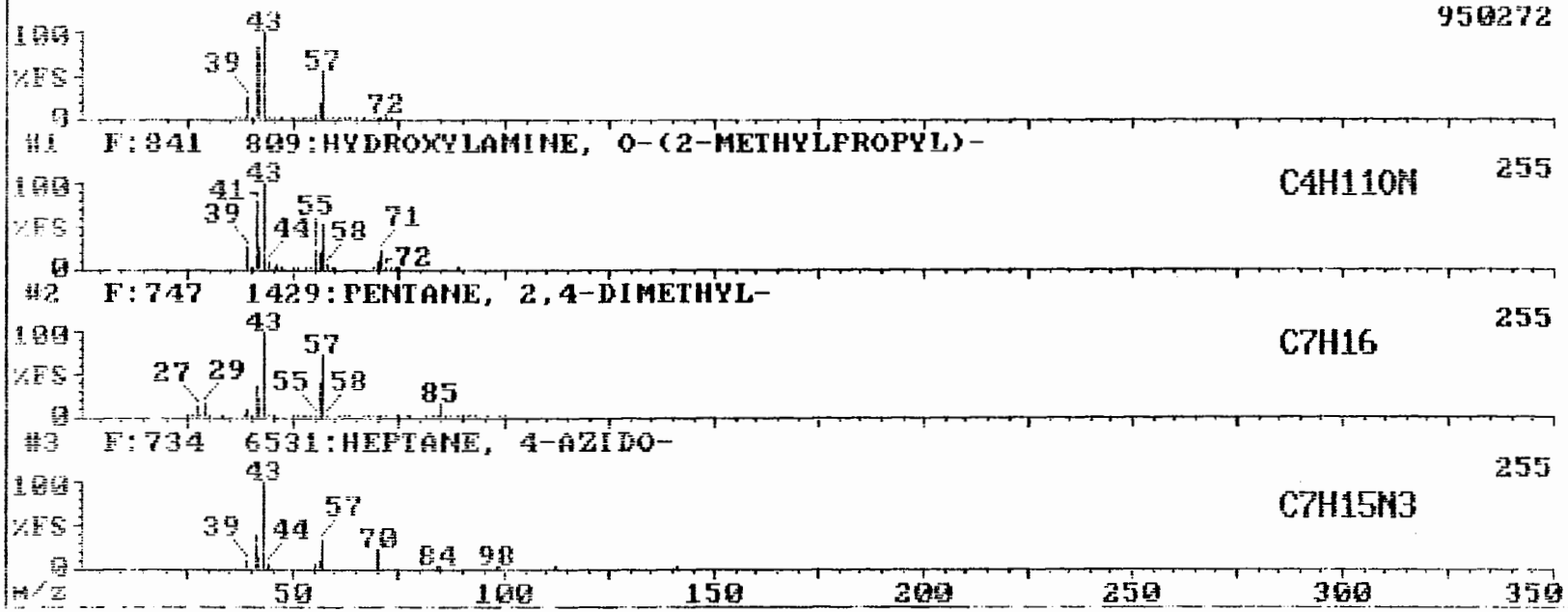
07/08/97 23:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 4 TUBEA/B T/TC 173-46-4A/B TLI#42284 Instrument: H

HS354 162 (1.620) NBS 1040384

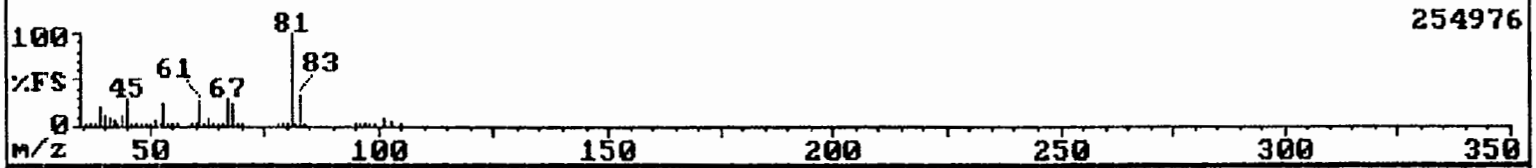


HS354'162 (1.621) REFINE NBS 242 Hits : 242 Searched 950272

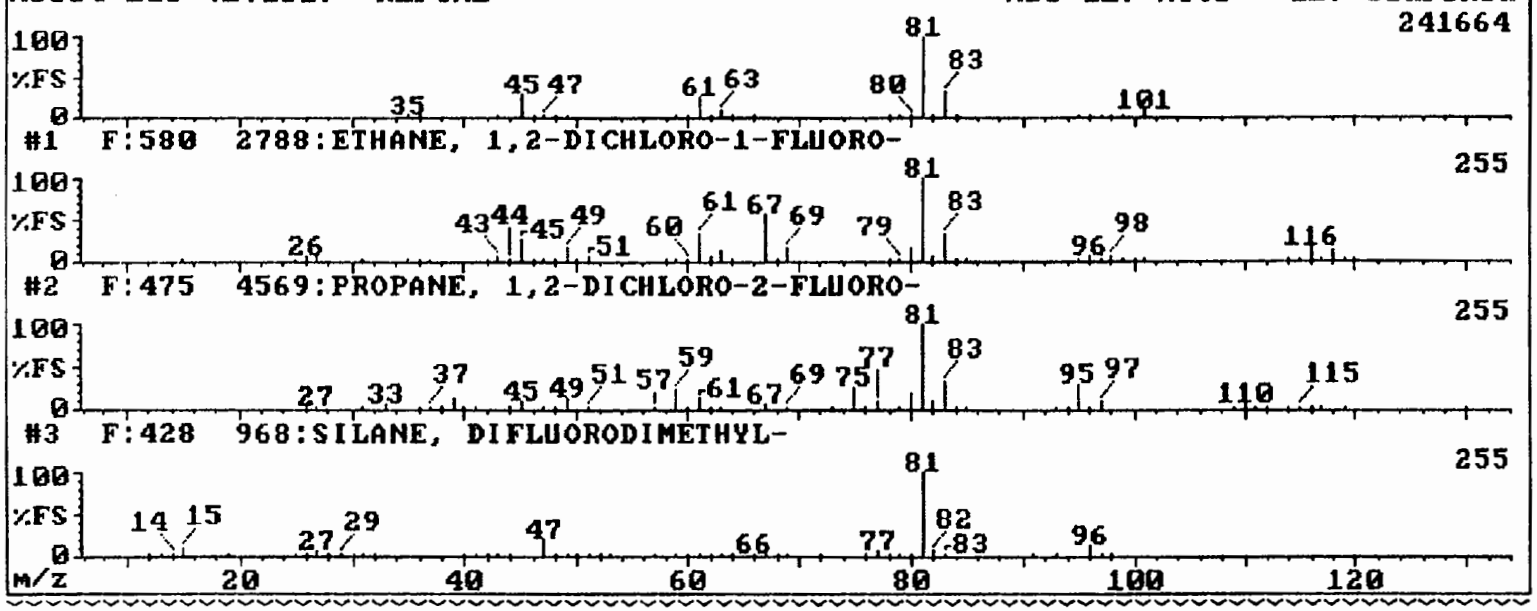


08-Jul-97 23:07 Triangle Laboratories of RTP, Inc. (919) 544-5729
Sample: VOST-1 SET 4 TUBEA/B T/TC 173-46-4A/B TLI#42284 Instrument H

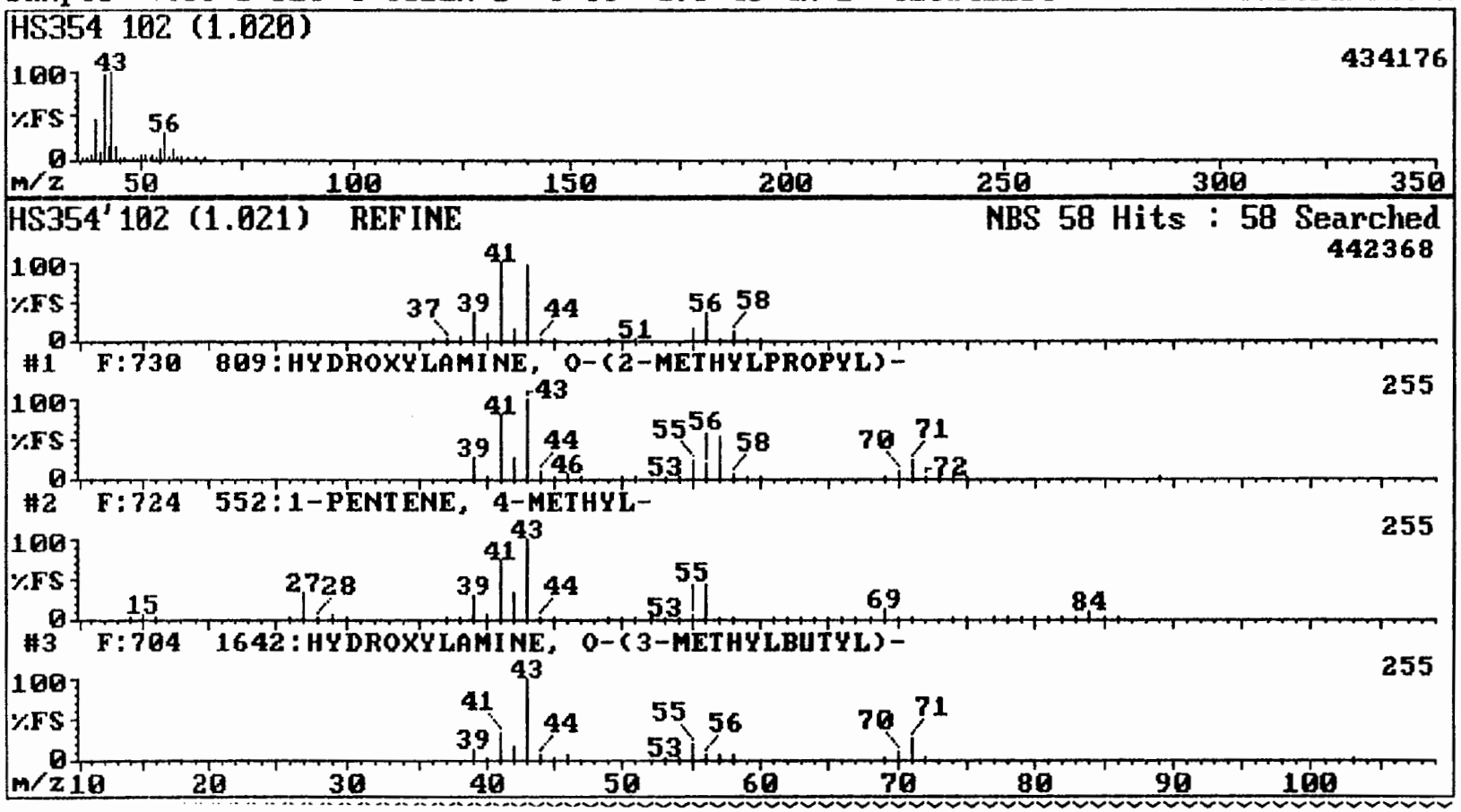
HS354 216 (2.160) 254976



HS354'216 (2.161) REFINE NBS 127 Hits : 127 Searched

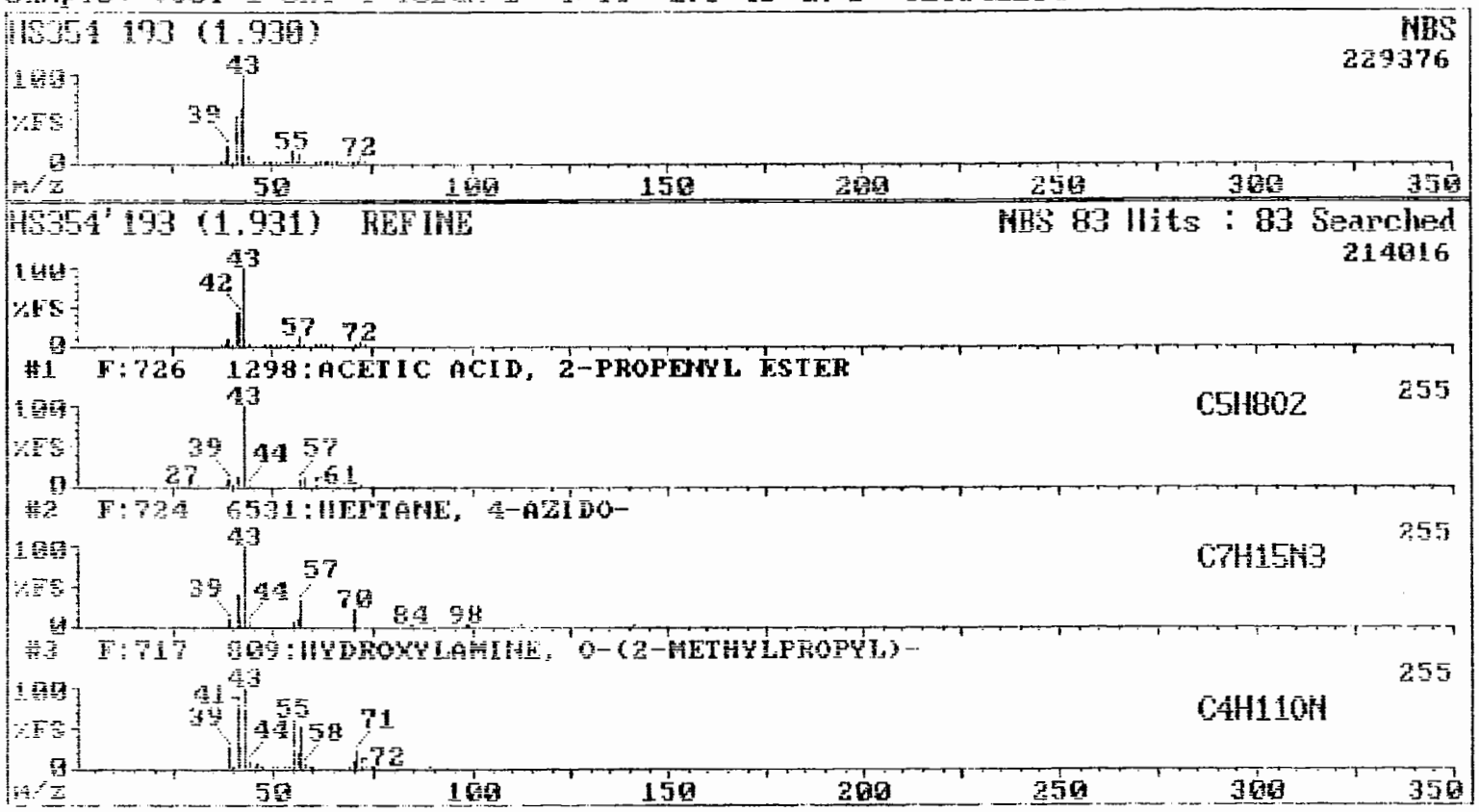


08-Jul-97 23:07 Triangle Laboratories of RTP, Inc. (919) 544-5729
Sample: VOST-1 SET 4 TUBEA/B T/TC 173-46-4A/B TLI#42284 Instrument H



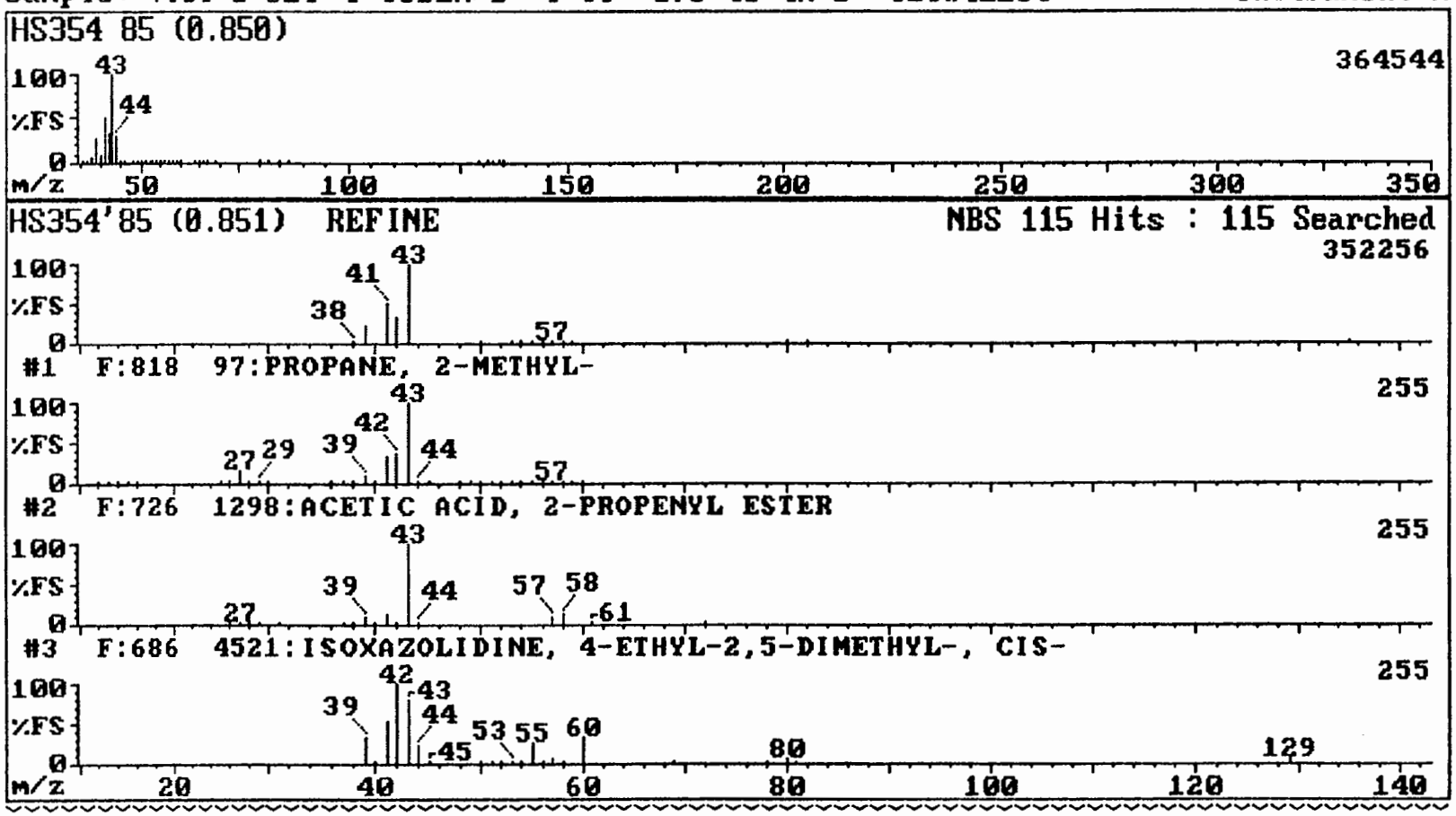
07/00/97 23:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 4 TUBEA/B T/TC 173-46-4A/B TLI#42284 Instrument: H



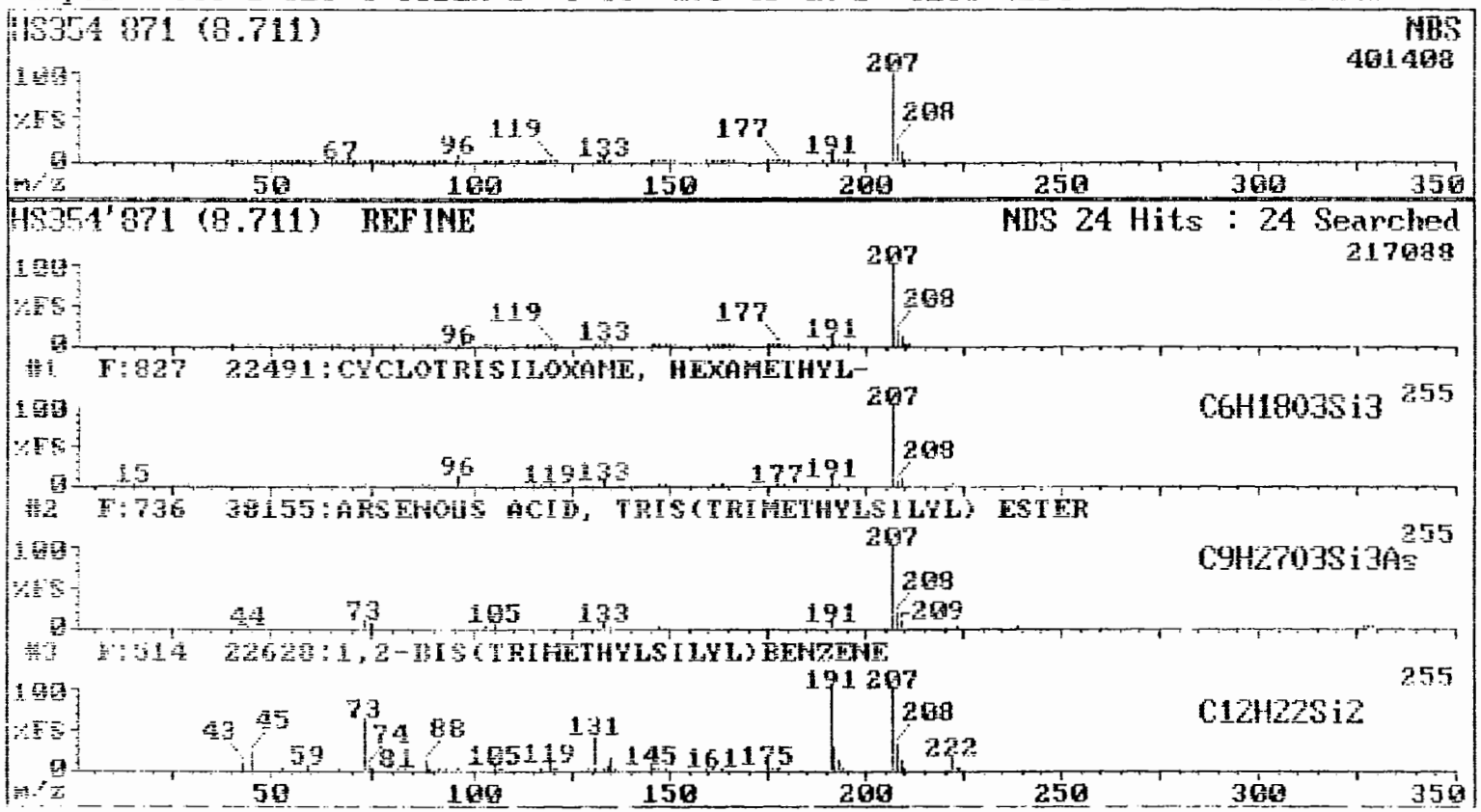
08-Jul-97 23:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 4 TUBEA/B T/TC 173-46-4A/B TLI#42284 Instrument H



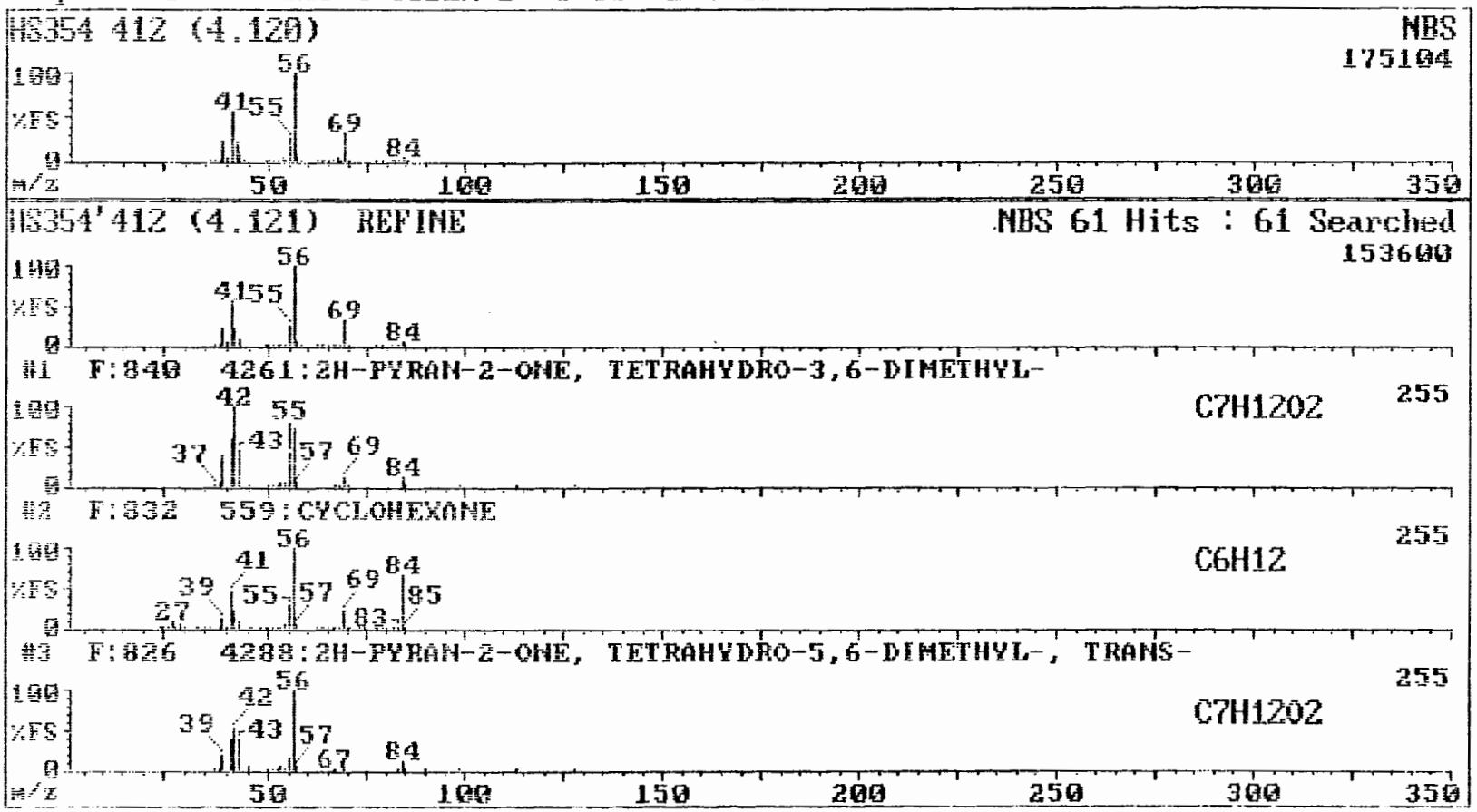
07/08/97 23:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 4 TUBEA/B T/TC 173-46-4A/B TLI#42284 Instrument: H



07/08/97 23:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

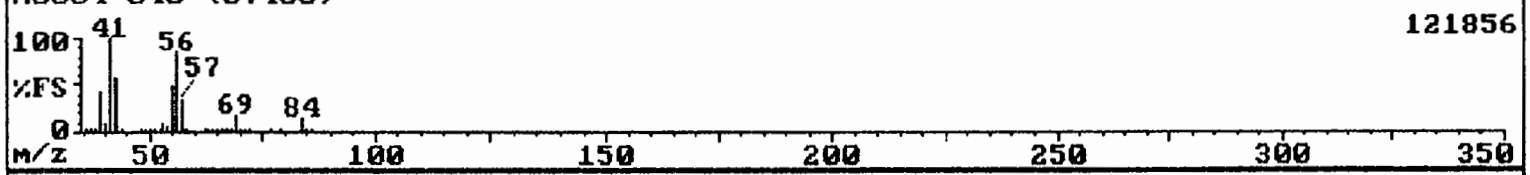
Sample: VOST-1 SET 4 TUBEA/B T/TC 173-46-4A/B TLI#42284 Instrument: H



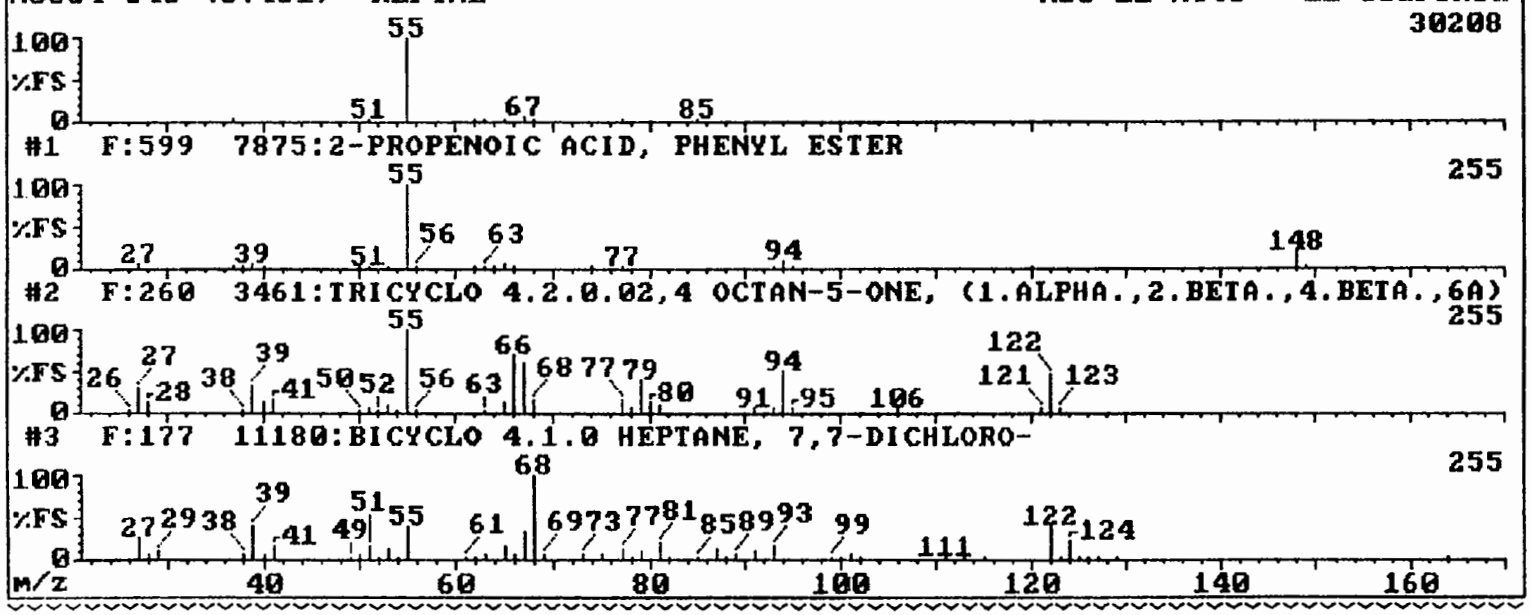
08-Jul-97 23:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-1 SET 4 TUBEA/B T/TC 173-46-4A/B TLI#42284 Instrument H

HS354 348 (3.480)



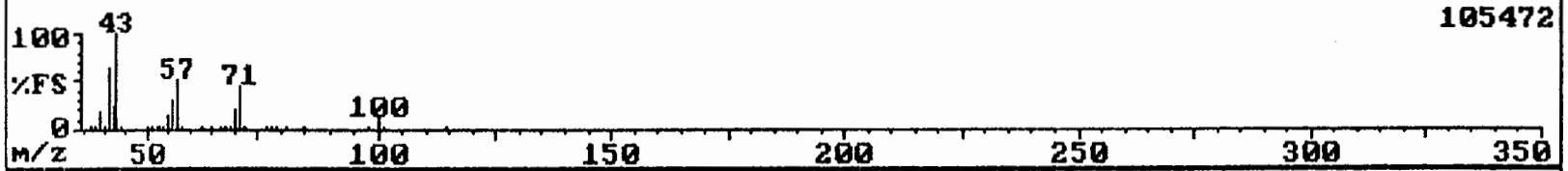
HS354'348 (3.481) REFINE NBS 22 Hits : 22 Searched



08-Jul-97 23:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

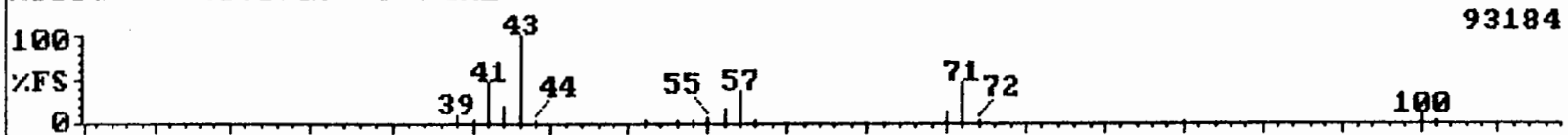
Sample: VOST-1 SET 4 TUBEA/B T/TC 173-46-4A/B TLI#42284 Instrument H

HS354 557 (5.571) 105472



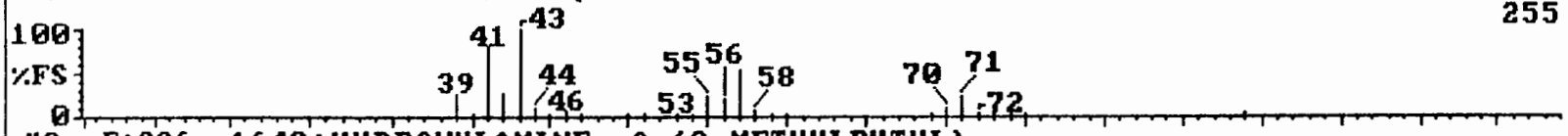
HS354'557 (5.571) REFINE NBS 133 Hits : 133 Searched

93184



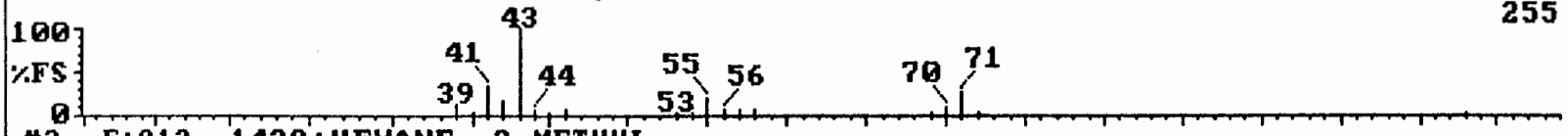
#1 F:855 809:HYDROXYLAMINE, O-(2-METHYLPROPYL)-

255



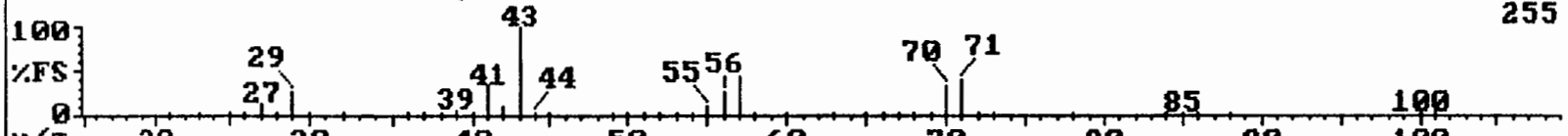
#2 F:836 1642:HYDROXYLAMINE, O-(3-METHYLBUTYL)-

255



#3 F:813 1428:HEXANE, 3-METHYL-

255



Pacific Environmental Services

Project Number: 42284 | Method 8240A VOST
Sample File: HS355 | Sample ID: VOST-2 SET 1 TUBEA/B T/TC

Client Project: S407-003 | Date Received: 06/30/97 | Response File: ICALH708
TLI ID: 173-46-6A,B
Date Analyzed : 07/08/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ng
Bromochloromethane		IS 1	4.51		
Chloromethane	0.217		0.93		0.05
Vinyl Chloride		U		0.001	0.05
1,3-Butadiene	0.112		1.06		0.05
Bromomethane	0.022	J	1.43		0.05
Chloroethane	0.009	J	1.80		0.05
Vinyl bromide		U		0.001	0.05
Trichlorofluoromethane	0.074		1.84		0.05
1,1-Dichloroethene		U		0.001	0.05
Iodomethane		U		0.001	0.05
Carbon disulfide	0.419		2.51		0.05
Acetone	0.059	B	2.58		0.05
Allyl chloride		U		0.001	0.05
Methylene chloride	1.264	BE	2.98		0.05
trans-1,2-Dichloroethene		U		0.001	0.05
tert-Butyl methyl ether		U		0.001	0.05
Acrylonitrile		U		0.003	0.05
n-Hexane	0.814		3.57		0.05
1,1-Dichloroethane		U		0.001	0.05
1,2-Epoxybutane		U		0.003	0.05
cis-1,2-Dichloroethene		U		0.001	0.05
Chloroform		U		0.001	0.05
1,2-Dichloroethane		U		0.001	0.05
Isooctane	0.038	J	5.30		0.05
1,4-Difluorobenzene		IS 2	5.67		
Vinyl acetate		U		0.001	0.05

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

Triangle Laboratories of RTP, Inc.
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

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Pacific Environmental Services

Project Number: 42284 | Method 8240A VOST
Sample File: HS355 | Sample ID: VOST-2 SET 1 TUBEA/B T/TC

Client Project: S407-003 | Date Received: 06/30/97 | Response File: ICALH708
TLI ID: 173-46-6A,B
Date Analyzed : 07/08/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
2-Butanone	0.016	J	4.41		0.05
1,1,1-Trichloroethane		U		0.001	0.05
Carbon tetrachloride		U		0.001	0.05
Benzene	1.743	BE	5.14		0.05
Trichloroethene		U		0.001	0.05
1,2-Dichloropropane		U		0.001	0.05
Ethyl acrylate		U		0.001	0.05
Methyl methacrylate	0.087		6.50		0.05
Bromodichloromethane		U		0.001	0.05
cis-1,3-Dichloropropene		U		0.001	0.05
trans-1,3-Dichloropropene		U		0.001	0.05
1,1,2-Trichloroethane		U		0.001	0.05
Dibromochloromethane		U		0.001	0.05
Ethylene dibromide		U		0.001	0.05
Bromoform		U		0.001	0.05
Chlorobenzene-d_5		IS 3	9.80		
4-Methyl-2-pentanone		U		0.001	0.05
Toluene	0.506	B	7.61		0.05
Tetrachloroethene		U		0.001	0.05
2-Hexanone		U		0.001	0.05
Chlorobenzene	0.004	J	9.85		0.05
Ethylbenzene	0.104		10.14		0.05
m-/p-Xylene	0.147		10.37		0.10
o-Xylene	0.080		11.08		0.05
Styrene	0.281		11.13		0.05
1,1,2,2-Tetrachloroethane		U		0.001	0.05

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Pacific Environmental Services

Project Number: 42284 | Method 8240A VOST
Sample File: HS355 | Sample ID: VOST-2 SET 1 TUBEA/B T/TC

Client Project: S407-003 | Date Received: 06/30/97 | Response File: ICALH708
TLI ID: 173-46-6A,B
Date Analyzed : 07/08/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
Cumene	0.006	J	11.85		0.05

Surrogate Summary	Amount (ug)	RT	IS Ref	%REC
1,2-Dichloroethane-d_4	0.282	5.12	1	113
Benzene-d_6	0.308	5.10	2	123
Toluene-d_8	0.294	7.52	3	118

Reviewed by TW Date 7/25/97

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

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Savar v3.5
Printed: 21:47 07/25/1997

Pacific Environmental Services

Project Number: 42284 Method 8240A
Sample File: HS355 Sample ID: VOST-2 SET 1 TUBEA/B T/TC

Client Project:	S407-003	Date Received:	06/30/97
TLI ID:	173-46-6A,B	Date Analyzed:	07/08/97
	Dilution Factor:	1.00	

Tentatively Identified Compounds

Name	RT	Area	IS RT	IS Area	Amount, ug
Unknown	0.721	35993156	4.511	5465039	1.647
Methylbutane Isomer	1.630	24938344	4.511	5465039	1.141
Sulfer Dioxide	0.891	15086964	4.511	5465039	0.690
C4H8 Isomer	1.011	14169553	4.511	5465039	0.648
C5H8 Isomer	2.200	12617491	4.511	5465039	0.577
Pentane	1.950	11730563	4.511	5465039	0.537
Methyl Propane Isomer	0.881	9653451	4.511	5465039	0.442
C7H16 Isomer	5.571	5770273	4.511	5465039	0.264
Tetrahydrodimethyl Pyranone Isomer	4.120	5525091	4.511	5465039	0.253
Hexamethylcyclotrisiloxane	8.711	11788115	9.811	12259760	0.240

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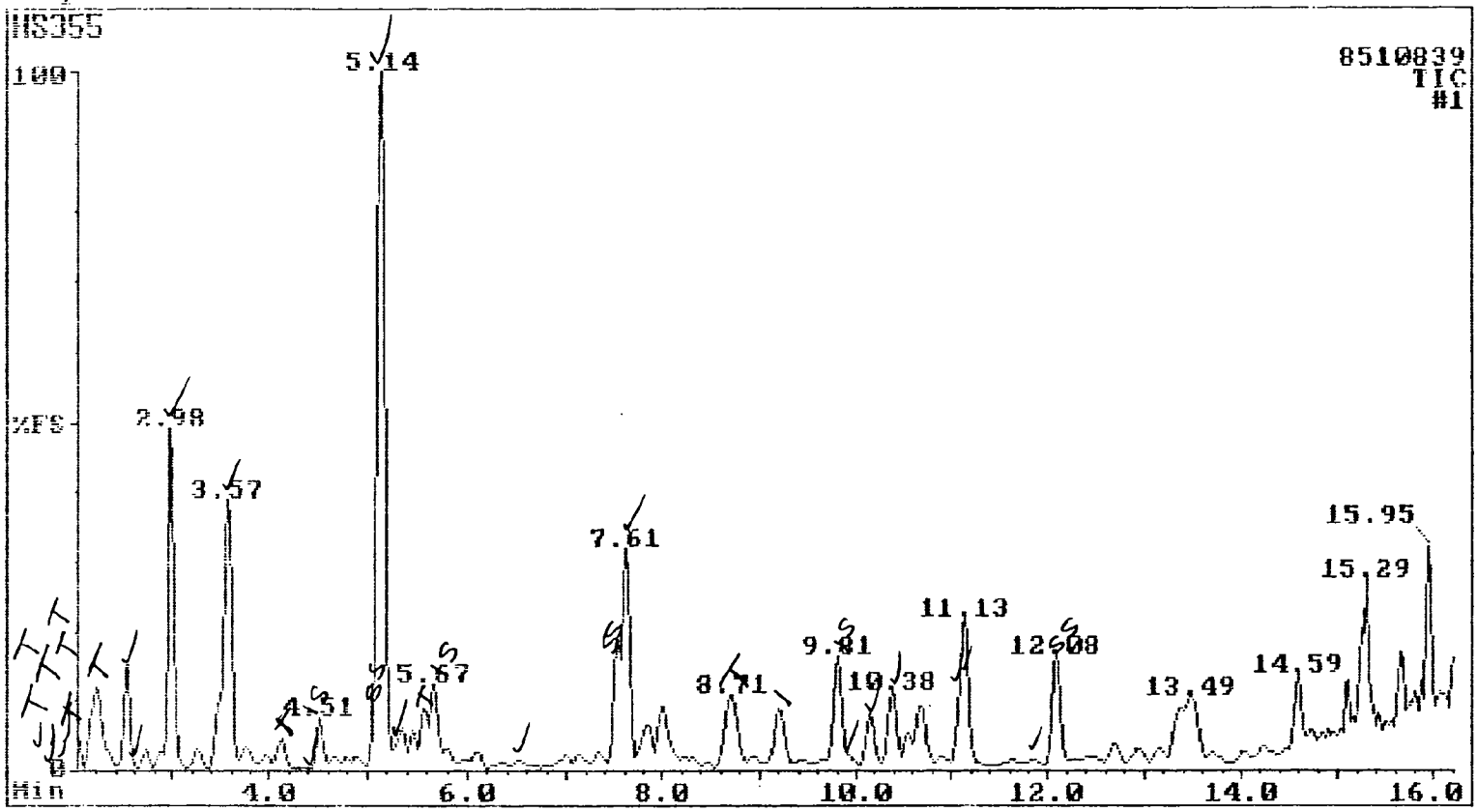
07-08-97 23:53 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 1 TUBE0/B T/TC 173-46-60/B TLI#42284 Instrument H



Data Review: TW
Date: 7-30-97

WAN DB : H3355 LAB-BASE QUAN 07-09-97 00.18

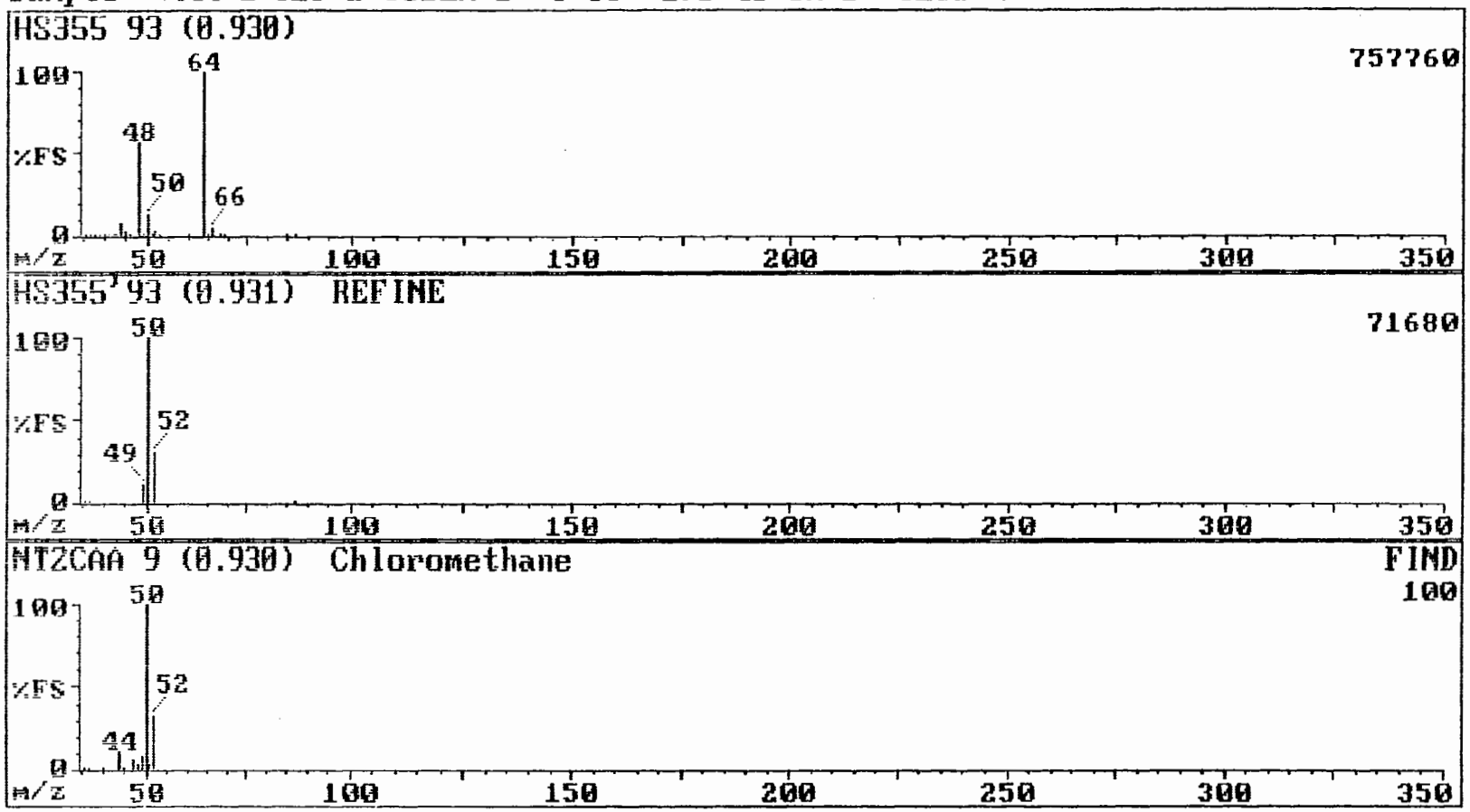
No.	MAT	FOR	REV	Delta	Area	P.Flags	RT	QM	Name
1	100	89	98	0	401552	bb	4.51	128	Bromochloromethane
2	100	88	96	1	2481656	bb	5.67	114	1,4-Difluorobenzene
3	100	93	97	-2	3089680	bv	9.80	117	Chlorobenzene-d5
4	46	16	59	2	1219520	bv	5.12	65	1,2-Dichloroethane-d4
5	98	79	80	0	3539052	bv	5.10	84	Benzene-d6
6	100	88	99	1	4125010	bv	7.52	98	Toluene-d8
~~7~~	~~18~~	~~11~~	~~31~~	~~30~~	~~50484~~	~~A~~	~~13.35~~	98	o-Xylene-d10 FP TW
8	100	86	94	2	2038678	vv	12.09	95	4-Bromofluorobenzene
9	59	47	49	0	734000	vv	0.93	50	Chloromethane
~~10~~	~~18~~	~~17~~	~~20~~	~~15~~	~~356~~	~~bb~~	~~0.91~~	62	Vinyl Chloride FP TW
11	100	60	100	0	~~1813552~~	~~A~~ 476496	~~1.02~~ 1.06	39	1,3-Butadiene FP TW
12	90	50	96	1	76316	bb	1.43	94	Bromomethane
13	32	39	48	26	19156	!!	1.80	64	Chloroethane
14	0	0	0	0	0		0.00	106	Vinyl bromide
15	92	54	95	0	343544	bb	1.84	101	Trichlorofluoromethane
16	0	0	0	0	0		0.00	96	1,1-Dichloroethene
17	0	0	0	0	0		0.00	142	Iodomethane
18	100	80	99	1	4244972	bv	2.51	76	Carbon disulfide
19	71	45	73	1	123661	vb	2.58	43	Acetone
20	0	0	0	0	0		0.00	76	Allyl chloride
21	100	84	95	1	3999896	bv	2.98	84	Methylene chloride
22	0	0	0	0	0		0.00	96	trans-1,2-Dichloroethene
~~23~~	~~68~~	~~53~~	~~57~~	~~1~~	~~10916~~	~~A~~	~~3.32~~	73	tert-Butyl methyl ether
~~24~~	~~24~~	~~7~~	~~33~~	~~1~~	~~24995~~	~~bv~~	~~3.26~~	53	Acrylonitrile FP TW
25	100	98	100	0	6114050	vv	3.57	57	n-Hexane
26	0	0	0	0	0		0.00	63	1,1-Dichloroethane
~~27~~	~~55~~	~~45~~	~~55~~	~~7~~	~~226434~~	~~vv~~	~~4.12~~	42	1,2-Epoxybutane FP TW
28	0	0	0	0	0		0.00	96	cis-1,2-Dichloroethene
29	0	0	0	0	0		0.00	83	Chloroform
30	0	0	0	0	0		0.00	62	1,2-Dichloroethane
31	100	70	93	1	983916	bv	5.30	57	Isooctane
~~32~~	~~33~~	~~31~~	~~62~~	~~28~~	~~4815497~~	~~bv~~	~~3.57~~	43	Vinyl acetate FP TW
33	90	72	77	2	6496	A	4.41	72	2-Butanone
~~34~~	~~38~~	~~13~~	~~48~~	~~0~~	~~27064~~	~~bb~~	~~4.76~~	97	1,1,1-Trichloroethane FP TW
35	0	0	0	0	0		0.00	117	Carbon tetrachloride
36	100	93	99	0	21924080	bv	5.14	78	Benzene
37	0	0	0	0	0		0.00	130	Trichloroethene
~~38~~	~~26~~	~~14~~	~~42~~	~~17~~	~~4496~~	~~A~~	~~6.32~~	63	1,2-Dichloropropane FP TW
~~39~~	~~46~~	~~29~~	~~53~~	~~4~~	~~41352~~	~~A~~	~~6.26~~	55	Ethyl acrylate
40	100	86	95	0	209160	bb	6.50	69	Methyl methacrylate
41	0	0	0	0	0		0.00	83	Bromodichloromethane
42	0	0	0	0	0		0.00	75	cis-1,3-Dichloropropene
43	0	0	0	0	0		0.00	75	trans-1,3-Dichloropropen
44	0	0	0	0	0		0.00	97	1,1,2-Trichloroethane
45	0	0	0	0	0		0.00	129	Dibromochloromethane
46	0	0	0	0	0		0.00	107	Ethylene dibromide
47	0	0	0	0	0		0.00	173	Bromoform
~~48~~	~~39~~	~~39~~	~~80~~	~~19~~	~~254411~~	~~vv~~	~~7.31~~	43	4-Methyl-2-pentanone FP TW
49	100	95	99	1	4627468	bv	7.61	92	Toluene
50	0	0	0	0	0		0.00	164	Tetrachloroethene

Data Review: TW
Date: 7-20-97

No.	MAT	FOR	REV	Delta	Area	P.Flags	RT	QM	Name
~~51~~	~~41~~	~~21~~	~~62~~	~~-8~~	~~37785~~	~~A~~	~~8.75~~	43	2-Hexanone FPTW
52	45	15	58	1	51360	bb	9.85	112	Chlorobenzene
53	100	91	99	1	657024	bv	10.14	106	Ethylbenzene
54	100	86	94	0	1155824	vv	10.37	106	m-/p-Xylene
55	100	81	87	1	605448	bv	11.08	106	o-Xylene
56	100	92	96	1	3506764	bv	11.13	104	Styrene
~~57~~	~~26~~	~~5~~	~~41~~	~~5~~	~~5624~~	~~A~~	~~12.51~~	83	1,1,2,2-Tetrachloroet FPTW
58	69	38	75	0	149512	vv	11.85	105	Cumene

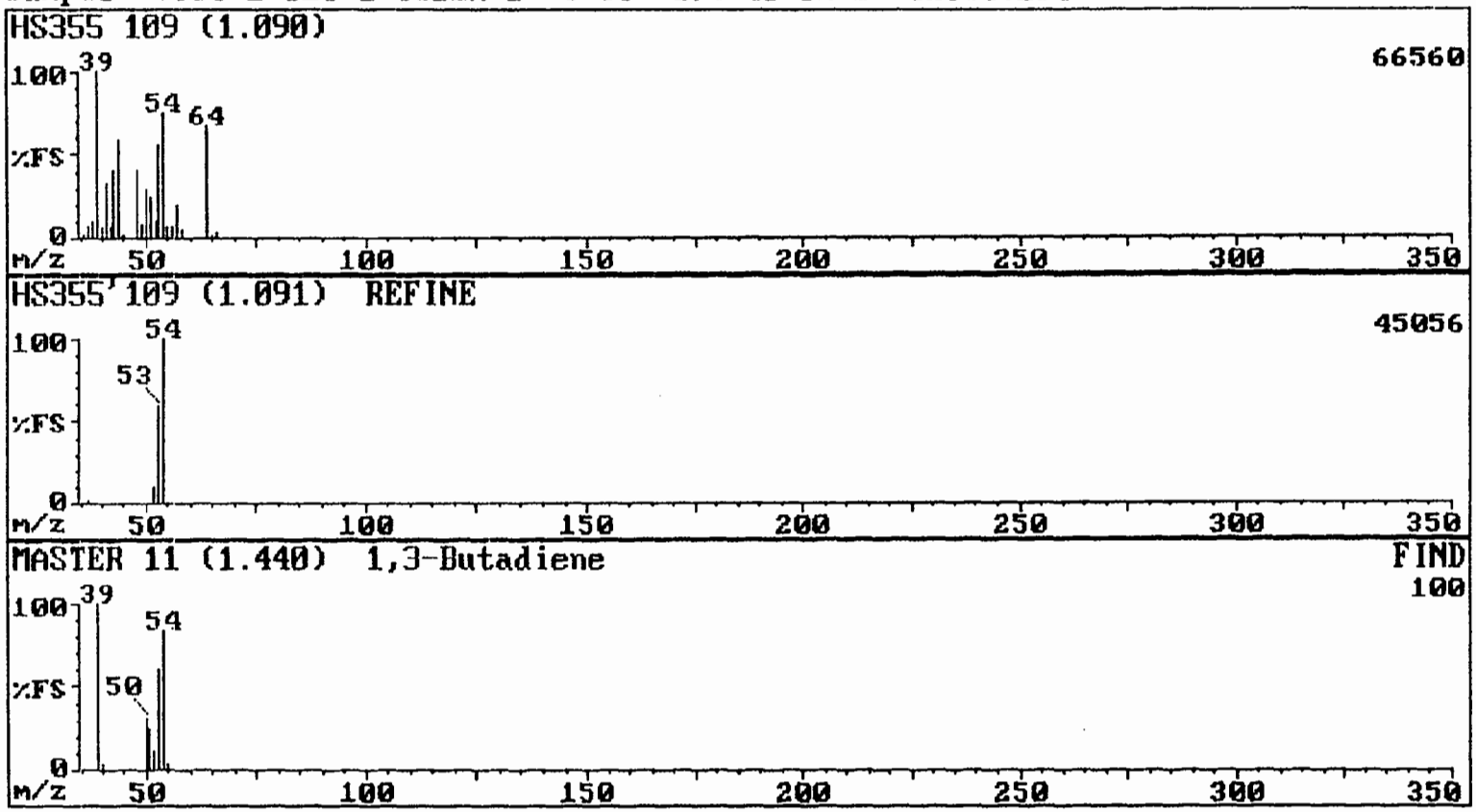
07-08-97 23:53 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 1 TUBEA/B T/TC 173-46-6A/B TLI#42284 Instrument H



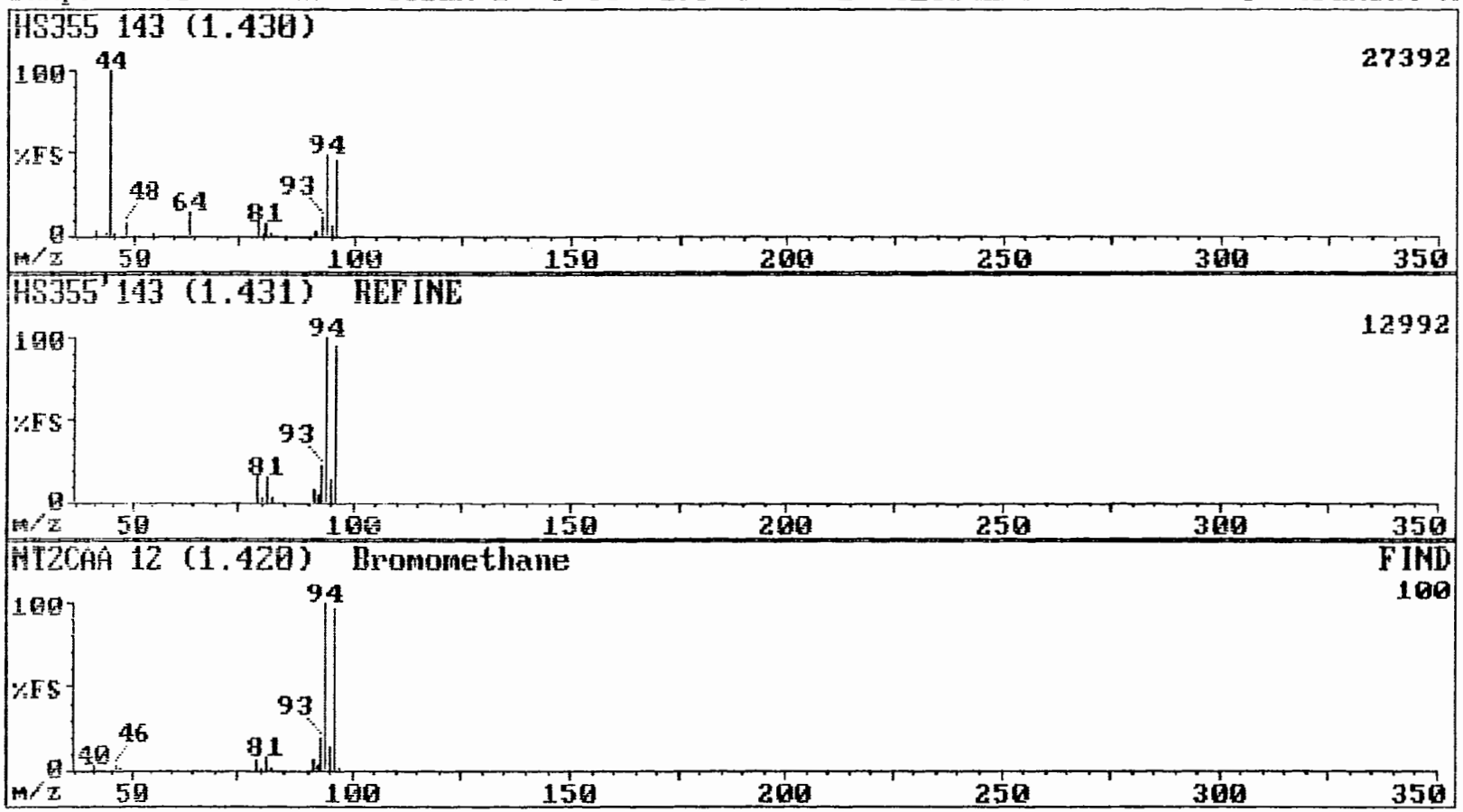
08-Jul-97 23:53 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 1 TUBEA/B T/TC 173-46-6A/B TLI#42284 Instrument H



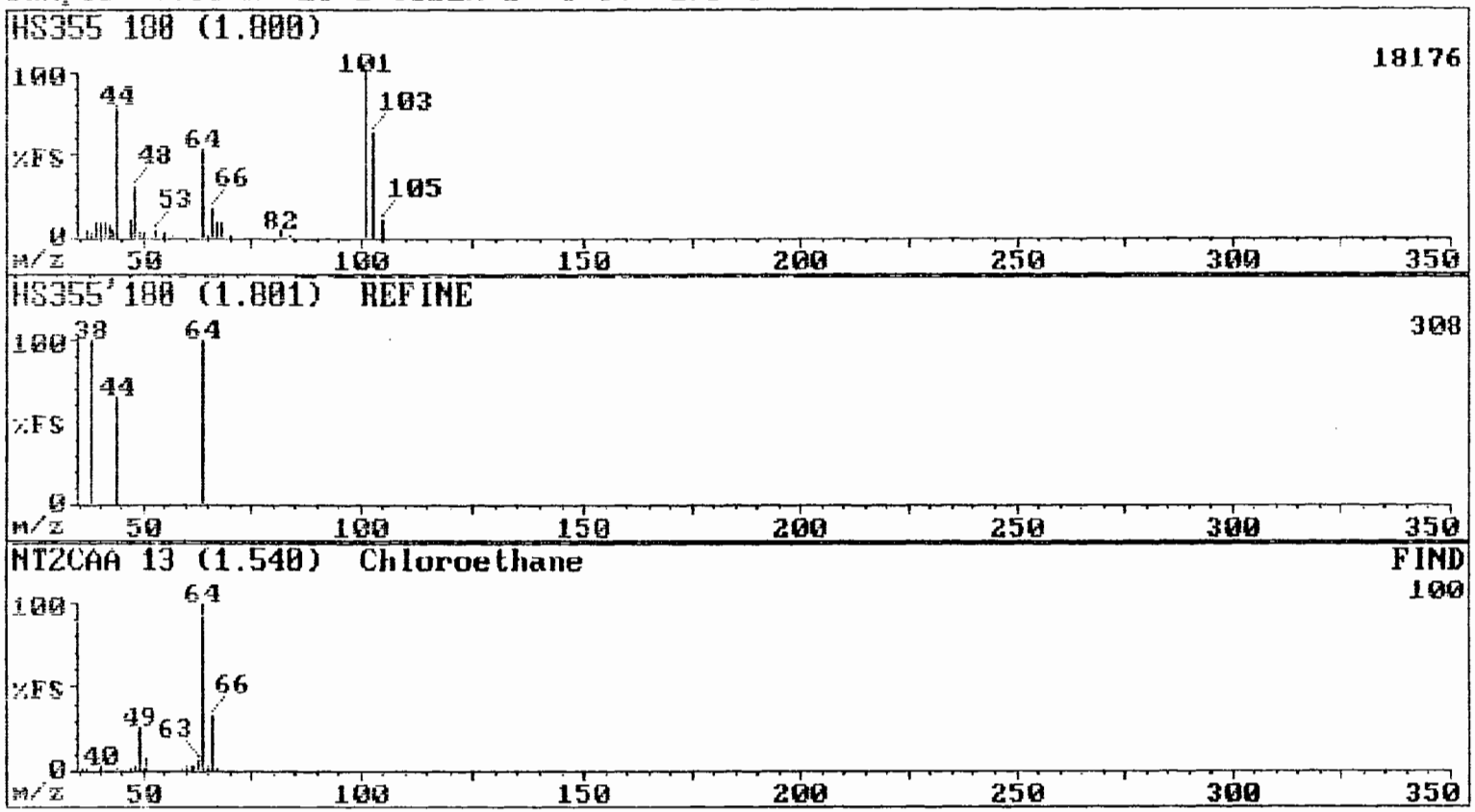
07-08-97 23:53 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 1 TUBEA/B T/TC 173-46-6A/B TLI#42284 Instrument H



07-08-97 23:53 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 1 TUBEA/B T/TC 173-46-6A/B TLI#42284 Instrument H



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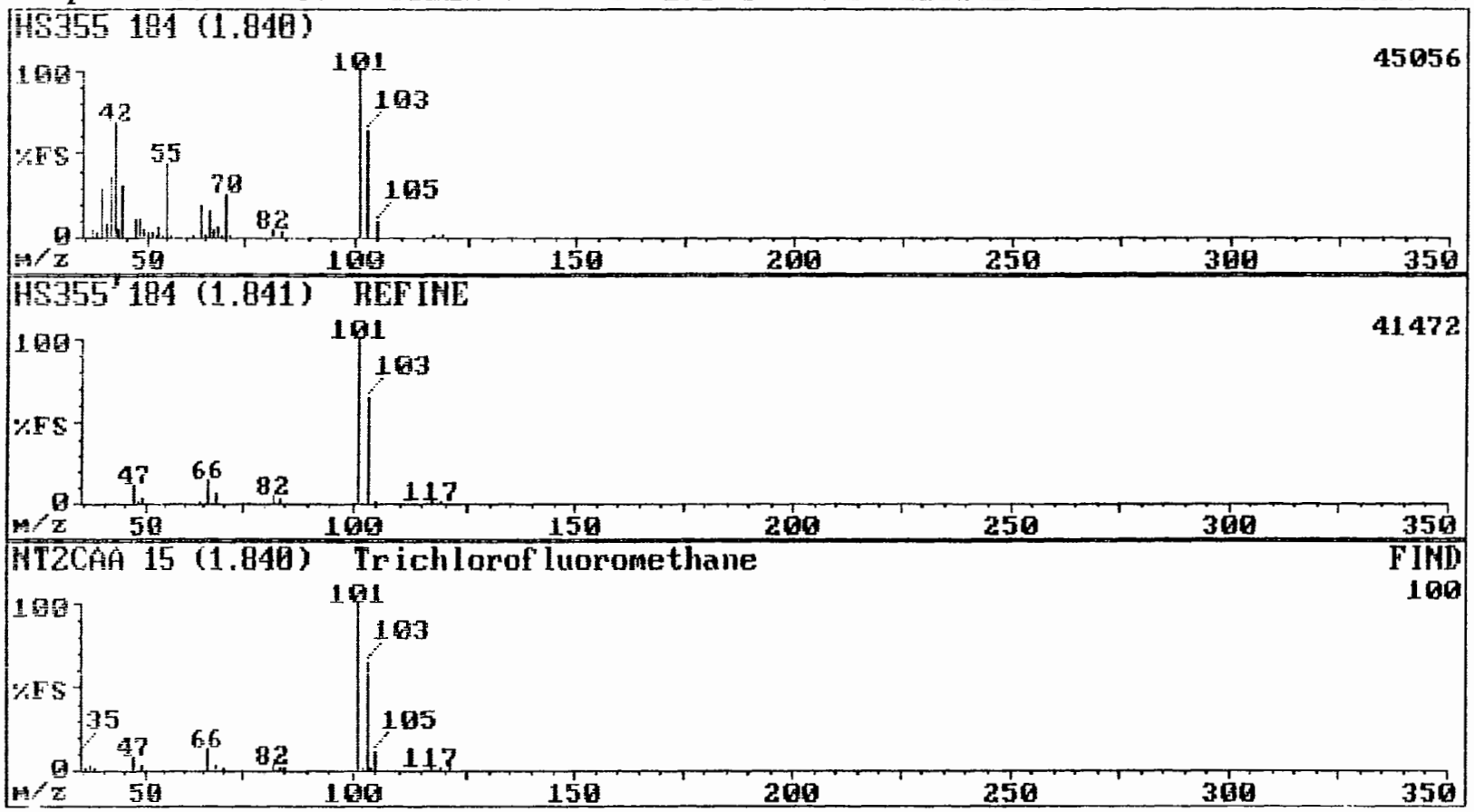
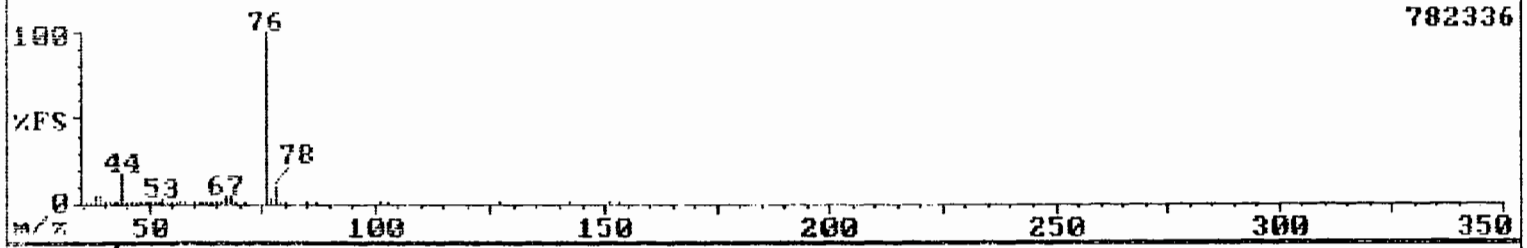
Sample: VOST-2 SET 1 TUBEA/B T/TC 173-46-6A/B TLI#42284 Instrument H



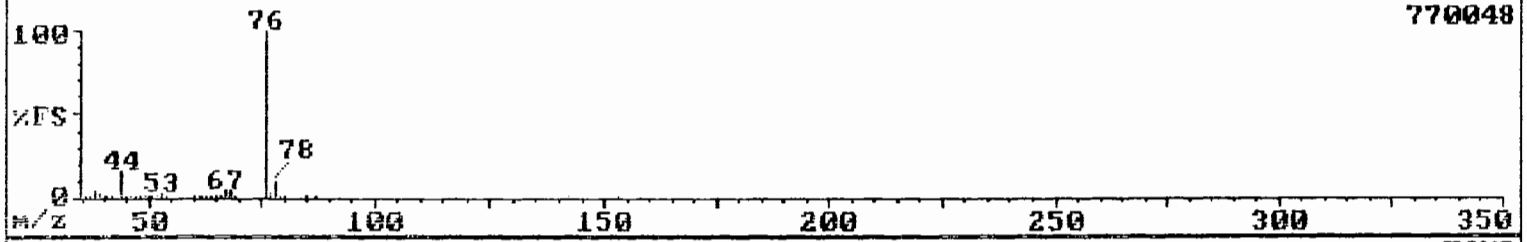
07-08-97 23:53 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 1 TUBEA/B T/TC 173-46-6A/B TLI#42284 Instrument H

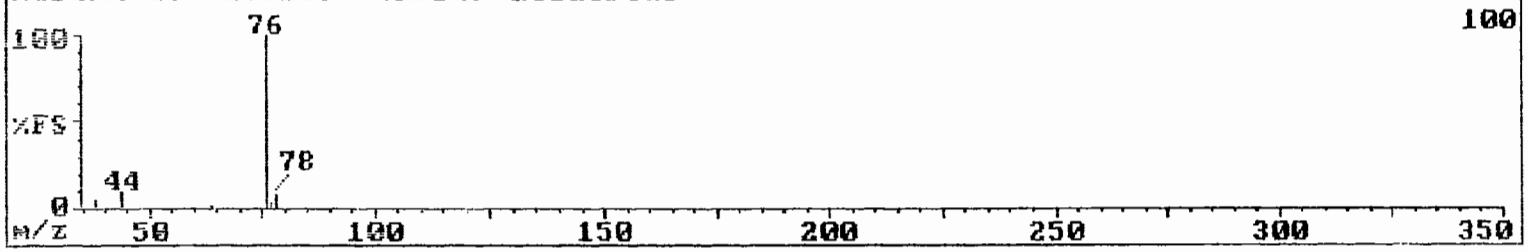
HS355 251 (2.510)



HS355 251 (2.511) REFINE

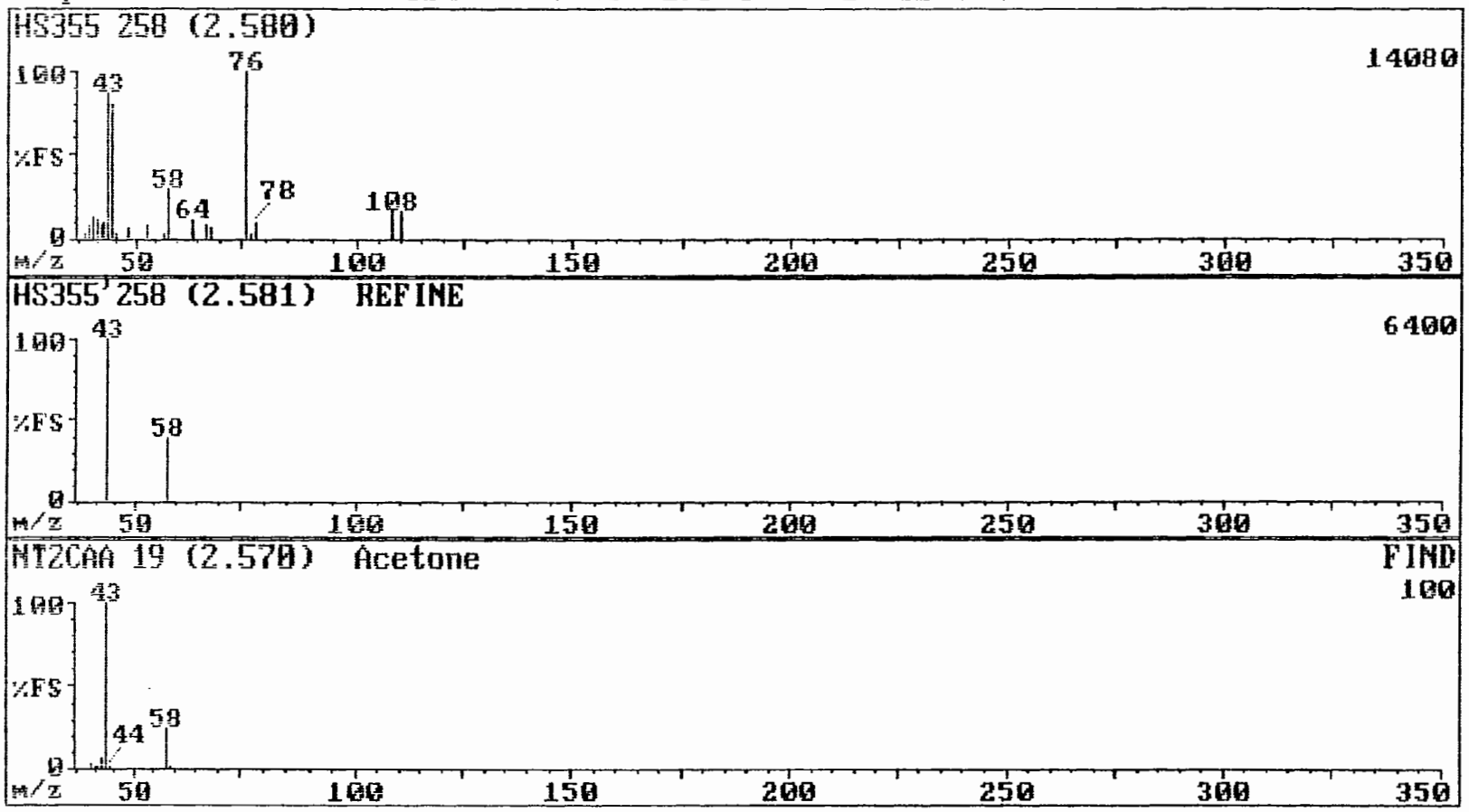


NT2CAA 18 (2.500) Carbon disulfide FIND 100



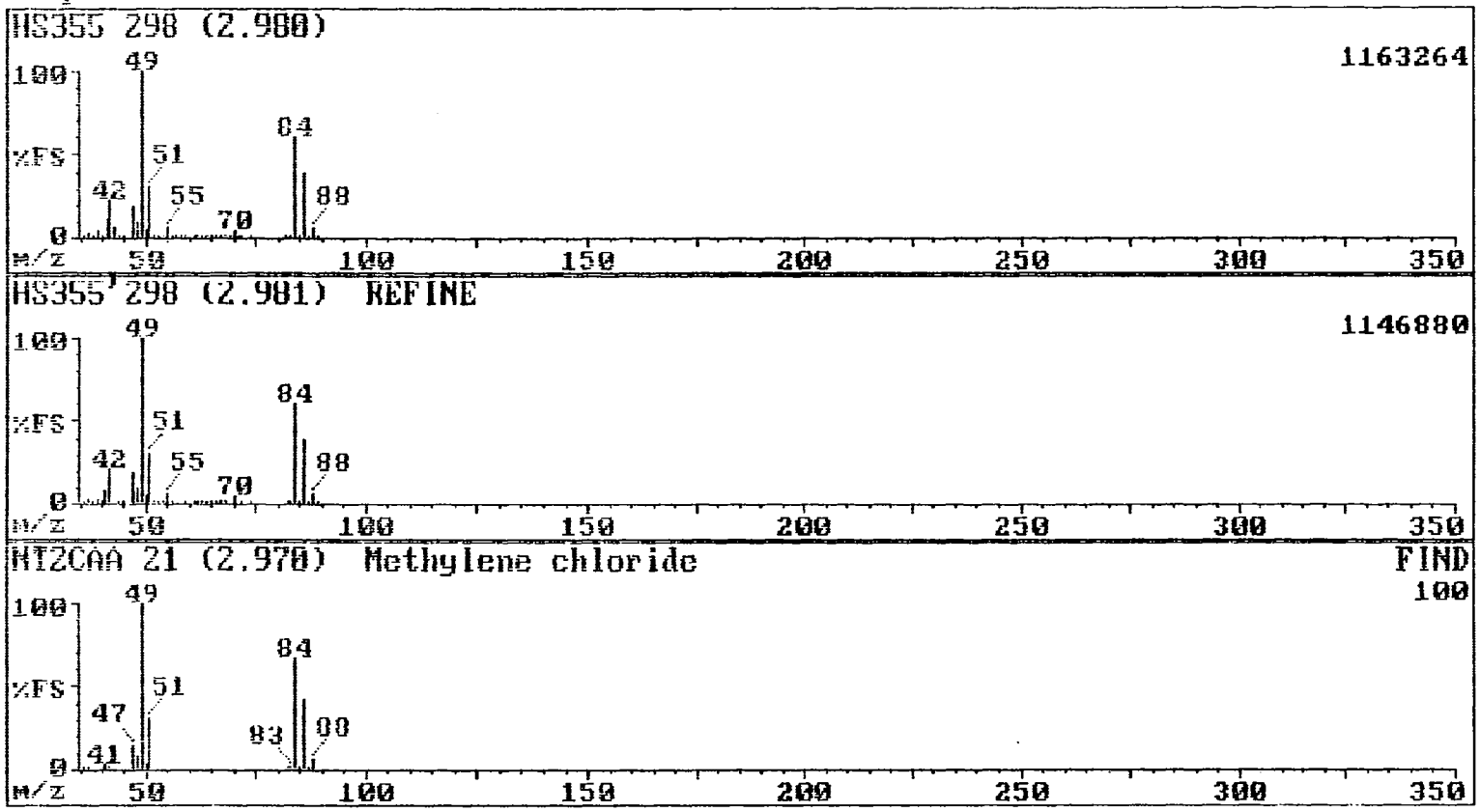
07-08-97 23:53 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 1 TUBEA/B T/TC 173-46-6A/B TLI#42284 Instrument H



07-08-97 23:53 Triangle Laboratories of RTP, Inc. (919) 544-5729

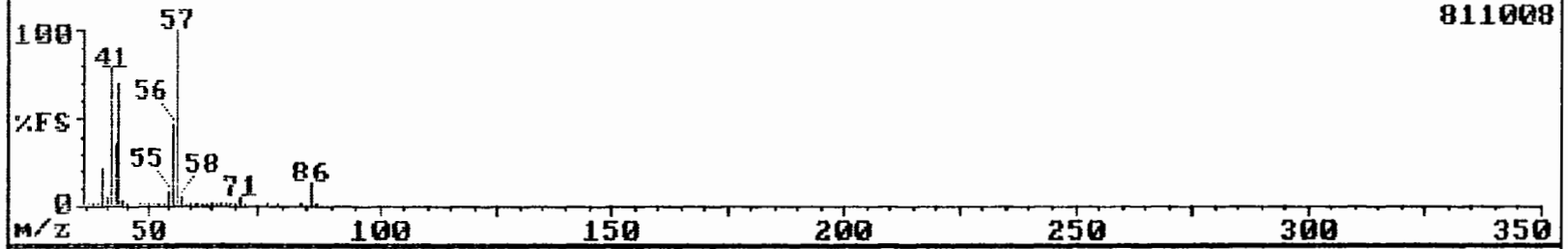
Sample: VOST-2 SET 1 TUBEA/B T/TC 173-46-6A/B TL1#42284 Instrument H



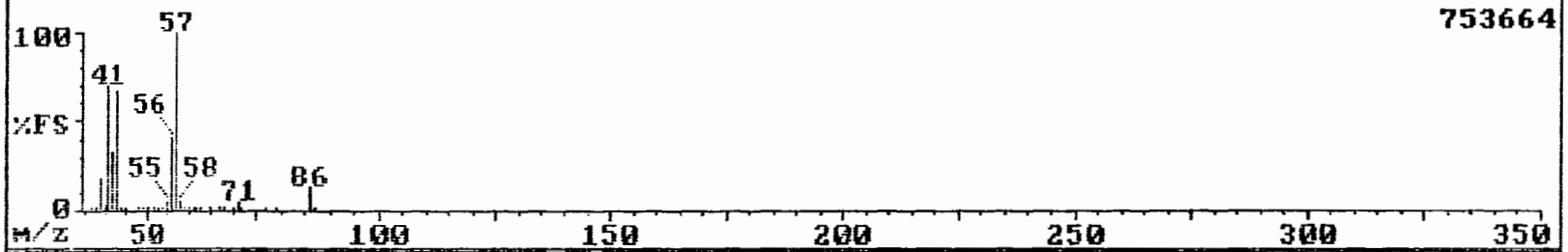
07-08-97 23:53 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 1 TUBEA/B T/TC 173-46-6A/B TLI#42284 Instrument H

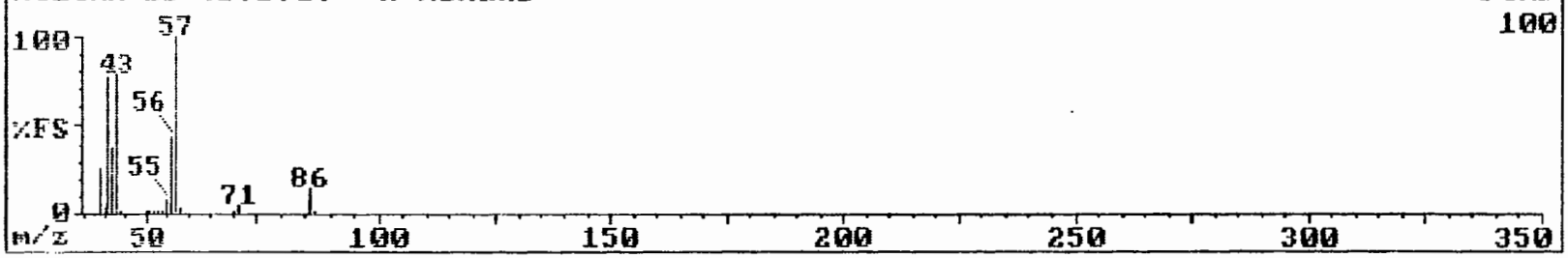
HS355 357 (3.570) 811008



HS355'357 (3.571) REFINE 753664

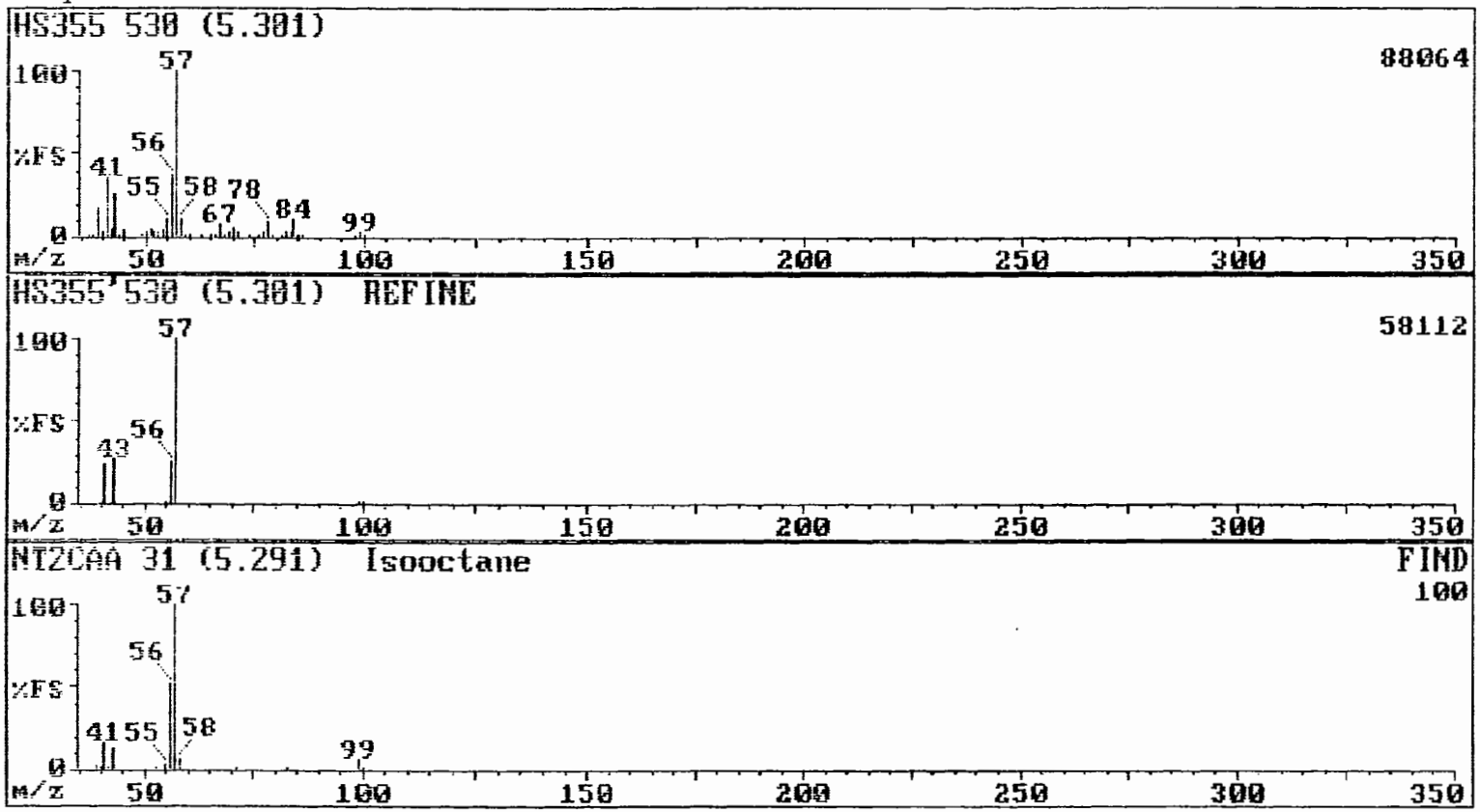


NT2CAA 25 (3.570) n-Hexane FIND 100



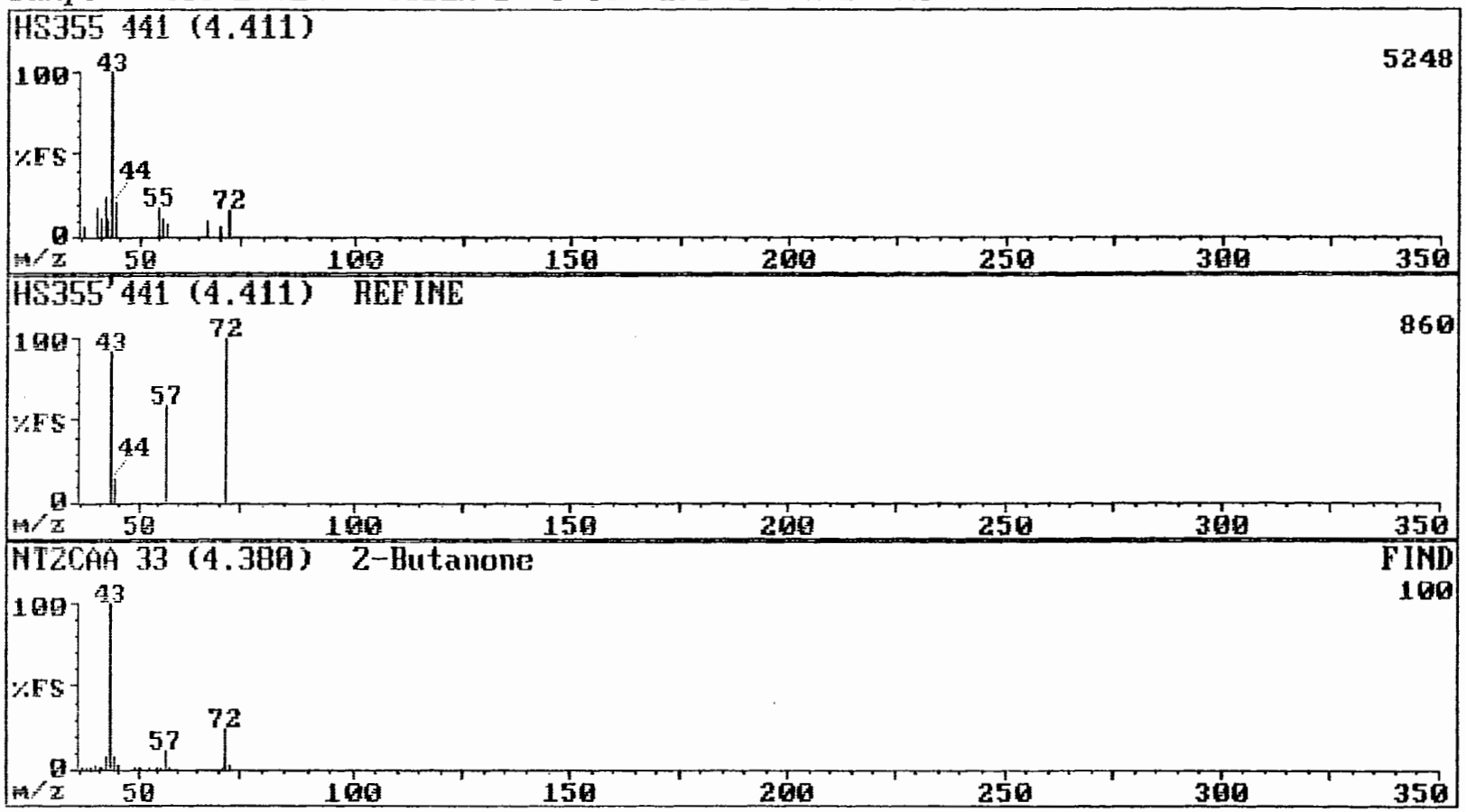
07-08-97 23:53 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 1 TUBEA/B T/TC 173-46-6A/B TLI#42284 Instrument H



07-08-97 23:53 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 1 TUBEA/B T/TC 173-46-6A/B TLI#42284 Instrument H



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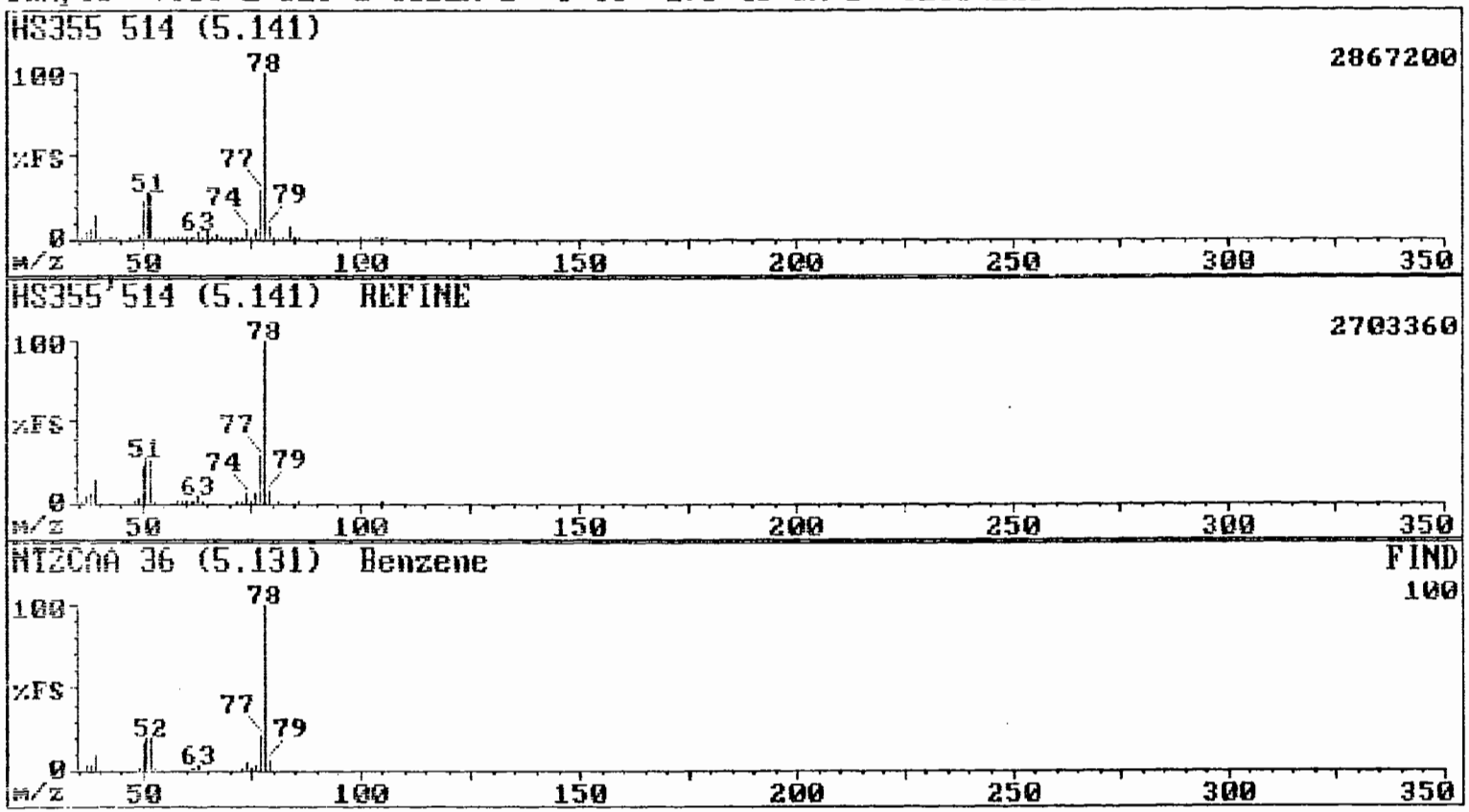
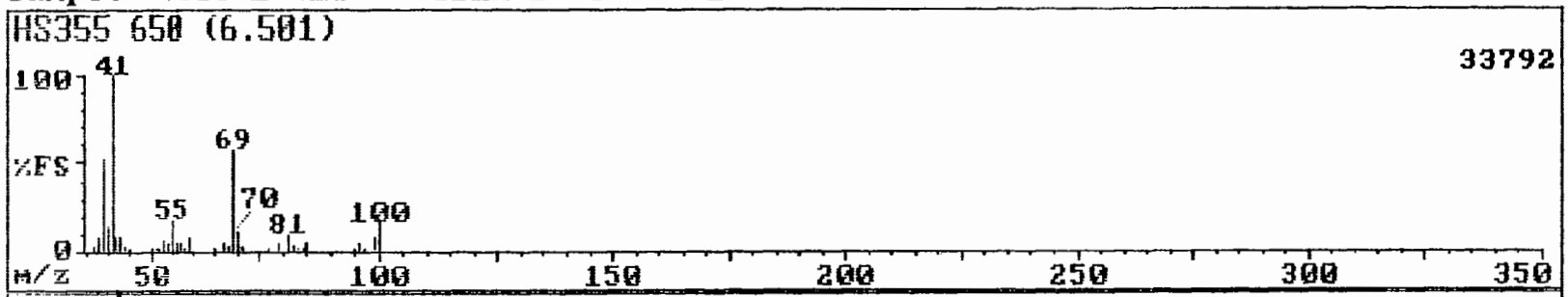
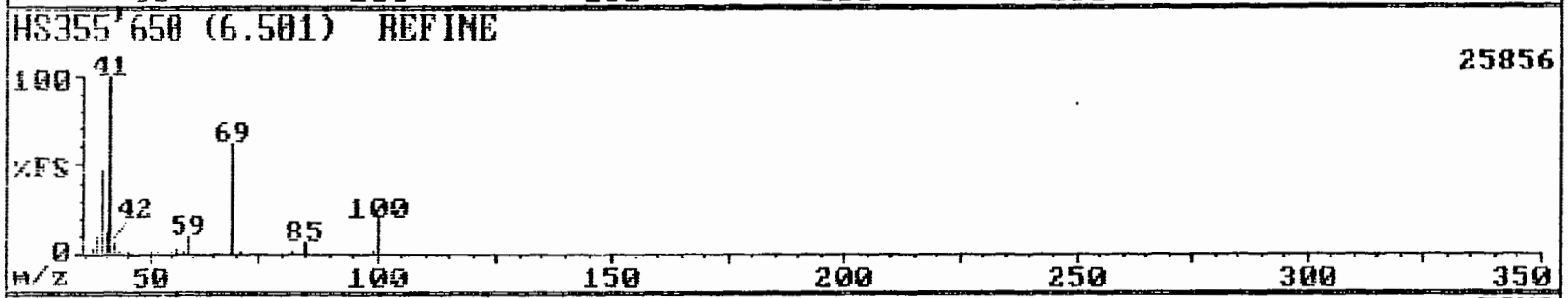
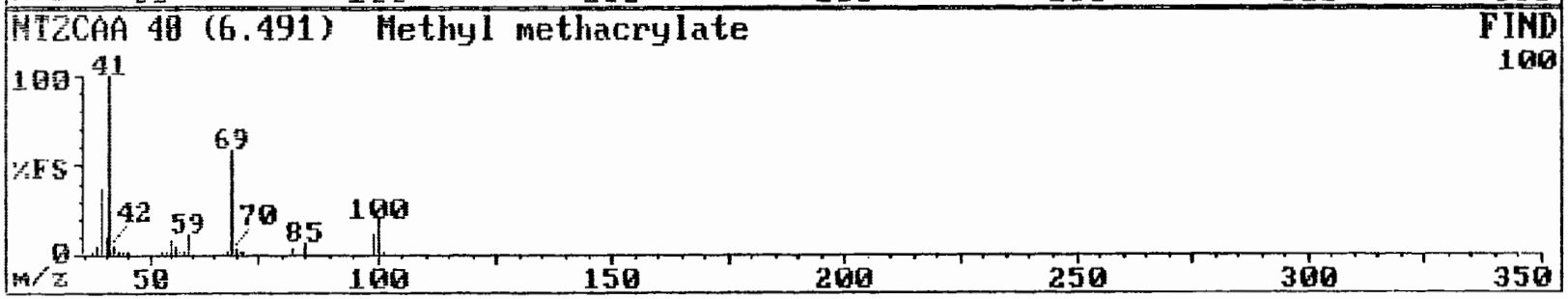


07-08-97 23:53 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 1 TUBEA/B T/TC 173-46-6A/B TLI#42284 Instrument H



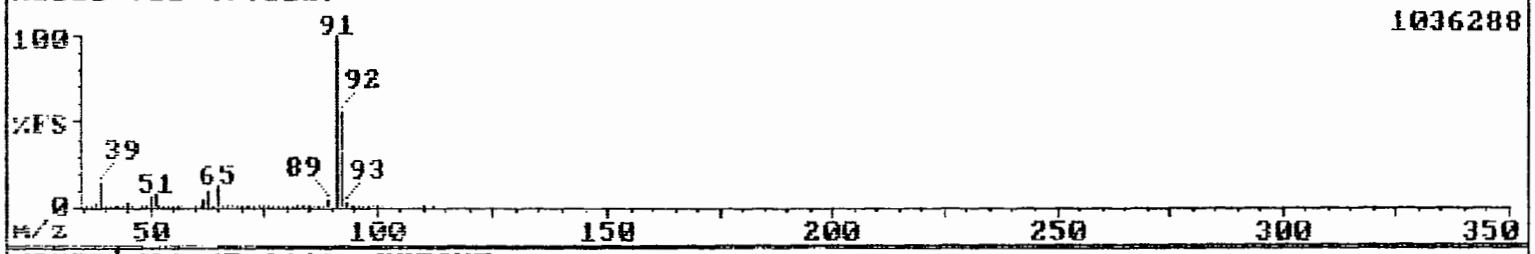




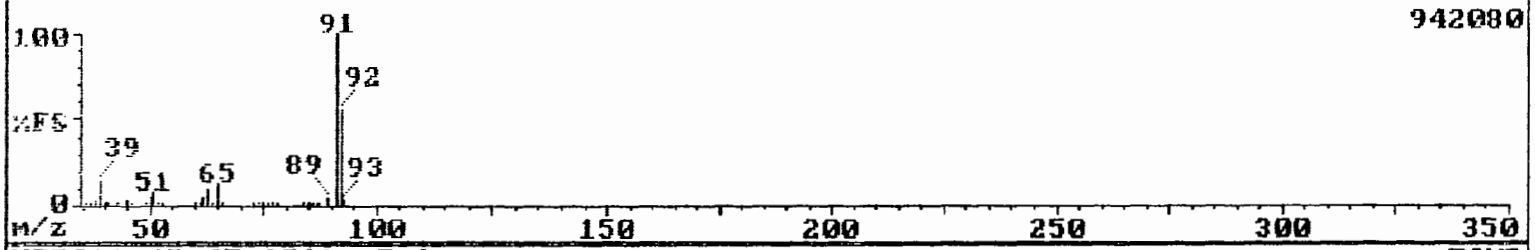
07-08-97 23:53 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 1 TUBEA/B T/TC 173-46-6A/B TLI#42284 Instrument H

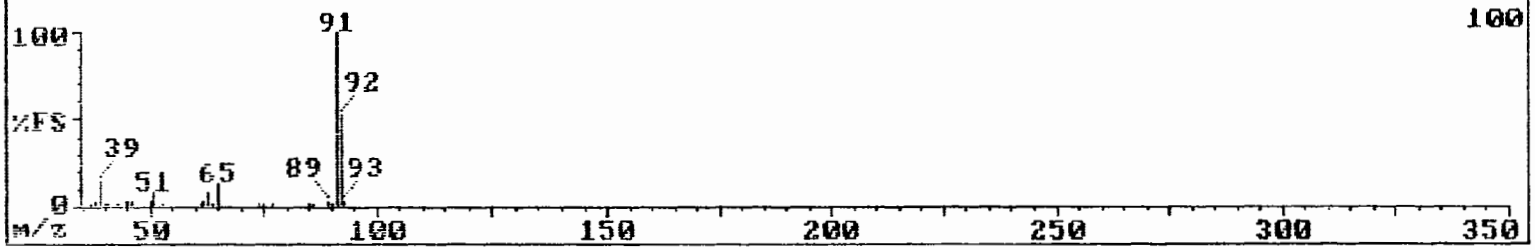
HS355 761 (7.611)



HS355 761 (7.611) REFINE

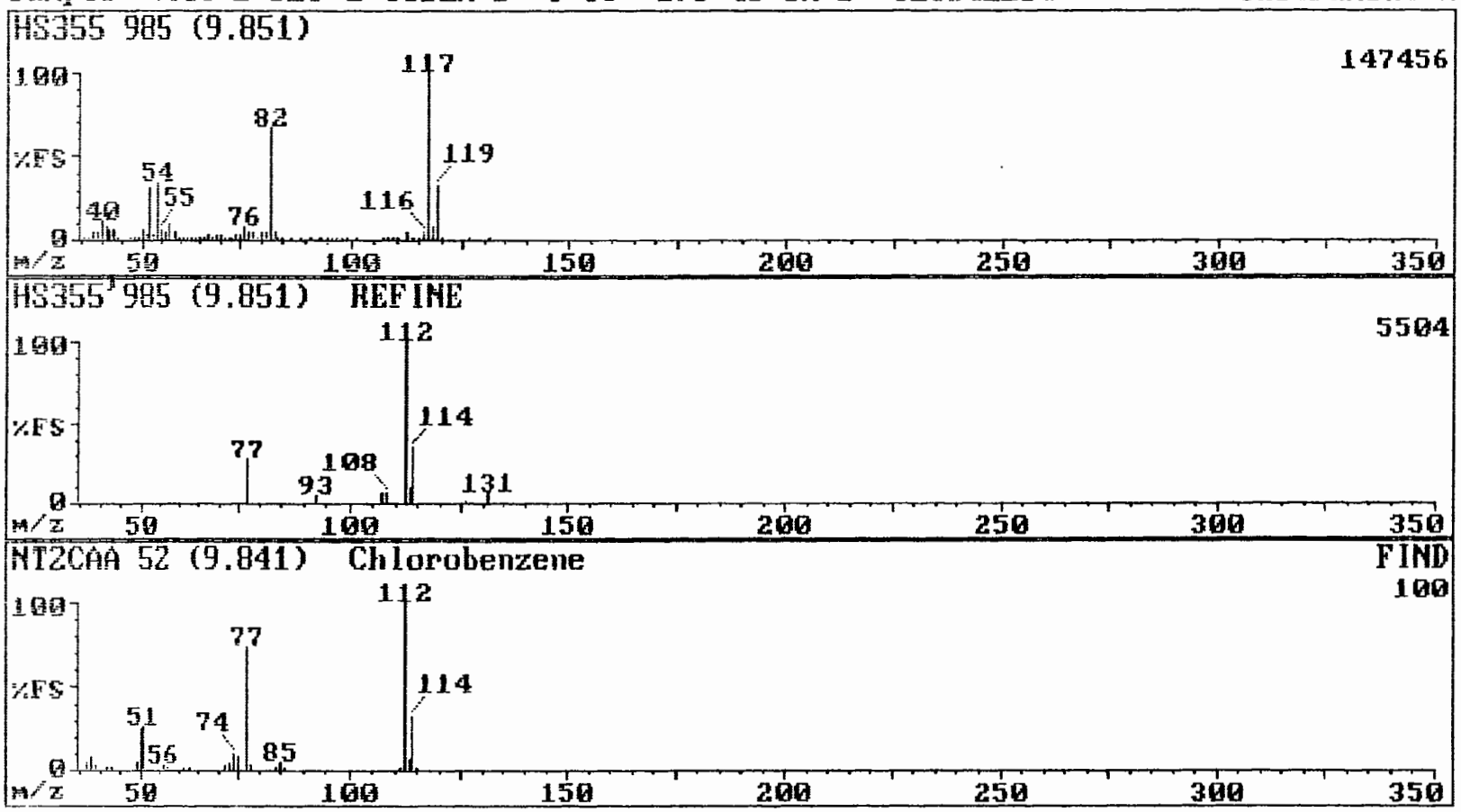


NTZCAA 49 (7.601) Toluene FIND 100



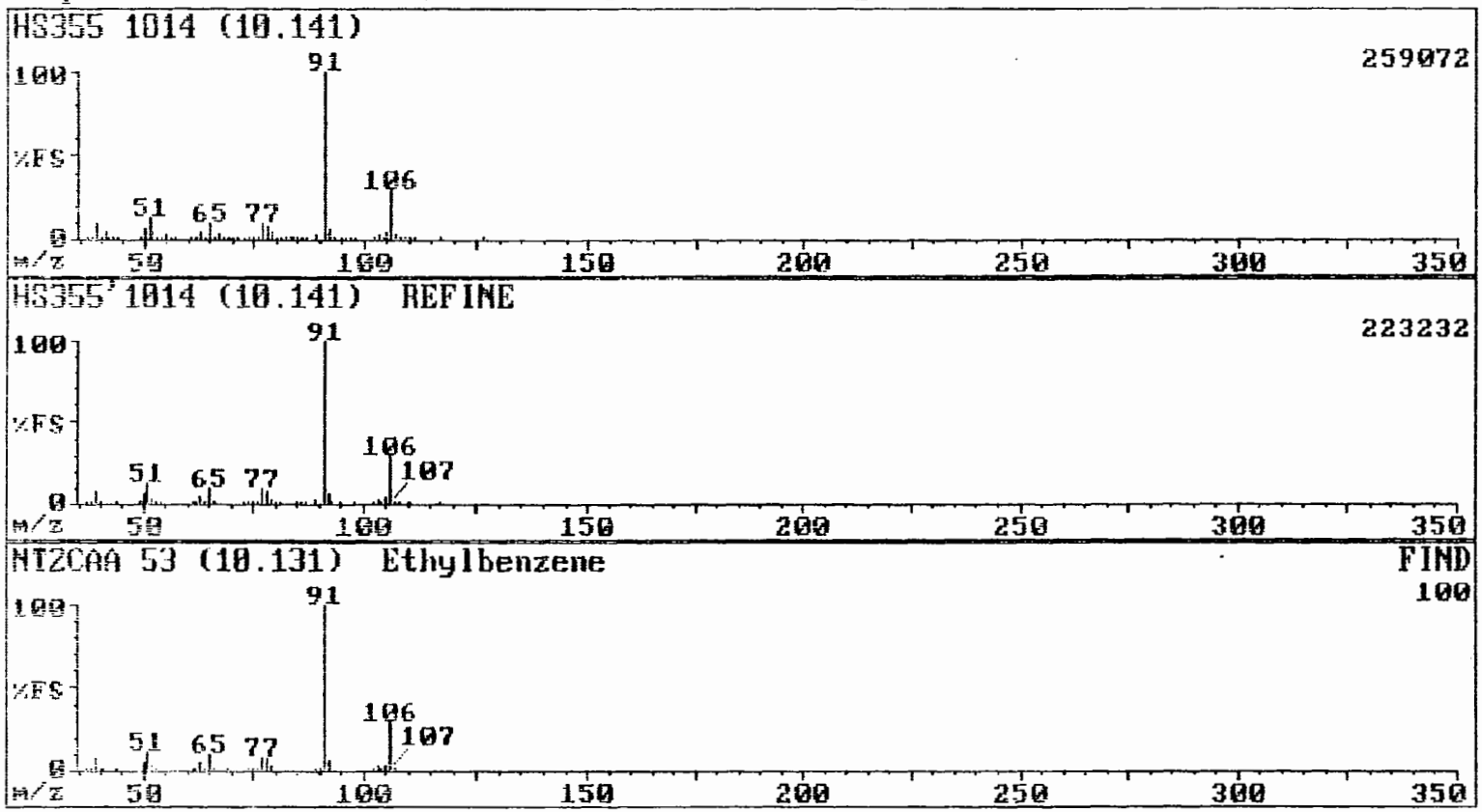
07-08-97 23:53 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 1 TUBEA/B T/TC 173-46-6A/B TLI#42284 Instrument H



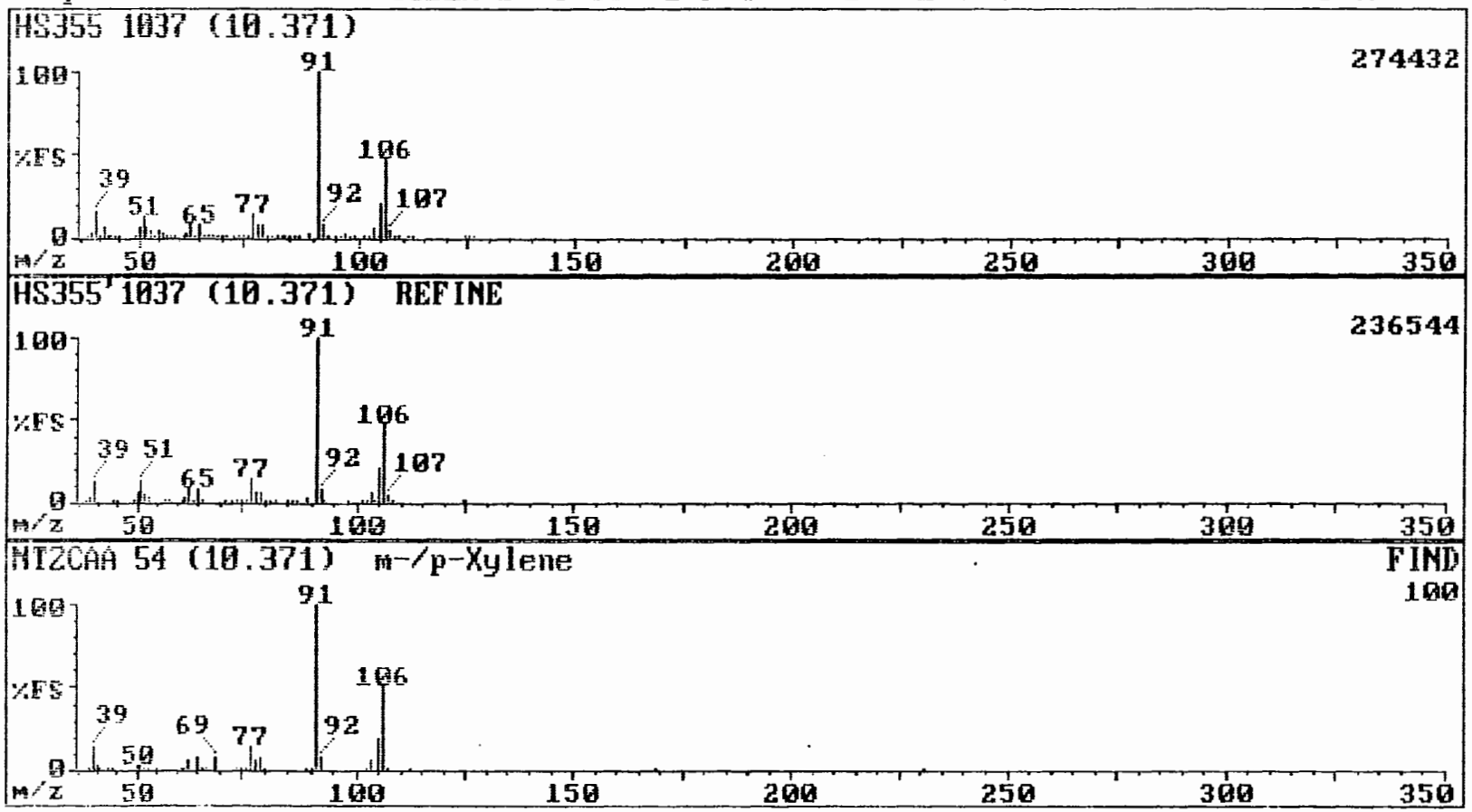
07 08 97 23:53 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 1 TUBEA/B T/TC 173-46-6A/B TLI#42284 Instrument H



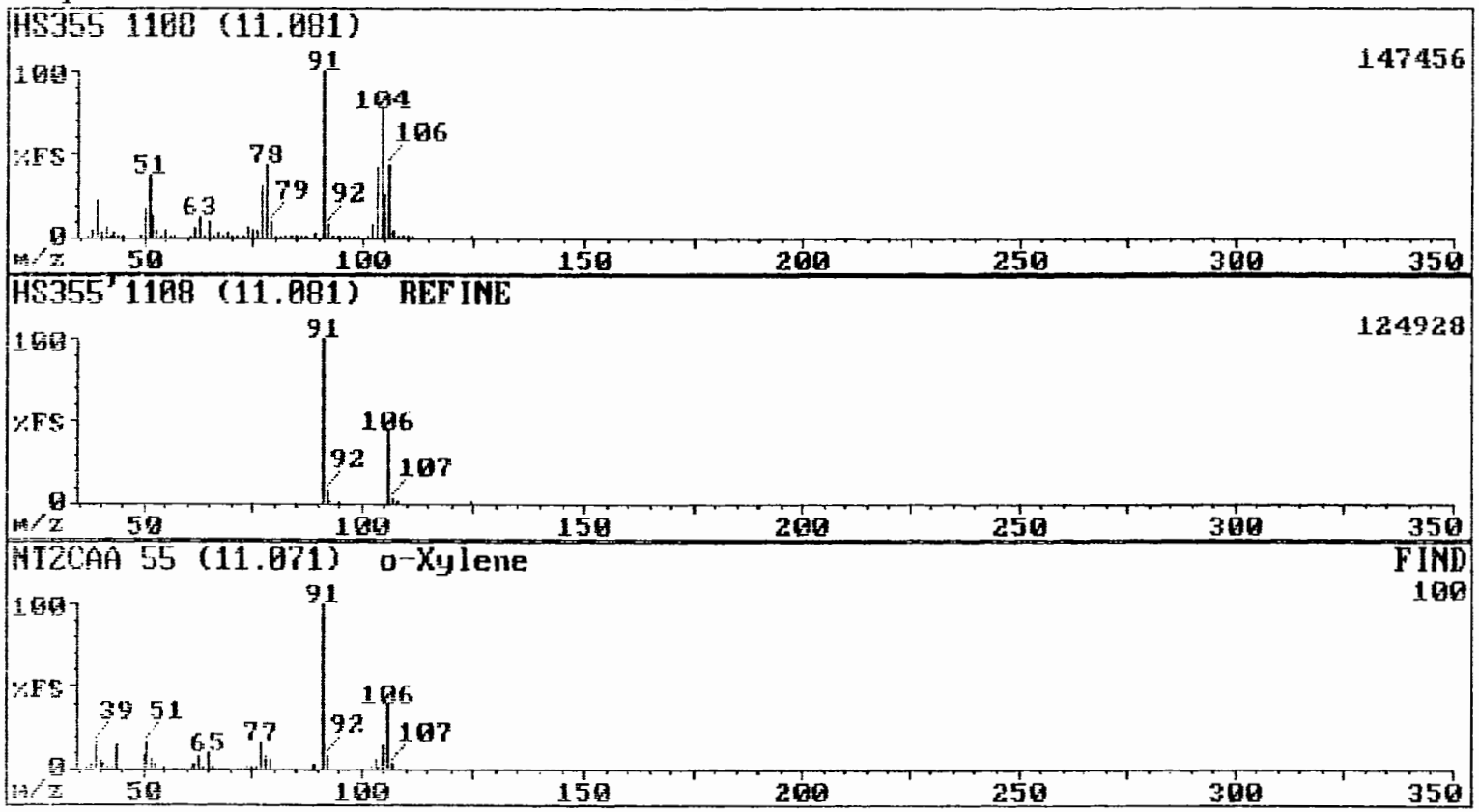
07-08-97 23:53 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 1 TUBEA/B T/TC 173-46-6A/B TLI#42284 Instrument H



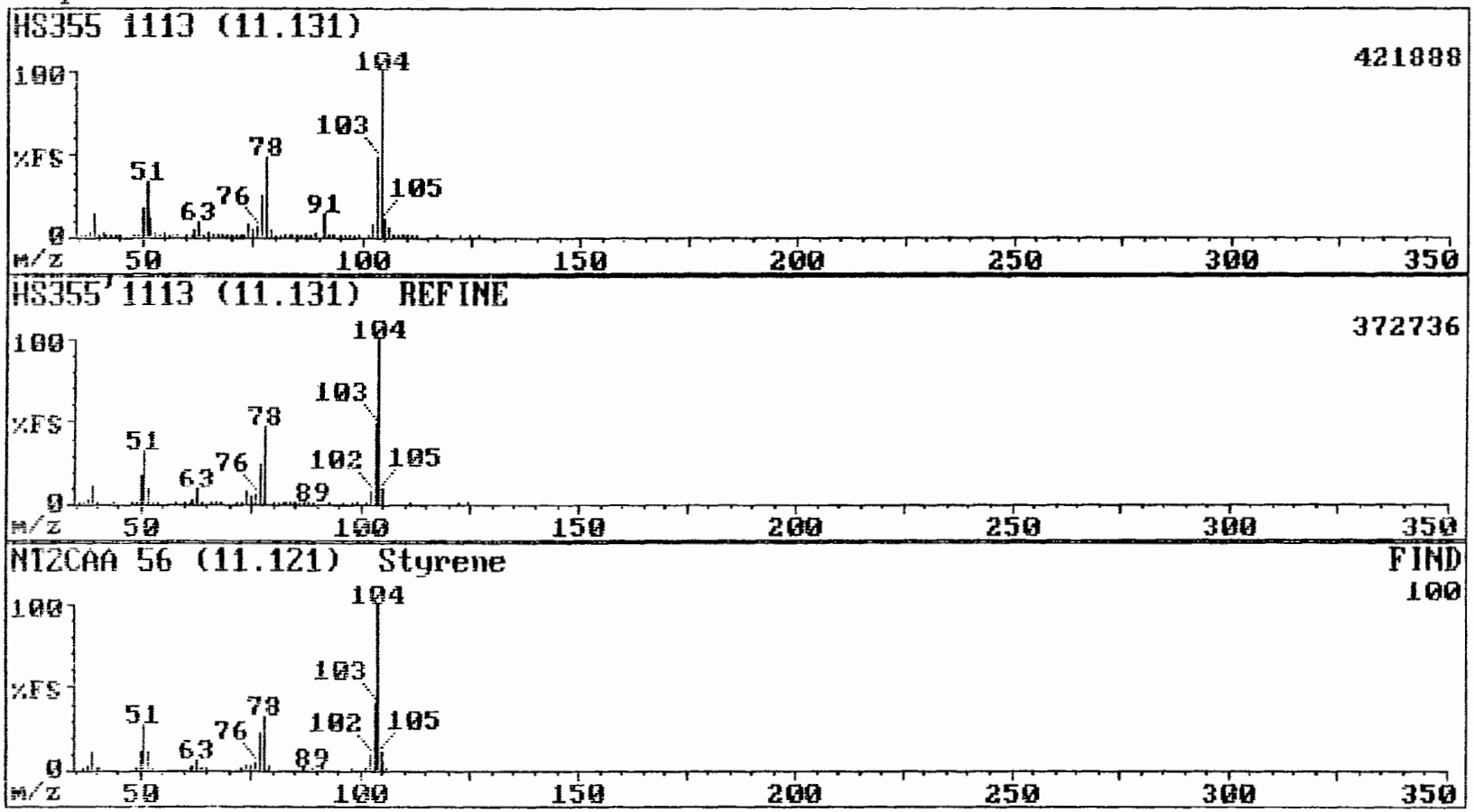
07 08-97 23:53 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 1 TUBEA/B T/TC 173-46-6A/B TLI#42284 Instrument H



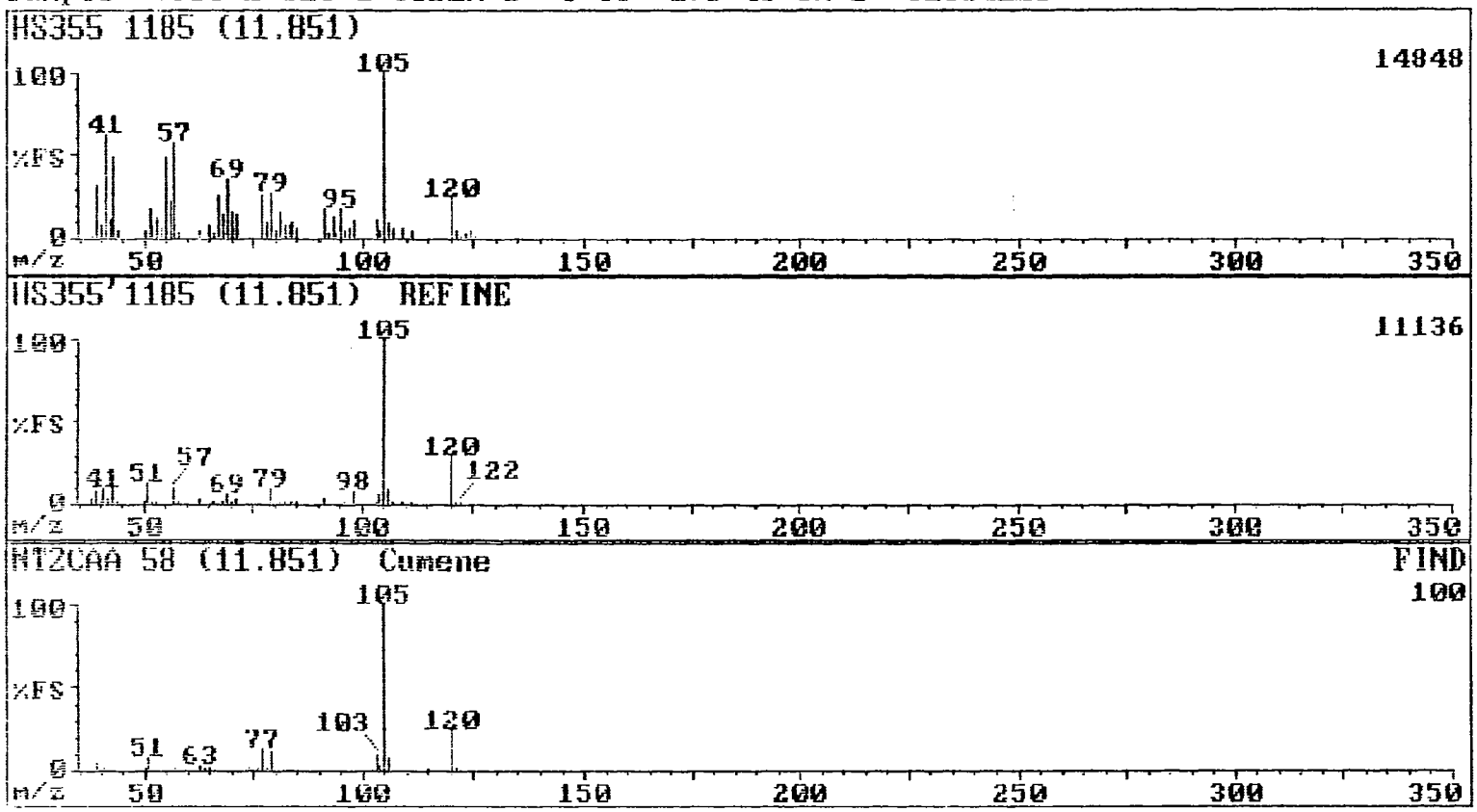
07-08-97 23:53 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 1 TUBEA/B T/TC 173-46-6A/B TLI#42284 Instrument H



07-08-97 23:53 Triangle Laboratories of RTP, Inc. (919) 544-5729

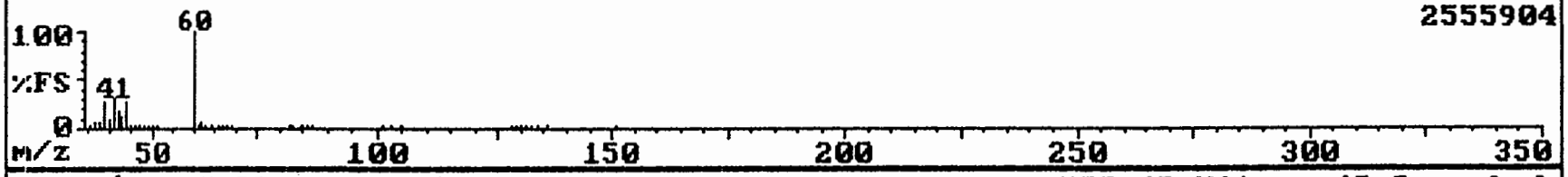
Sample: VOST-2 SET 1 TUBEA/B T/TC 173-46-6A/B TLI#42284 Instrument H



08-Jul-97 23:53 Triangle Laboratories of RTP, Inc. (919) 544-5729

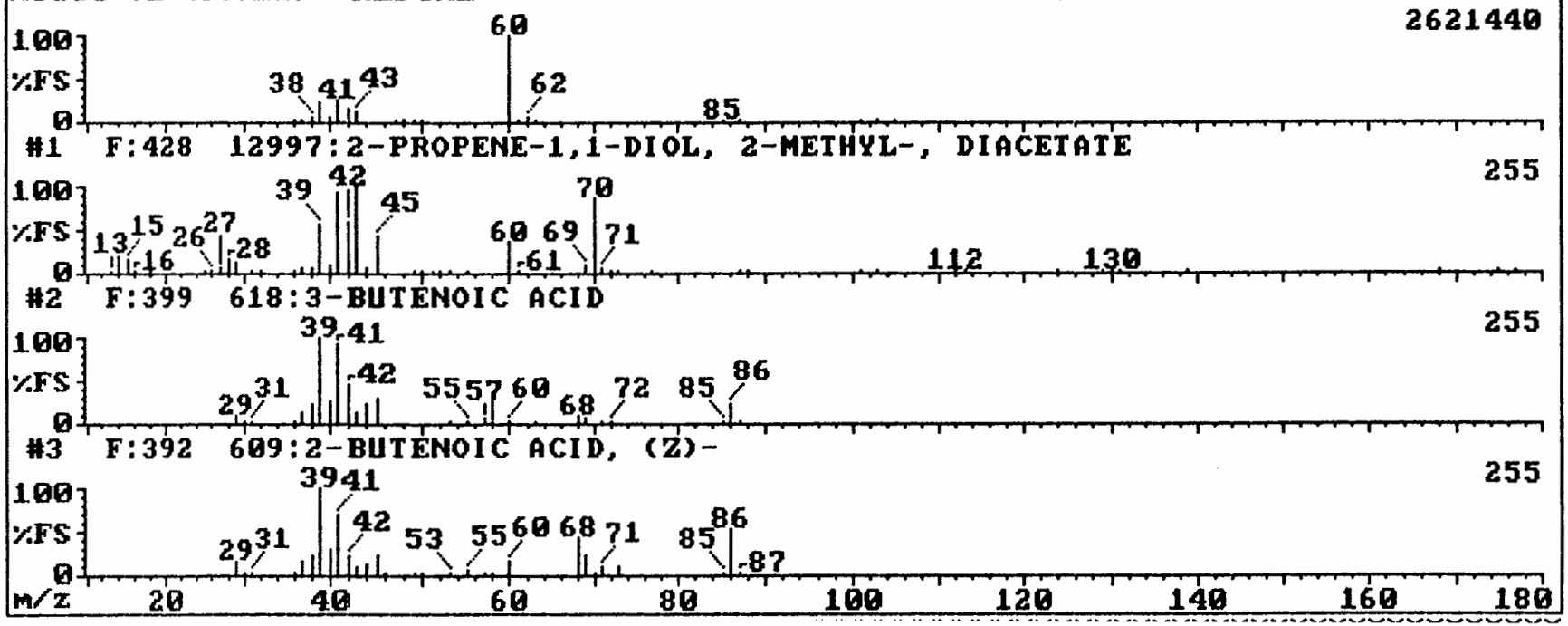
Sample: VOST-2 SET 1 TUBEA/B T/TC 173-46-6A/B TLI#42284 Instrument H

HS355 72 (0.720) 2555904



HS355'72 (0.721) REFINE NBS 49 Hits : 49 Searched

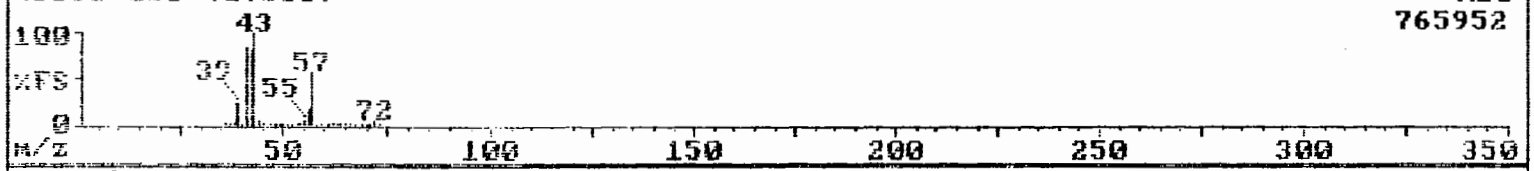
2621440



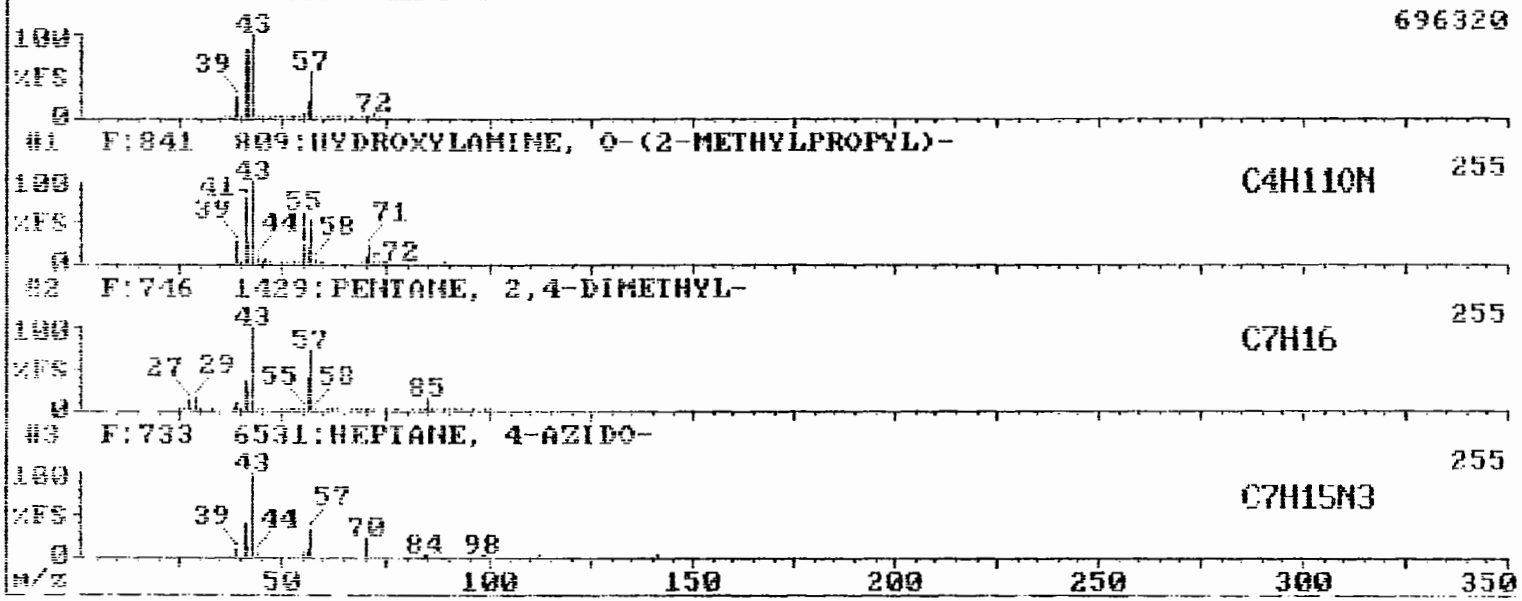
07/08/97 23:53 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 1 TUBEA/B T/TC 173-46-6A/B TLI#42284 Instrument: H

HS355 163 (1.630) NBS 765952



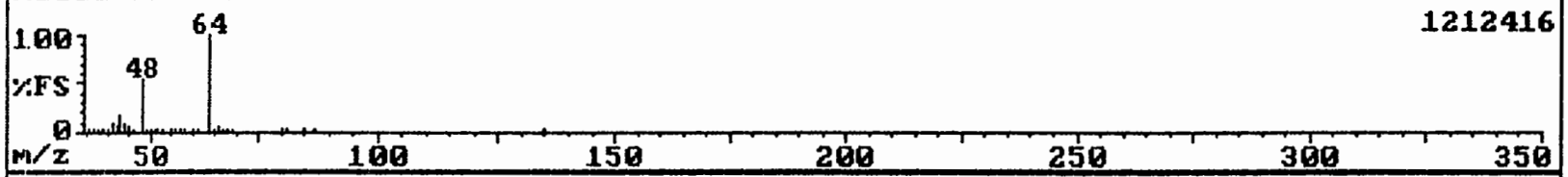
HS355'163 (1.631) REFINE NBS 242 Hits : 242 Searched 696320



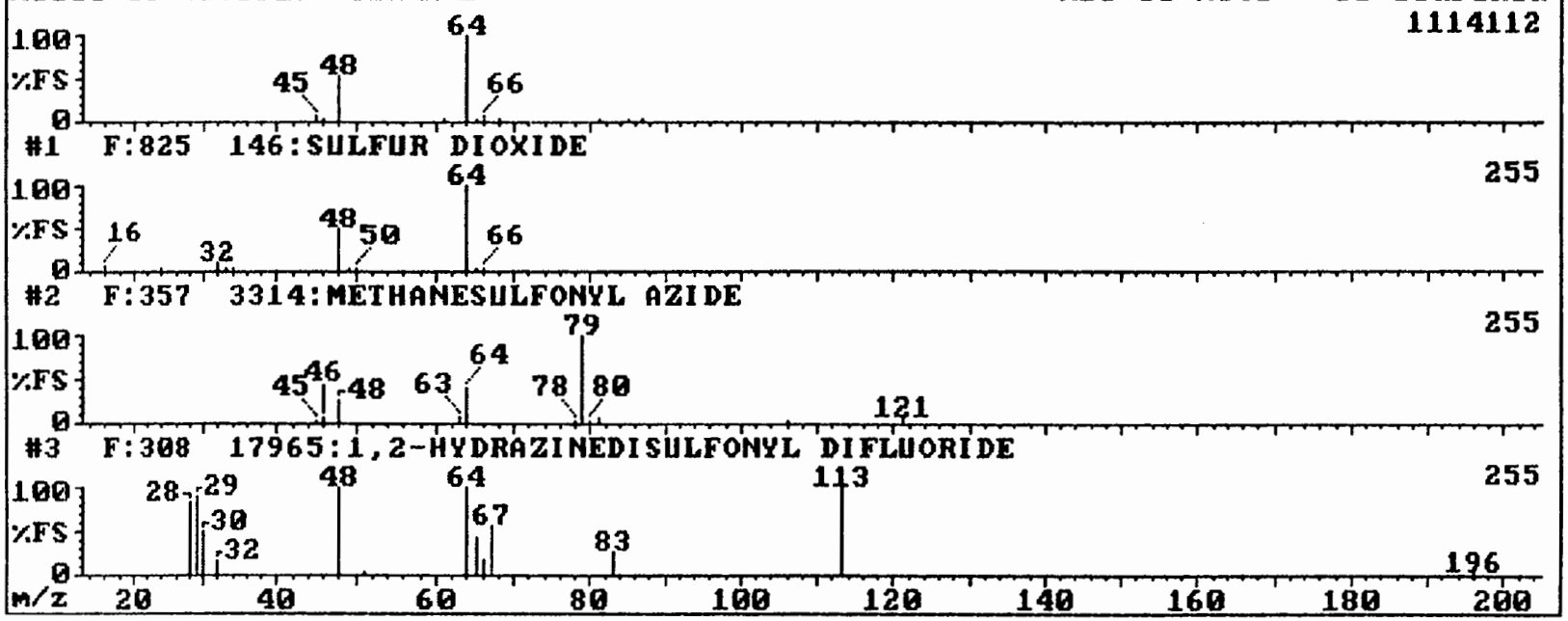
08-Jul-97 23:53 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 1 TUBEA/B T/TC 173-46-6A/B TLI#42284 Instrument H

HS355 89 (0.890)

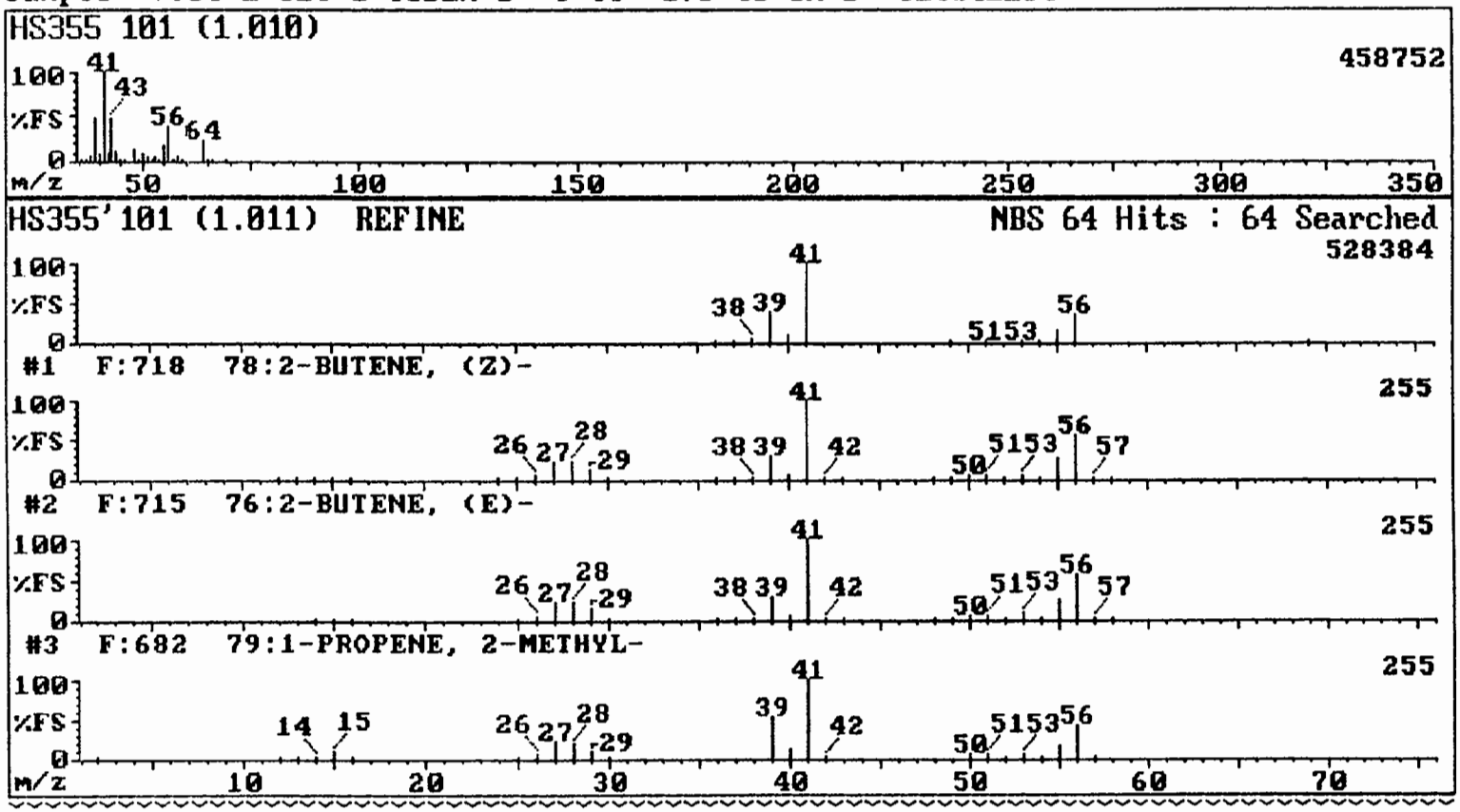


HS355'89 (0.891) REFINE NBS 53 Hits : 53 Searched



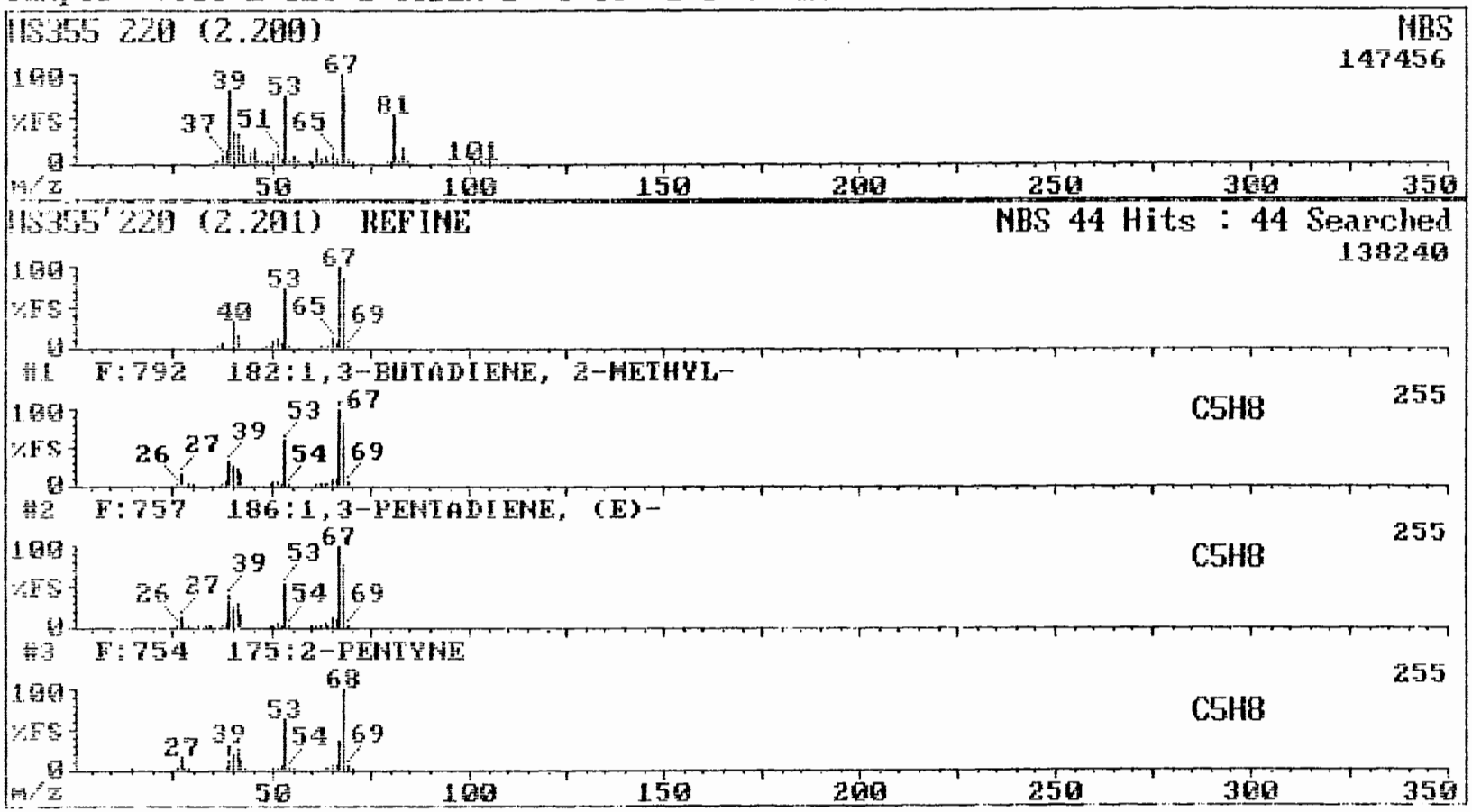
08-Jul-97 23:53 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 1 TUBEA/B T/TC 173-46-6A/B TLI#42284 Instrument H



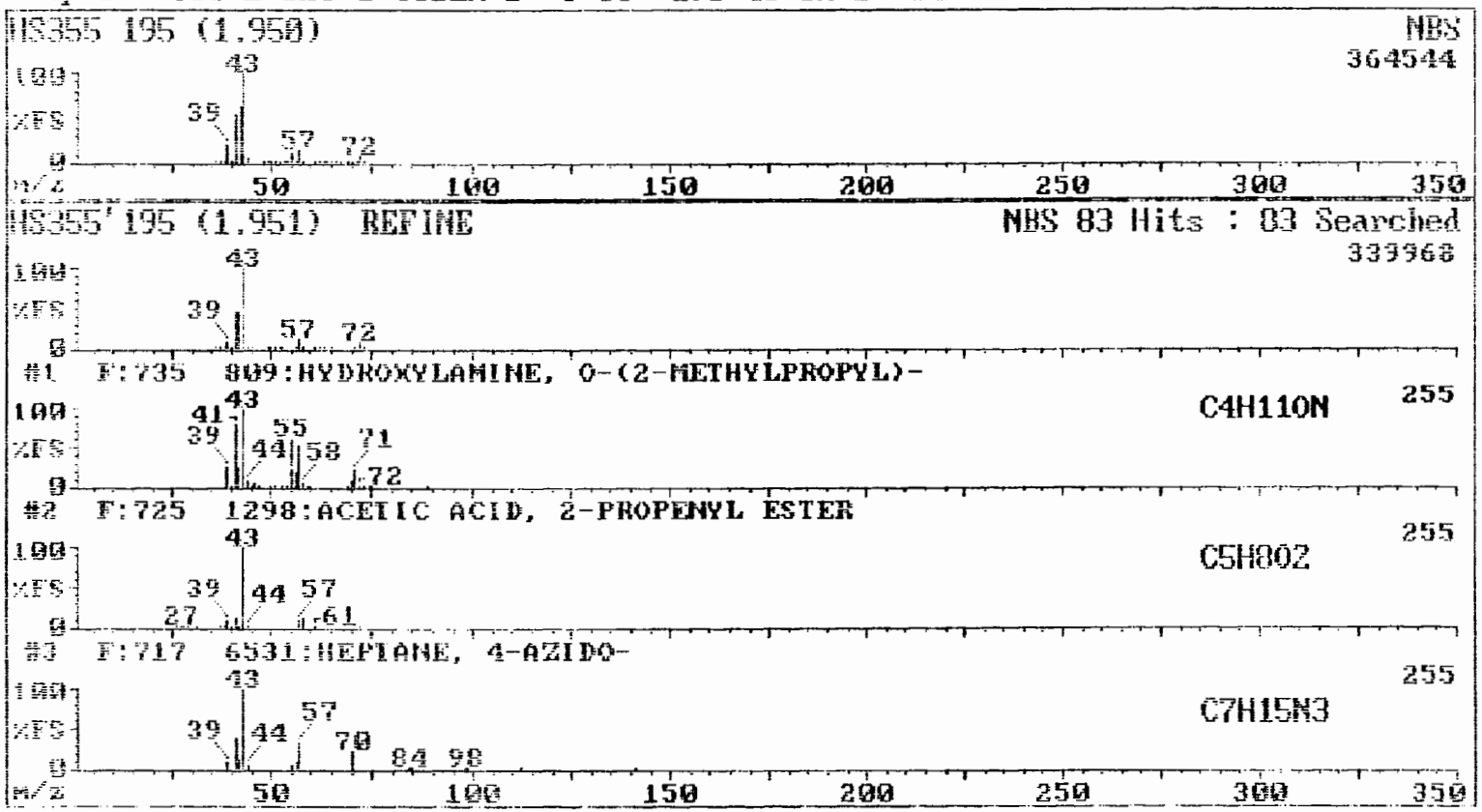
07/08/97 23:53 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 1 TUBEA/B T/TC 173-46-6A/B TLI#42284 Instrument: H



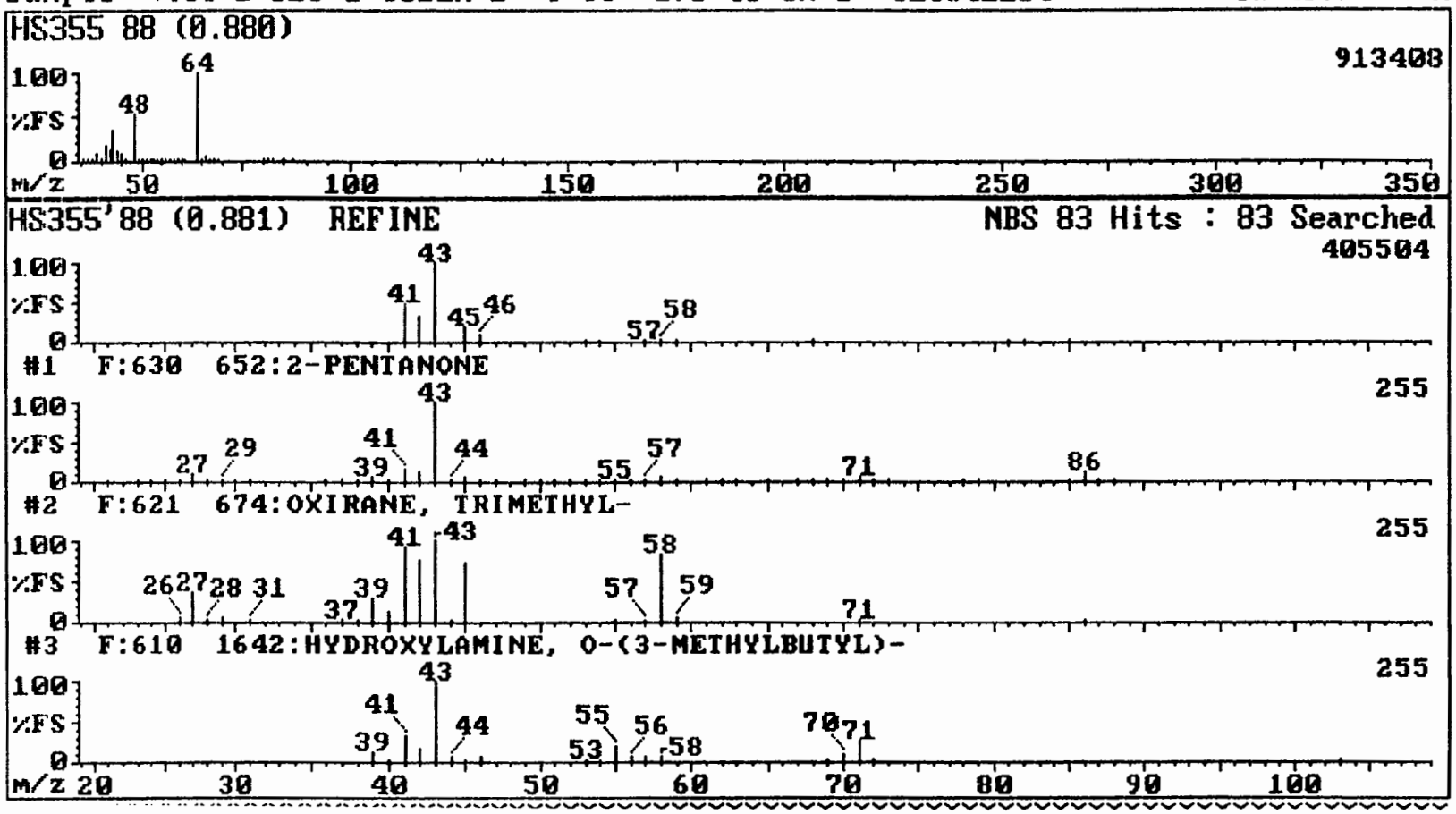
07/08/97 23:53 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 1 TUBEA/B T/TC 173-46-6A/B TLI#42284 Instrument: H



08-Jul-97 23:53 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 1 TUBEA/B T/TC 173-46-6A/B TLI#42284 Instrument H



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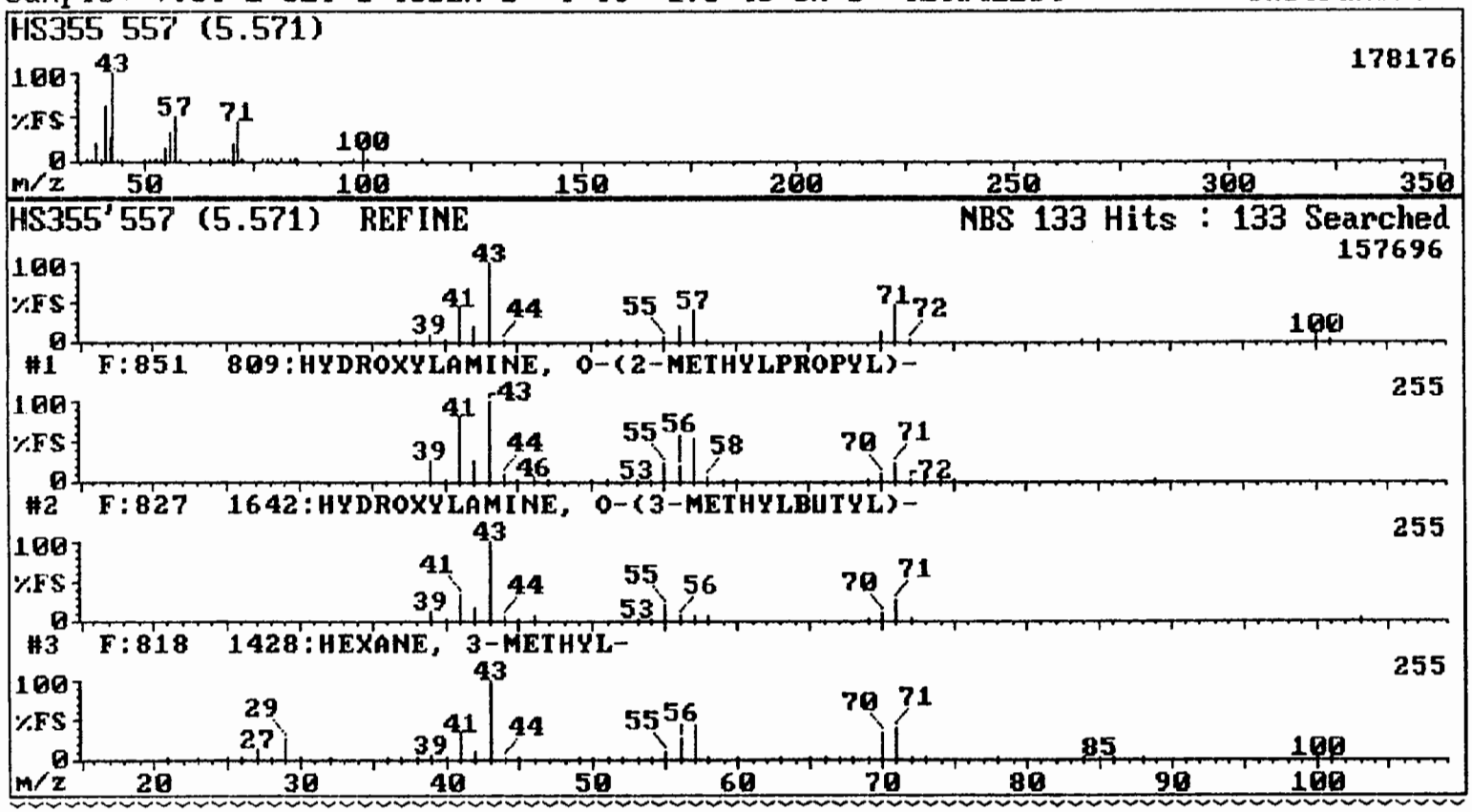
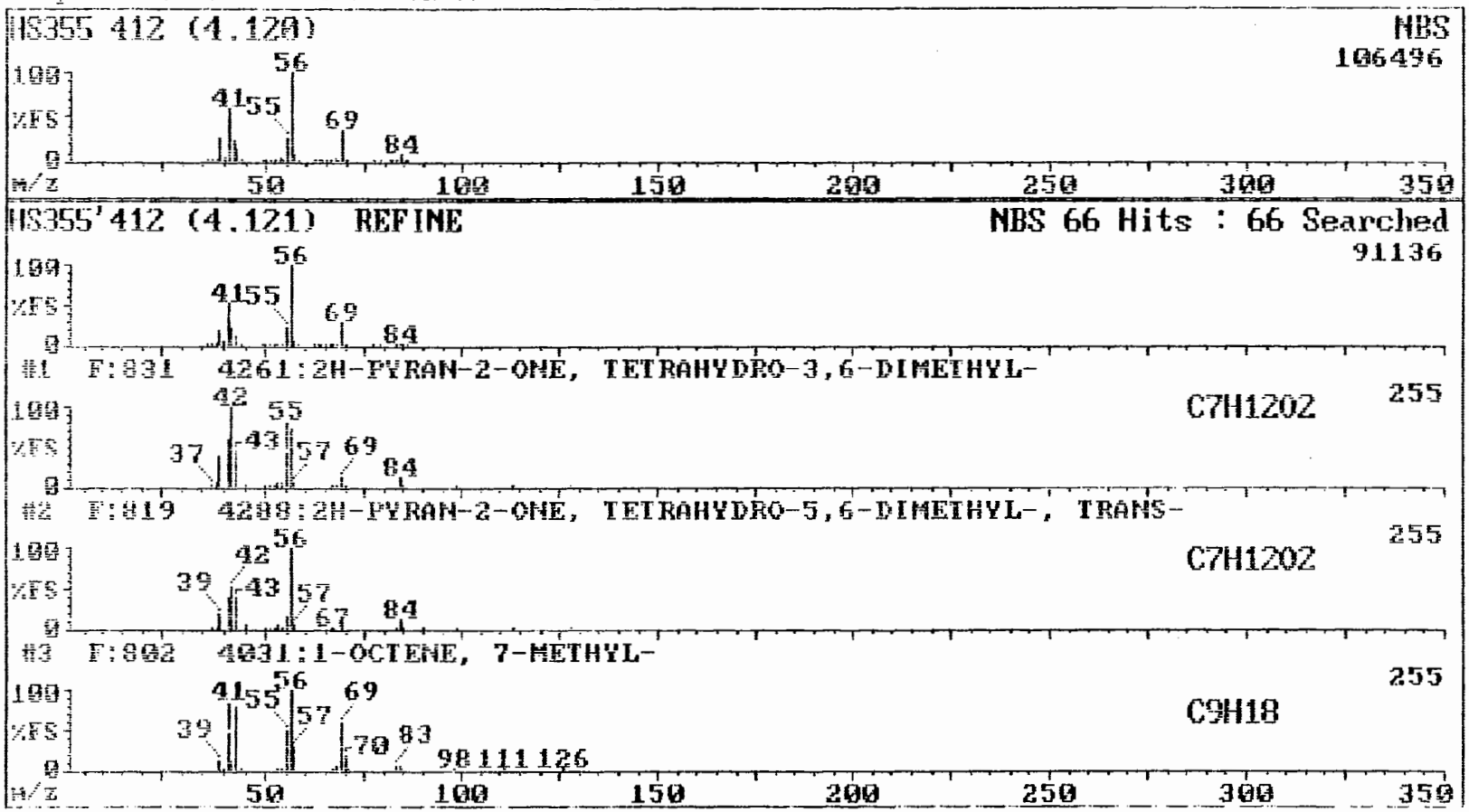
Sample: VOST-2 SET 1 TUBEA/B T/TC 173-46-6A/B TLI#42284 Instrument H



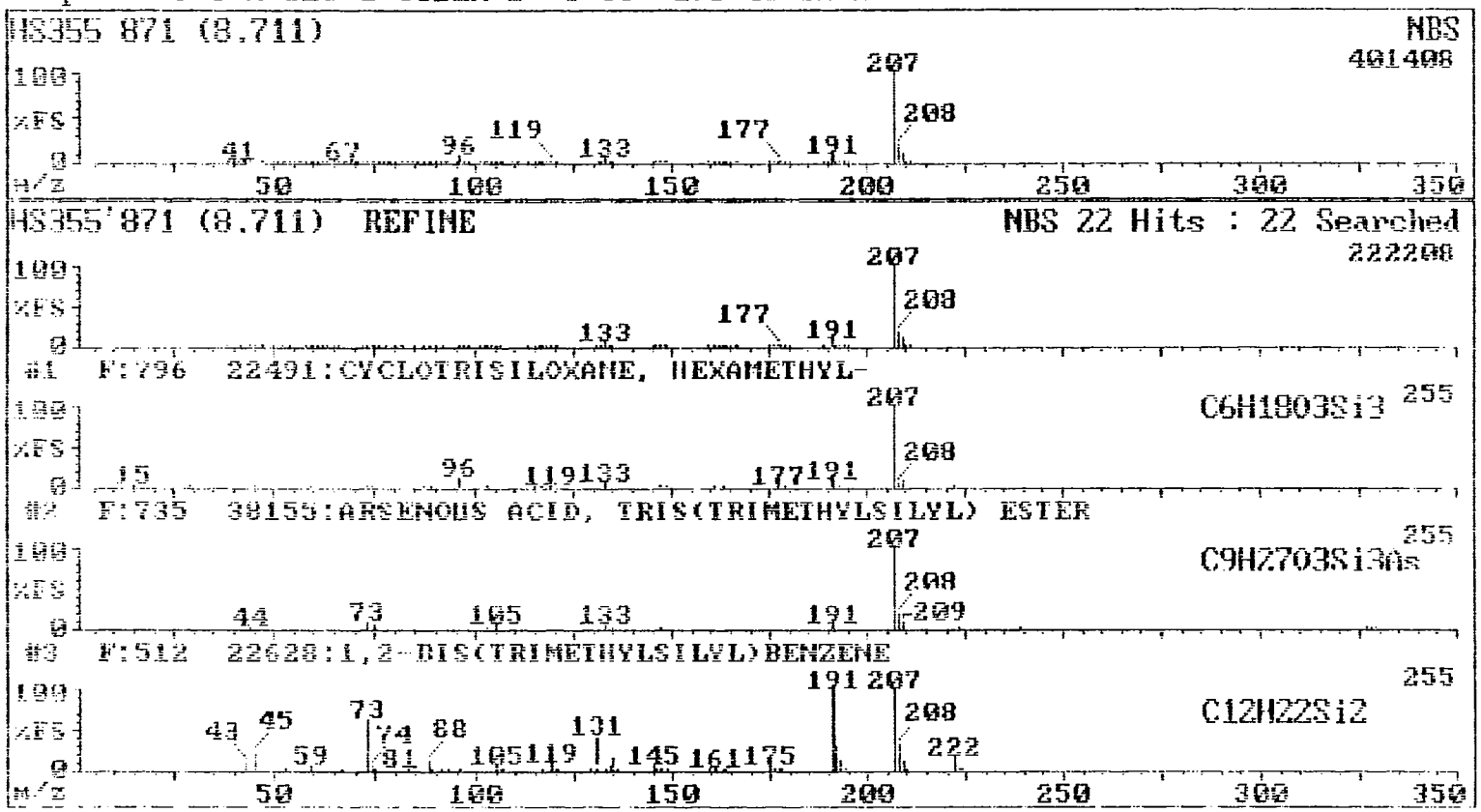
07/08/97 23:53 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 1 TUBEA/B T/TC 173-46-6A/B TLI#42284 Instrument: H



07/00/97 23:53 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 1 TUBEA/B I/TC 173-46-6A/B TLI#42284 Instrument: H



Pacific Environmental Services

Project Number: 42284 | Method 8240A VOST
Sample File: HS365 | Sample ID: VOST-2 SET 2 TUBEA/B T/TC

Client Project: S407-003 | Date Received: 06/30/97 | Response File: ICALH708
TLI ID: 173-46-7A,B
Date Analyzed : 07/09/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
Bromochloromethane		IS 1	4.49		
Chloromethane	0.093		0.93		0.05
Vinyl Chloride		U		0.001	0.05
1,3-Butadiene	0.143		1.08		0.05
Bromomethane	0.019	J	1.42		0.05
Chloroethane	0.004	J	1.54		0.05
Vinyl bromide		U		0.001	0.05
Trichlorofluoromethane	0.053		1.82		0.05
1,1-Dichloroethene		U		0.001	0.05
Iodomethane		U		0.001	0.05
Carbon disulfide	0.490		2.49		0.05
Acetone	0.082	B	2.55		0.05
Allyl chloride		U		0.001	0.05
Methylene chloride	0.349	B	2.96		0.05
trans-1,2-Dichloroethene		U		0.001	0.05
tert-Butyl methyl ether		U		0.001	0.05
Acrylonitrile		U		0.003	0.05
n-Hexane	0.210		3.55		0.05
1,1-Dichloroethane		U		0.001	0.05
1,2-Epoxybutane		U		0.003	0.05
cis-1,2-Dichloroethene		U		0.001	0.05
Chloroform		U		0.001	0.05
1,2-Dichloroethane		U		0.001	0.05
Isooctane		U		0.001	0.05
1,4-Difluorobenzene		IS 2	5.64		
Vinyl acetate		U		0.001	0.05

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

Triangle Laboratories of RTP, Inc.
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Savar v3.5
Printed: 15:02 07/22/1997

Pacific Environmental Services

Project Number: 42284 | **Method 8240A VOST**
Sample File: HS365 | **Sample ID: VOST-2 SET 2 TUBEA/B T/TC**

Client Project: S407-003 | **Date Received: 06/30/97** | **Response File: ICALH708**
TLI ID: 173-46-7A,B
Date Analyzed : 07/09/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
2-Butanone	0.013	J	4.37		0.05
1,1,1-Trichloroethane		U		0.001	0.05
Carbon tetrachloride		U		0.001	0.05
Benzene	0.959	B	5.11		0.05
Trichloroethene		U		0.001	0.05
1,2-Dichloropropane		U		0.001	0.05
Ethyl acrylate		U		0.001	0.05
Methyl methacrylate	0.027	J	6.47		0.05
Bromodichloromethane		U		0.001	0.05
cis-1,3-Dichloropropene		U		0.001	0.05
trans-1,3-Dichloropropene		U		0.001	0.05
1,1,2-Trichloroethane		U		0.001	0.05
Dibromochloromethane		U		0.001	0.05
Ethylene dibromide		U		0.001	0.05
Bromoform		U		0.001	0.05
Chlorobenzene-d_5		IS 3	9.76		
4-Methyl-2-pentanone		U		0.001	0.05
Toluene	0.433	B	7.58		0.05
Tetrachloroethene	0.001	J	8.38		0.05
2-Hexanone		U		0.001	0.05
Chlorobenzene	0.005	J	9.81		0.05
Ethylbenzene	0.066		10.10		0.05
m-/p-Xylene	0.145		10.33		0.10
o-Xylene	0.063		11.03		0.05
Styrene	0.273		11.08		0.05
1,1,2,2-Tetrachloroethane	0.015	J	12.52		0.05

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

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Pacific Environmental Services

Project Number: 42284 | **Method 8240A VOST**
Sample File: HS365 | **Sample ID: VOST-2 SET 2 TUBEA/B T/TC**

Client Project: S407-003 | **Date Received: 06/30/97** | **Response File: ICALH708**
TLI ID: 173-46-7A,B
Date Analyzed : 07/09/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
Cumene	0.007	J	11.81		0.05

Surrogate Summary	Amount (ug)	RT	IS Ref	%REC
1,2-Dichloroethane-d_4	0.231	5.09	1	92
Benzene-d_6	0.250	5.07	2	100
Toluene-d_8	0.281	7.49	3	112

Reviewed by TW Date 7/22/97

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

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Printed: 15:02 07/22/1997

Pacific Environmental Services

Project Number:	42284	Method 8240A	
Sample File:	HS365	Sample ID:	VOST-2 SET 2 TUBEA/B T/TC

Client Project:	S407-003	Date Received:	06/30/97
TLI ID:	173-46-7A,B	Date Analyzed:	07/09/97
	Dilution Factor:	1.00	

Tentatively Identified Compounds

Name	RT	Area	IS RT	IS Area	Amount, ug
Unknown	0.721	20117332	4.491	5090038	0.988
C5H8 Isomer	2.190	9295418	4.491	5090038	0.457
Pentane	1.940	8571261	4.491	5090038	0.421
C4H8 isomer	1.011	8112055	4.491	5090038	0.398
Methylbutane Isomer	1.620	7793199	4.491	5090038	0.383
C6H12 Isomer	3.451	4524458	4.491	5090038	0.222
Hexamethylcyclotrisiloxane	8.671	8042815	9.761	10274056	0.196
Methyl Propane Isomer	0.861	3896776	4.491	5090038	0.191
Alkene	9.161	5809888	9.761	10274056	0.141
C13H28 Isomer	10.631	5241712	9.761	10274056	0.128

Triangle Laboratories, Inc.
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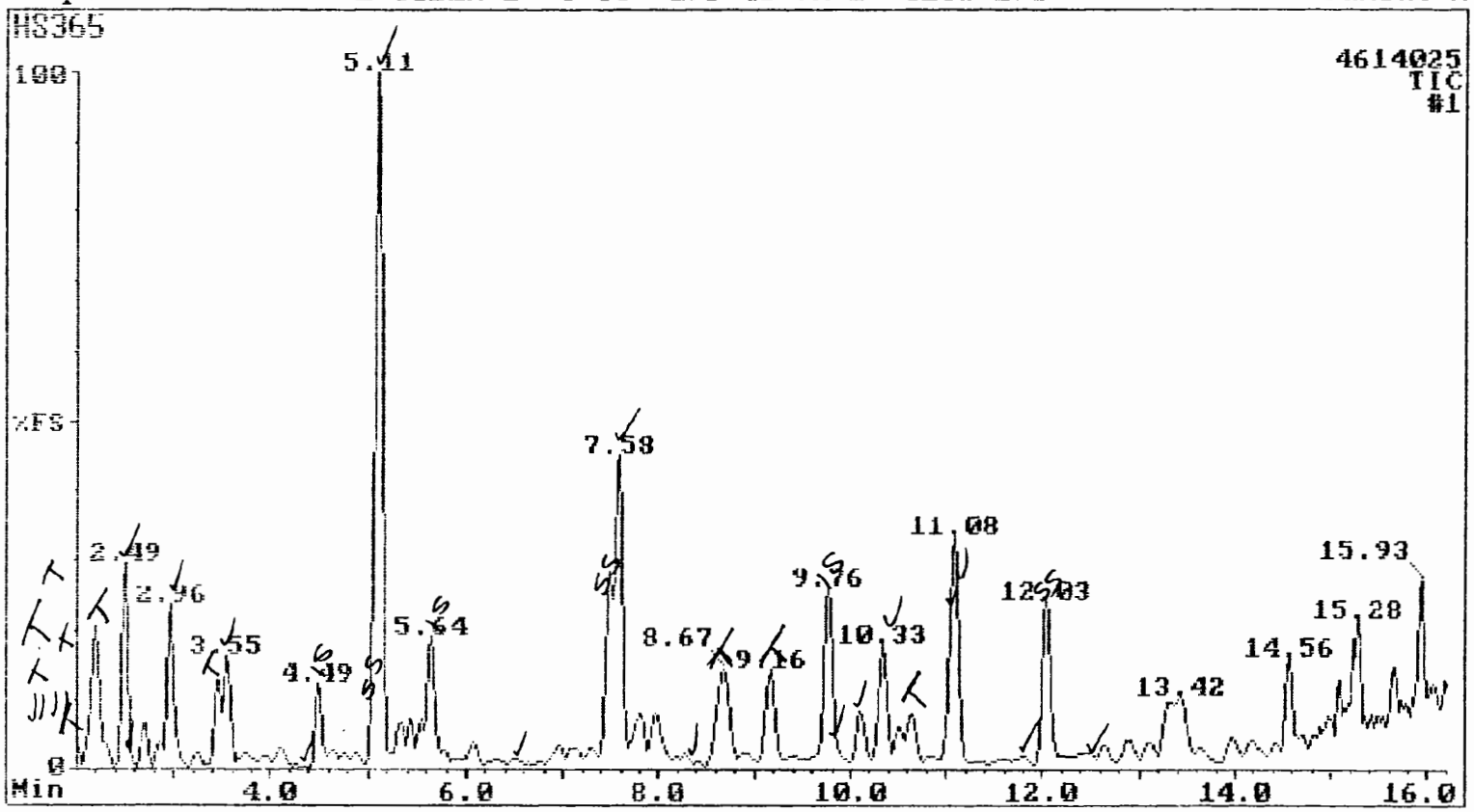
Phone: (919) 544-5729 * Fax: (919) 544-5491

Printed: 10:41 07/25/97

07-09-97 13:18 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 2 TUBEA/B T/TC 173-46-7A/B TLI#42284 Instrument H



Data Review: TW
Date: 7-30-97

QUAN.DB : HS365 LAB-BASE QUAN 07-09-97 13:49

No.	MAT	FOR	REV	Delta	Area	P.Flags	RT	QM	Name
1	100	89	99	-2	356876	bb	4.49	128	Bromochloromethane
2	100	91	97	0	2146296	bv	5.64	114	1,4-Difluorobenzene
3	100	96	98	-1	2745368	bv	9.76	117	Chlorobenzene-d5
4	54	20	66	1	888664	bv	5.09	65	1,2-Dichloroethane-d4
5	99	78	80	0	2482108	bv	5.07	84	Benzene-d6
6	100	88	99	1	3502316	bv	7.49	98	Toluene-d8
~~7~~	~~27~~	~~11~~	~~35~~	~~15~~	~~26336~~	~~A~~	~~12.35~~	98	o-Xylene-d10 FP TW
8	100	87	94	2	1651744	vv	12.04	95	4-Bromofluorobenzene
9	100	79	86	0	279424	vv	0.93	50	Chloromethane
10	0	0	0	0	0		0.00	62	Vinyl Chloride
11	100	76	100	-1	~~1547080~~	~~A~~ 337184	~~1.01~~ 1.08	39	1,3-Butadiene mi TW
12	94	58	95	1	61260	bb	1.42	94	Bromomethane
13	26	29	40	26	~~27776~~	~~A~~ 7112	~~1.79~~ 1.54	64	Chloroethane mi TW
14	0	0	0	0	0		0.00	106	Vinyl bromide
15	90	54	94	-1	215780	bb	1.82	101	Trichlorofluoromethane
16	0	0	0	0	0		0.00	96	1,1-Dichloroethene
17	0	0	0	0	0		0.00	142	Iodomethane
18	100	83	99	0	4410940	bv	2.49	76	Carbon disulfide
19	81	48	82	-1	153088	bb	2.55	43	Acetone
20	0	0	0	0	0		0.00	76	Allyl chloride
21	100	79	94	0	980668	bv	2.96	84	Methylene chloride
22	0	0	0	0	0		0.00	96	trans-1,2-Dichloroethene
~~23~~	~~70~~	~~56~~	~~59~~	~~1~~	~~4508~~	~~A~~	~~3.29~~	73	tert-Butyl methyl ether
~~24~~	~~31~~	~~9~~	~~41~~	~~2~~	~~14666~~	~~bv~~	~~3.24~~	53	Acrylonitrile FP TW
25	100	98	100	0	1404672	bv	3.55	57	n-Hexane
26	0	0	0	0	0		0.00	63	1,1-Dichloroethane
~~27~~	~~58~~	~~47~~	~~58~~	~~7~~	~~84655~~	~~vv~~	~~4.10~~	42	1,2-Epoxybutane FP TW
28	0	0	0	0	0		0.00	96	cis-1,2-Dichloroethene
29	0	0	0	0	0		0.00	83	Chloroform
30	0	0	0	0	0		0.00	62	1,2-Dichloroethane
~~31~~	~~43~~	~~56~~	~~63~~	~~27~~	~~422015~~	~~vv~~	~~5.54~~	57	Isooctane FP TW
~~32~~	~~32~~	~~30~~	~~62~~	~~28~~	~~1310778~~	~~bv~~	~~3.55~~	43	Vinyl acetate FP TW
33	94	76	76	1	4532	bb	4.37	72	2-Butanone
34	0	0	0	0	0		0.00	97	1,1,1-Trichloroethane
35	0	0	0	0	0		0.00	117	Carbon tetrachloride
36	100	94	99	0	10433720	bv	5.11	78	Benzene
37	0	0	0	0	0		0.00	130	Trichloroethene
~~38~~	~~44~~	~~20~~	~~52~~	~~2~~	~~7712~~	~~A~~	~~6.10~~	63	1,2-Dichloropropane FP TW
~~39~~	~~45~~	~~25~~	~~51~~	~~2~~	~~28928~~	~~A~~	~~6.23~~	55	Ethyl acrylate
40	100	78	90	0	55316	vb	6.47	69	Methyl methacrylate
41	0	0	0	0	0		0.00	83	Bromodichloromethane
~~42~~	~~40~~	~~10~~	~~57~~	~~2~~	~~5572~~	~~A~~	~~7.15~~	75	cis-1,3-Dichloropropene FP TW
~~43~~	~~38~~	~~10~~	~~53~~	~~2~~	~~6536~~	~~A~~	~~8.01~~	75	trans-1,3-Dichloropropen FP TW
44	0	0	0	0	0		0.00	97	1,1,2-Trichloroethane
45	0	0	0	0	0		0.00	129	Dibromochloromethane
46	0	0	0	0	0		0.00	107	Ethylene dibromide
~~47~~	~~43~~	~~18~~	~~51~~	~~0~~	~~12536~~	~~bb~~	~~11.33~~	173	Bromoform FP TW
~~48~~	~~38~~	~~33~~	~~78~~	~~19~~	~~135025~~	~~vv~~	~~7.28~~	43	4-Methyl-2-pentanone FP TW
49	100	95	99	1	3520328	bv	7.58	92	Toluene
50	34	11	44	0	4176	A	8.38	164	Tetrachloroethene

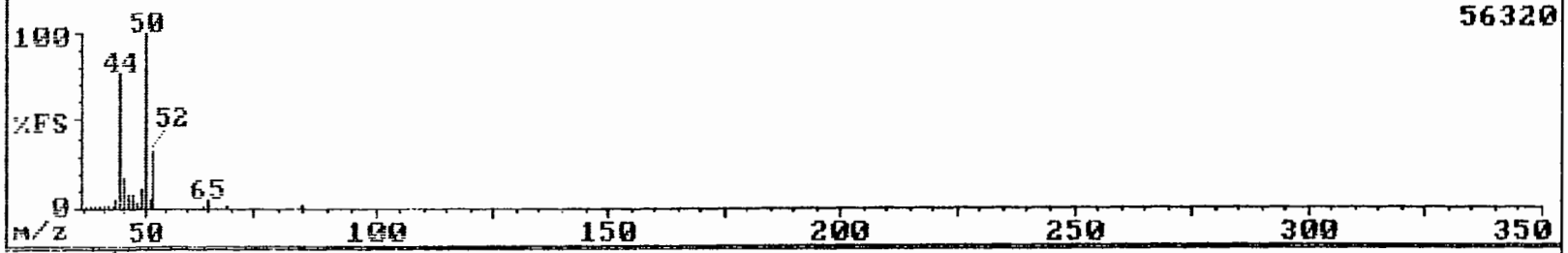
Data Review: TW
Date: 7-20-97

No.	MAT	FOR	REV	Delta	Area	P.Flags	RT	QM	Name
~~51~~	~~34~~	~~6~~	~~59~~	~~-9~~	~~34030~~	~~4~~	~~8.70~~	43	2-Hexanone FP
52	51	17	67	1	56524	bb	9.81	112	Chlorobenzene
53	100	90	99	1	370676	bv	10.10	106	Ethylbenzene
54	100	87	94	0	1014884	vv	10.33	106	m-/p-Xylene
55	100	81	86	1	420012	bv	11.03	106	o-Xylene
56	100	93	97	1	3017696	bv	11.08	104	Styrene
57	53	17	70	1	42042	vv	12.52	83	1,1,2,2-Tetrachloroethan
58	78	47	81	1	158576	bv	11.81	105	Cumene

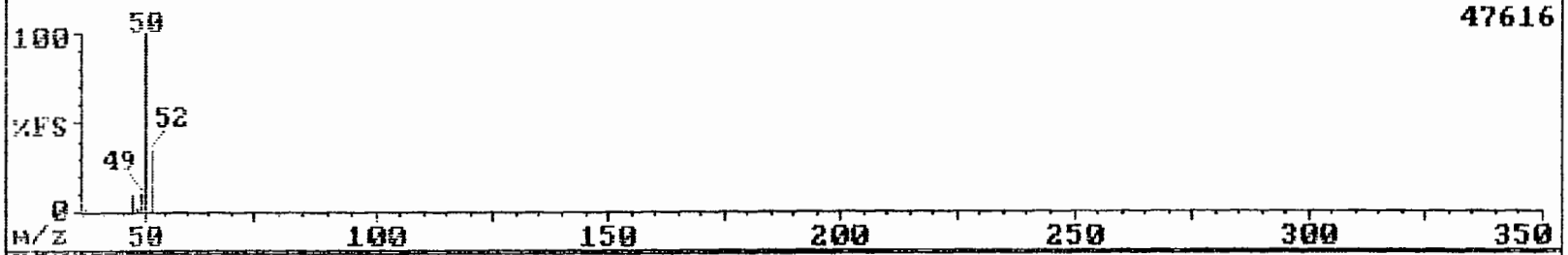
07-09-97 13:18 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 2 TUBEA/B T/TC 173-46-7A/B TLI#42284 Instrument H

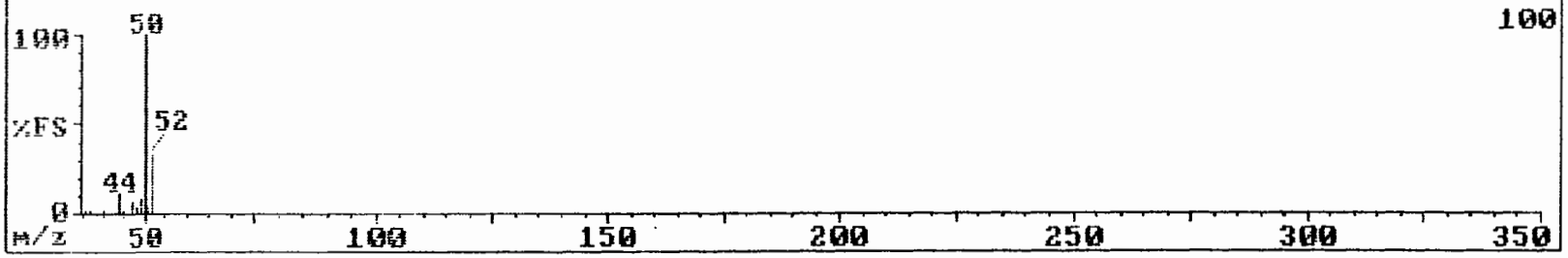
HS365 93 (0.930) 56320



HS365'93 (0.931) REFINE 47616

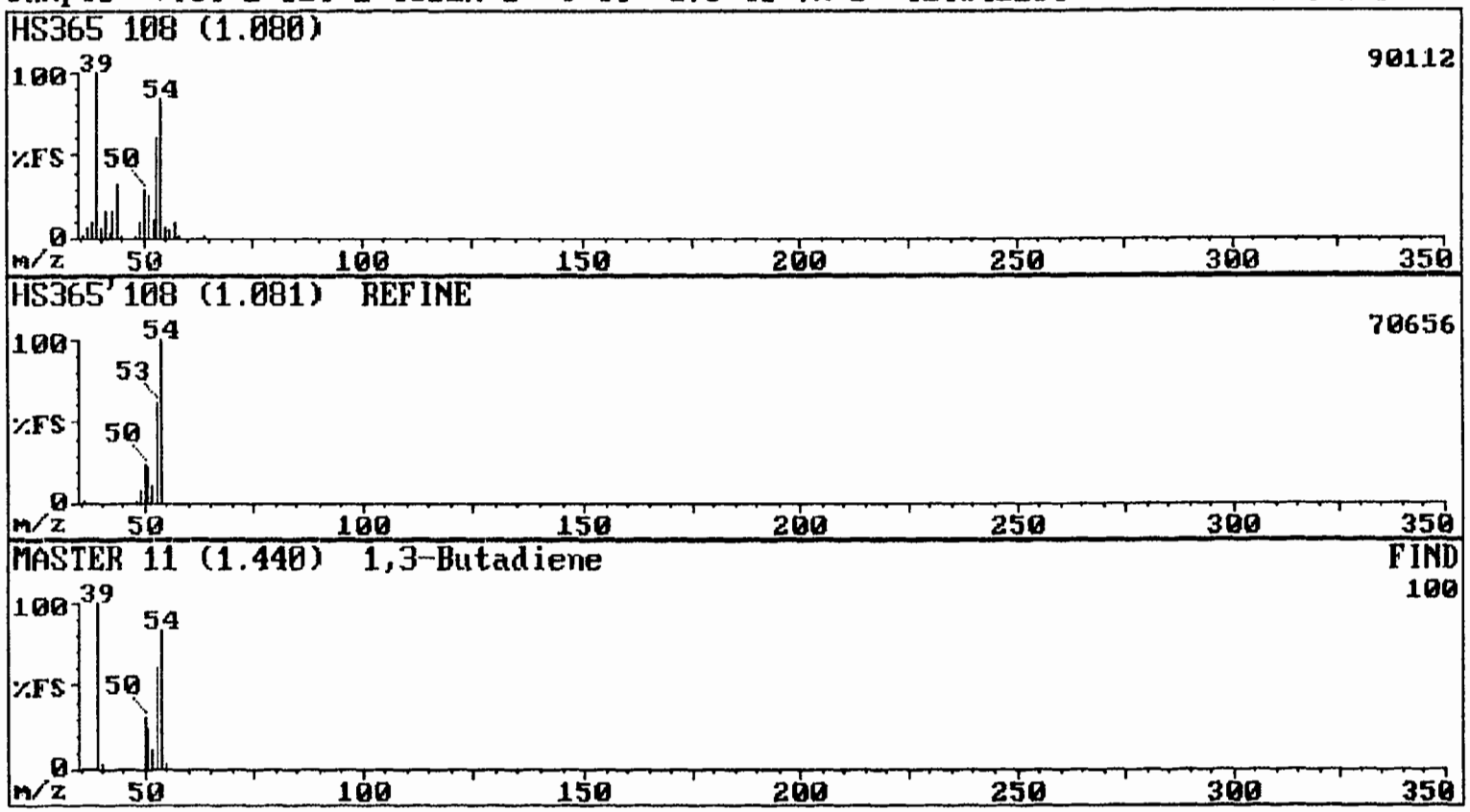


NT2CAA 9 (0.930) Chloromethane FIND 100



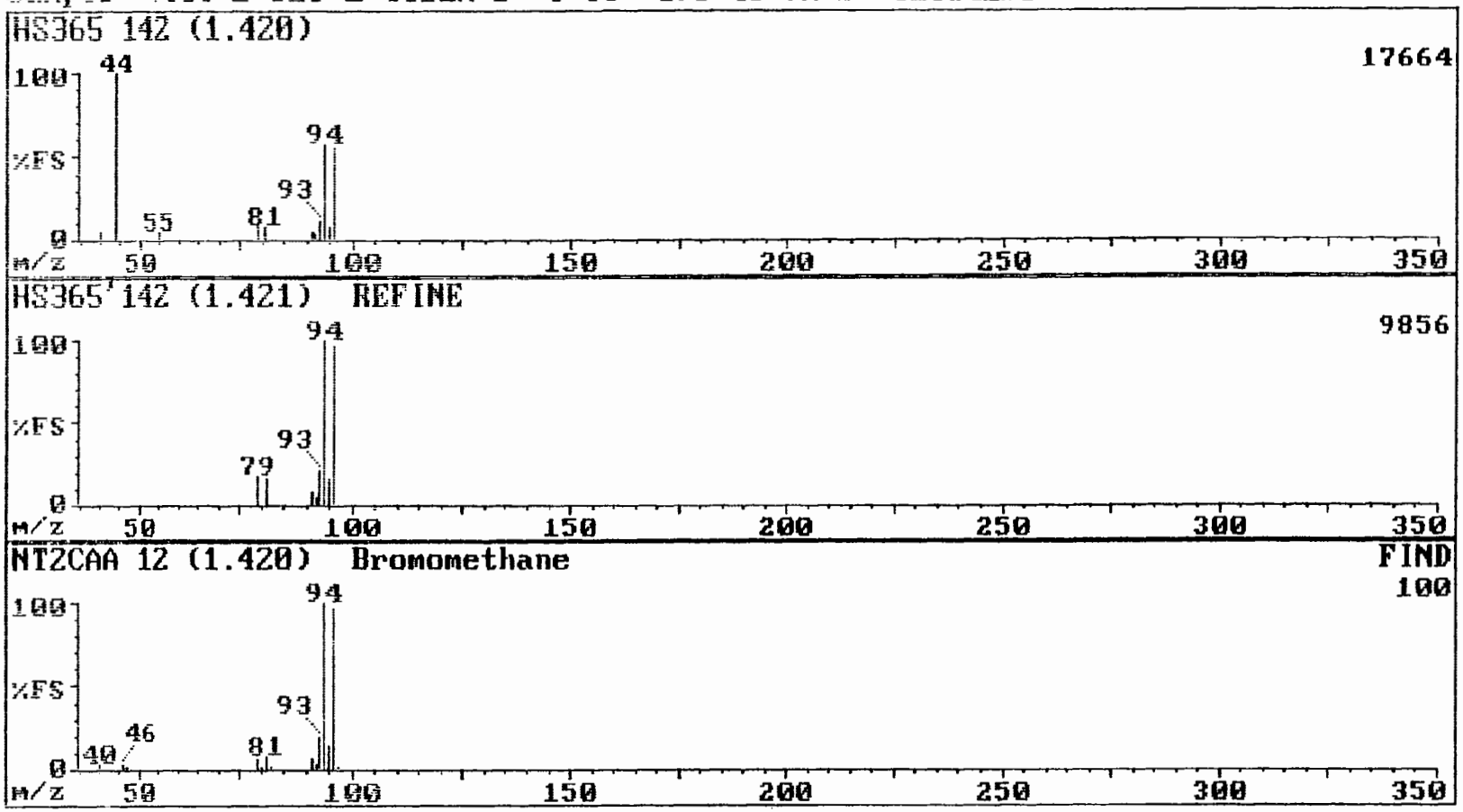
09-Jul-97 13:18 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 2 TUBEA/B T/TC 173-46-7A/B TLI#42284 Instrument H



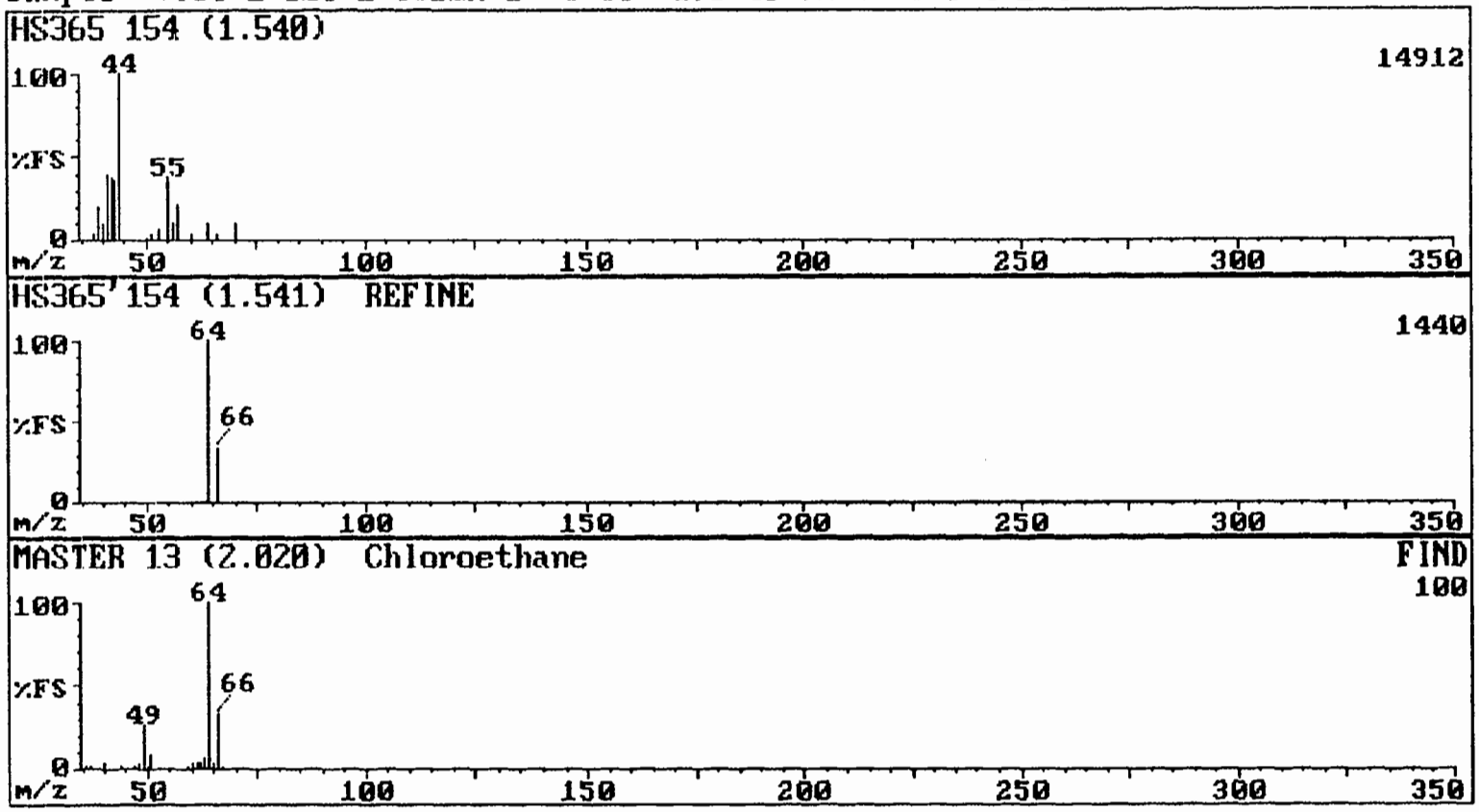
07-09-97 13:18 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 2 TUBEA/B T/TC 173-46-7A/B TLI#42284 Instrument H



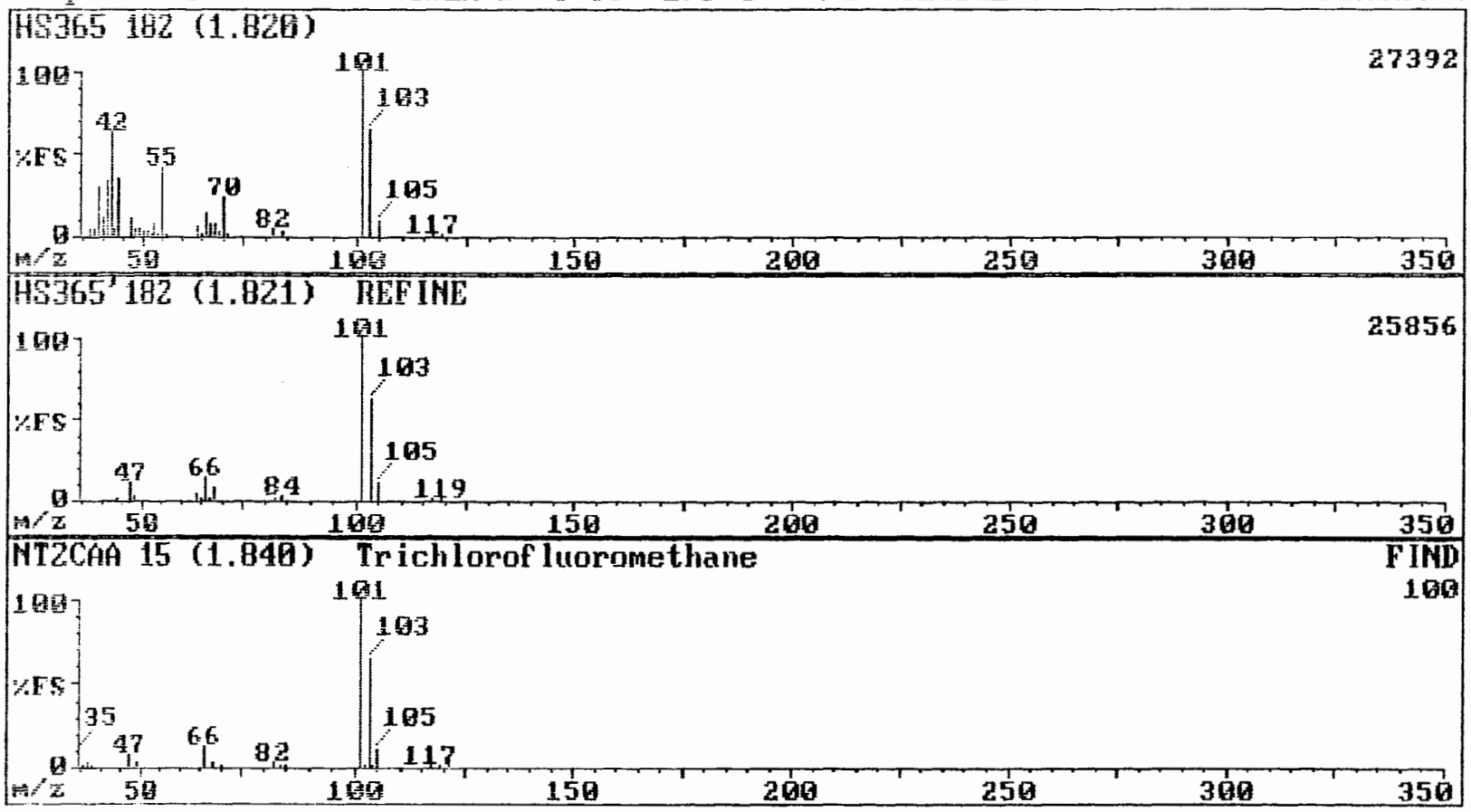
09-Jul-97 13:18 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 2 TUBEA/B T/TC 173-46-7A/B TLI#42284 Instrument H



07-09-97 13:18 Triangle Laboratories of RTP, Inc. (919) 544-5729

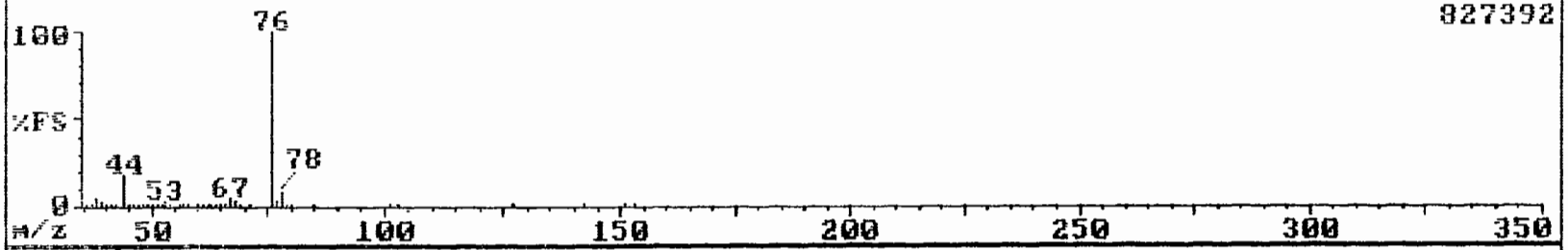
Sample: VOST-2 SET 2 TUBEA/B T/TC 173-46-7A/B TLI#42284 Instrument H



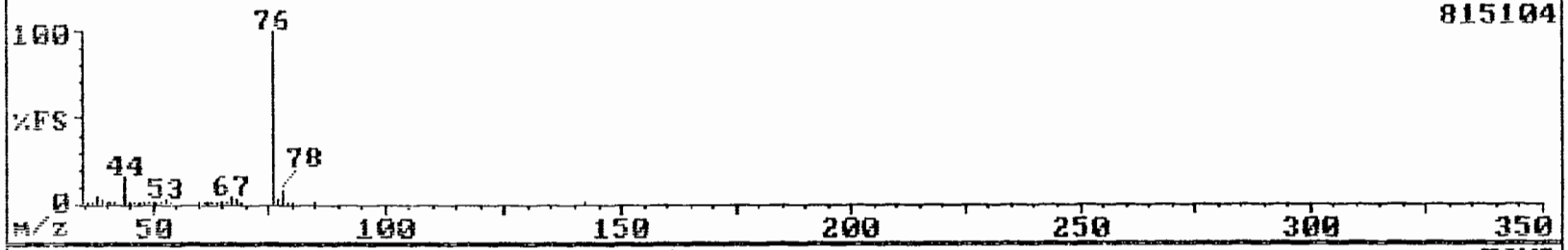
07-09-97 13:18 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 2 TUBEA/B T/TC 173-46-7A/B TLI#42284 Instrument H

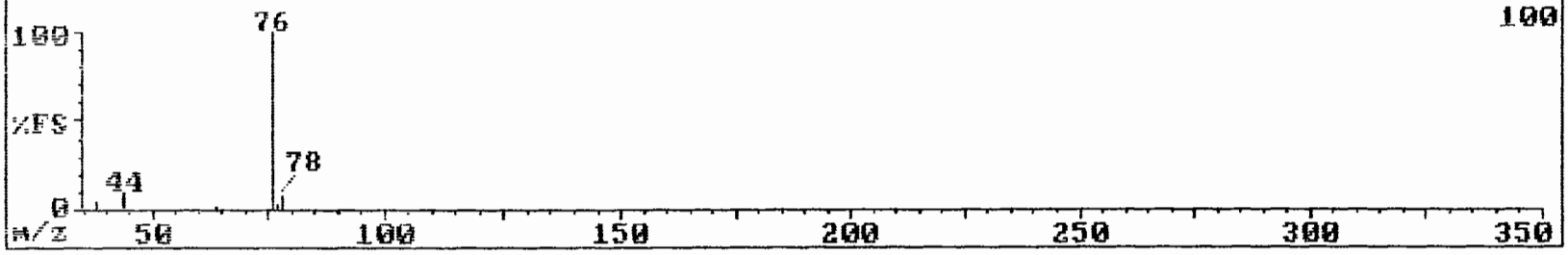
HS365 249 (2.490) 827392



HS365'249 (2.491) REFINE 815104

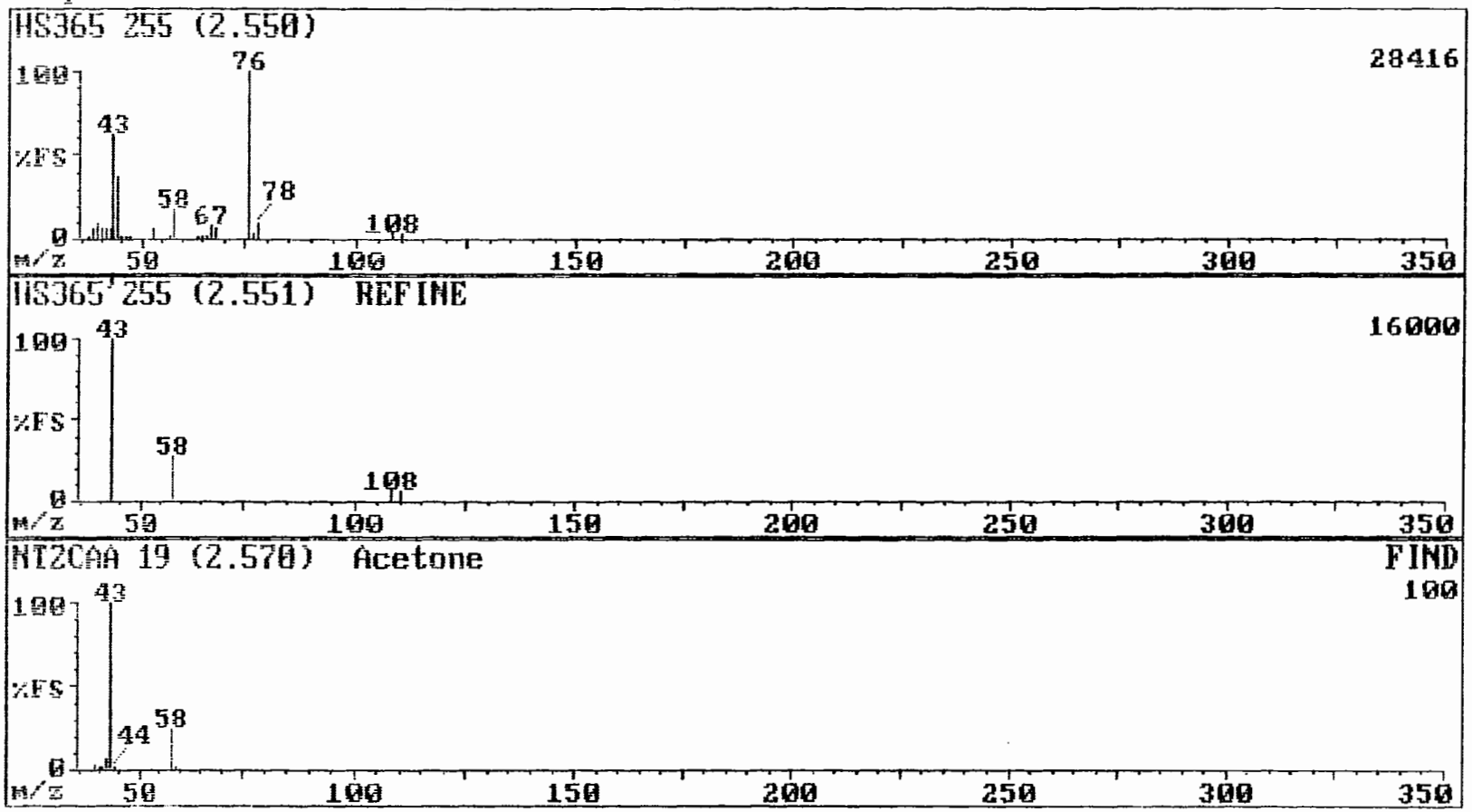


NTZCAA 18 (2.500) Carbon disulfide FIND 100



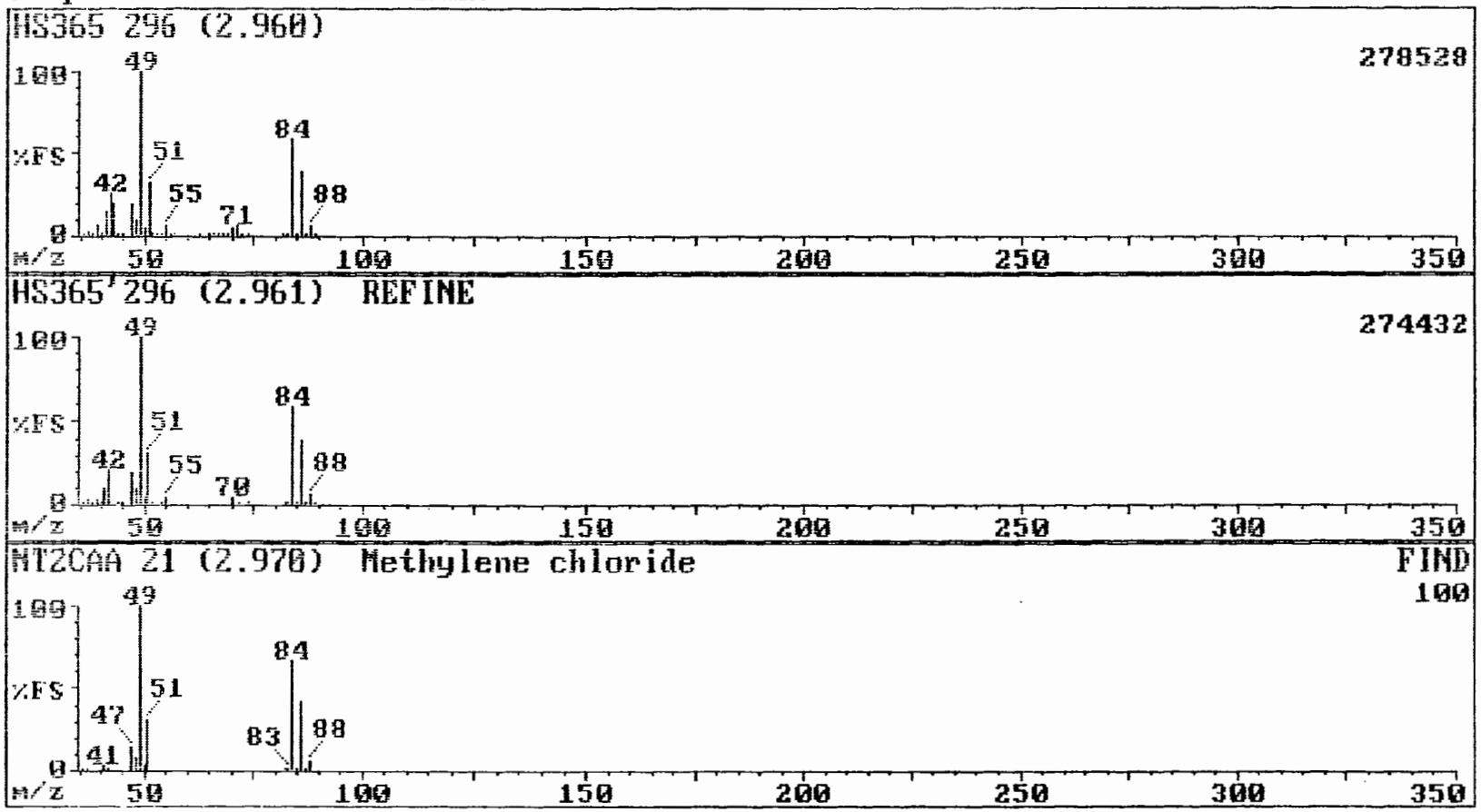
07-09-97 13:18 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 2 TUBEA/B T/TC 173-46-7A/B TLI#42284 Instrument H



07-09-97 13:18 Triangle Laboratories of RTP, Inc. (919) 544-5729

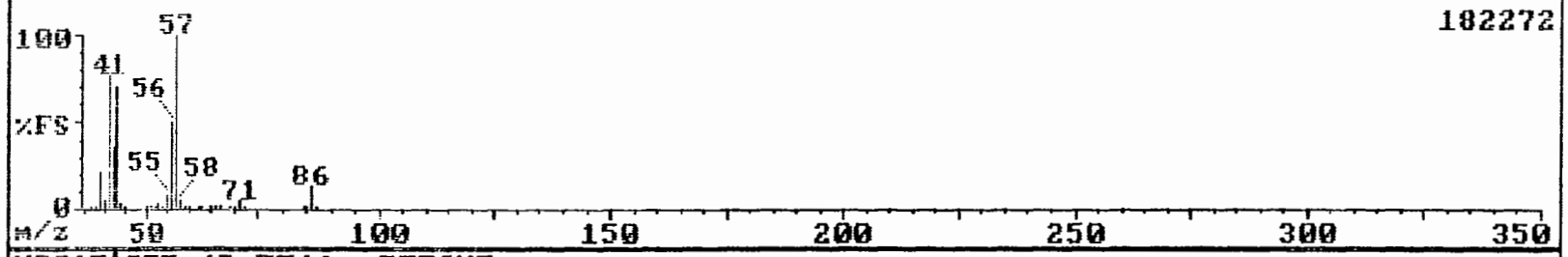
Sample: VOST-2 SET 2 TUBEA/B T/TC 173-46-7A/B TLI#42284 Instrument H



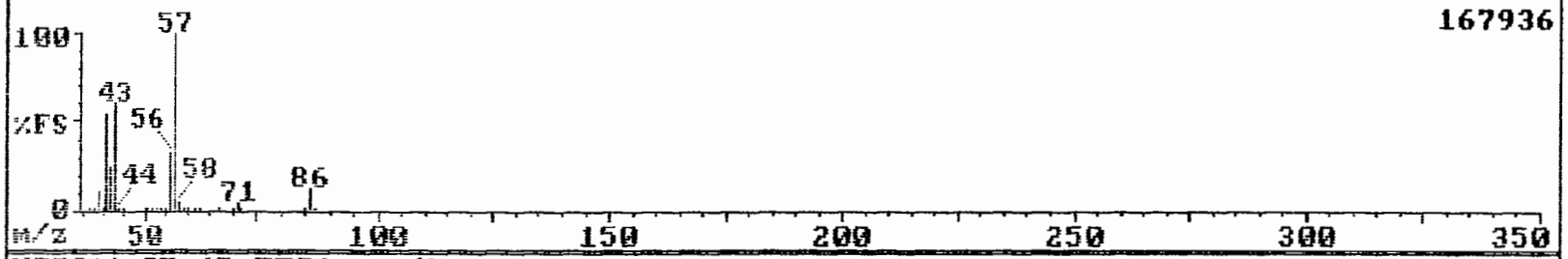
07-09-97 13:18 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 2 TUBEA/B T/TC 173-46-7A/B TLI#42284 Instrument H

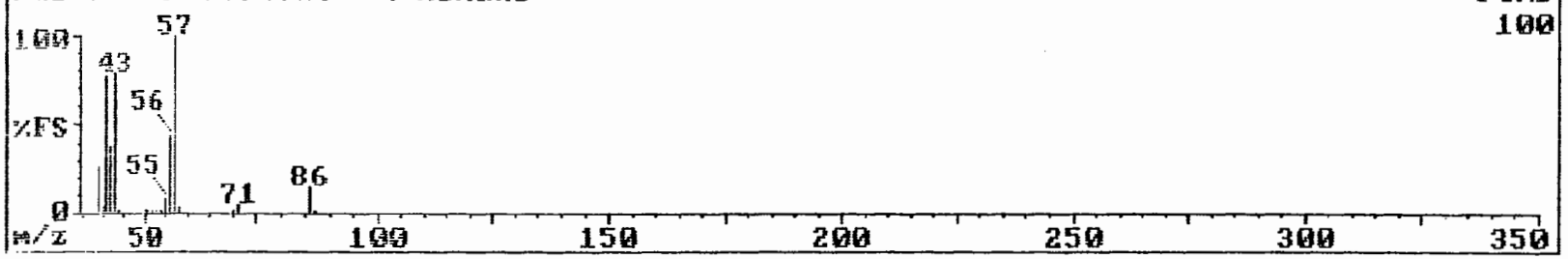
HS365 355 (3.550)



HS365 355 (3.551) REFINE

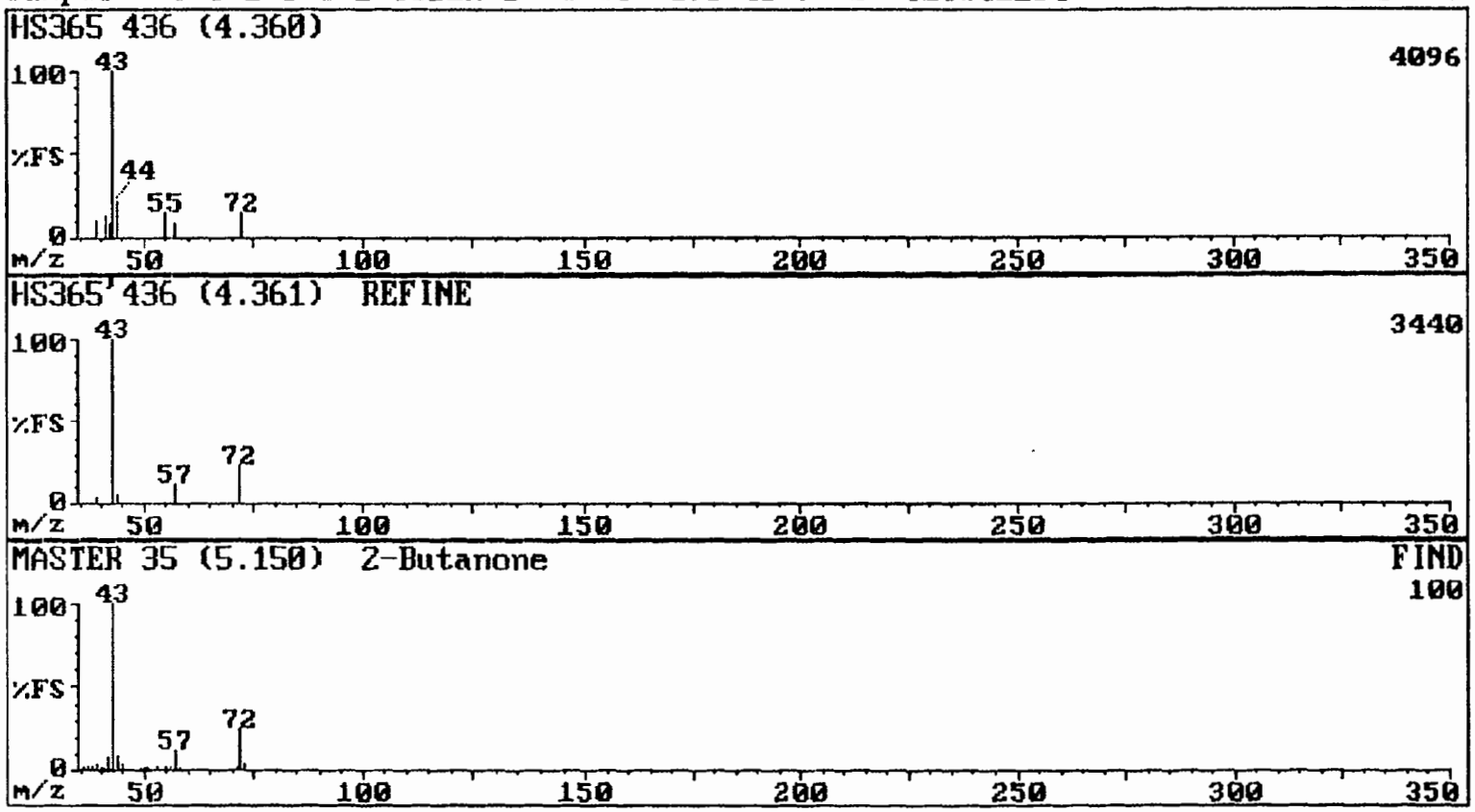


NTZCAA 25 (3.570) n-Hexane FIND 100



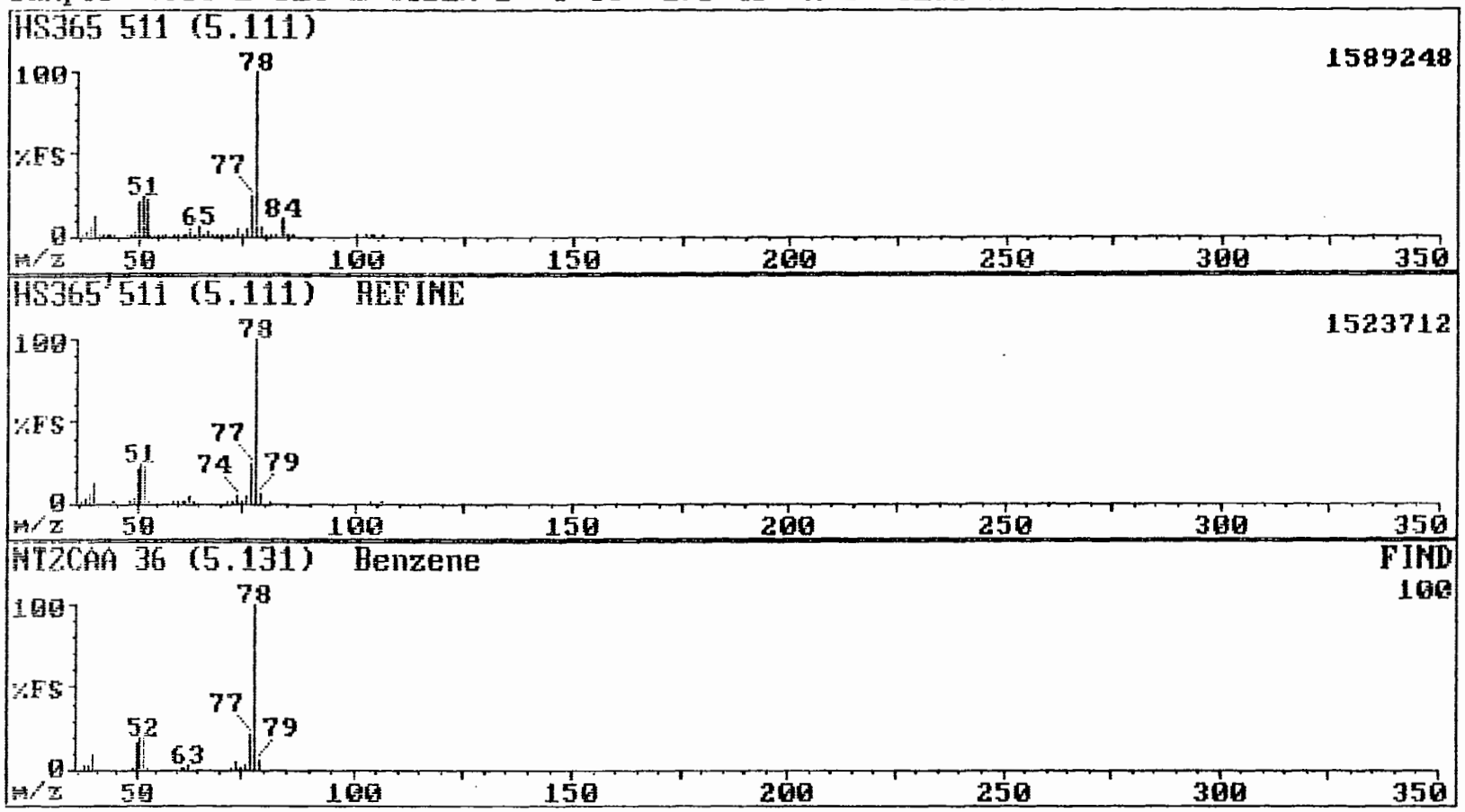
09-Jul-97 13:18 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 2 TUBEA/B T/TC 173-46-7A/B TLI#42284 Instrument H



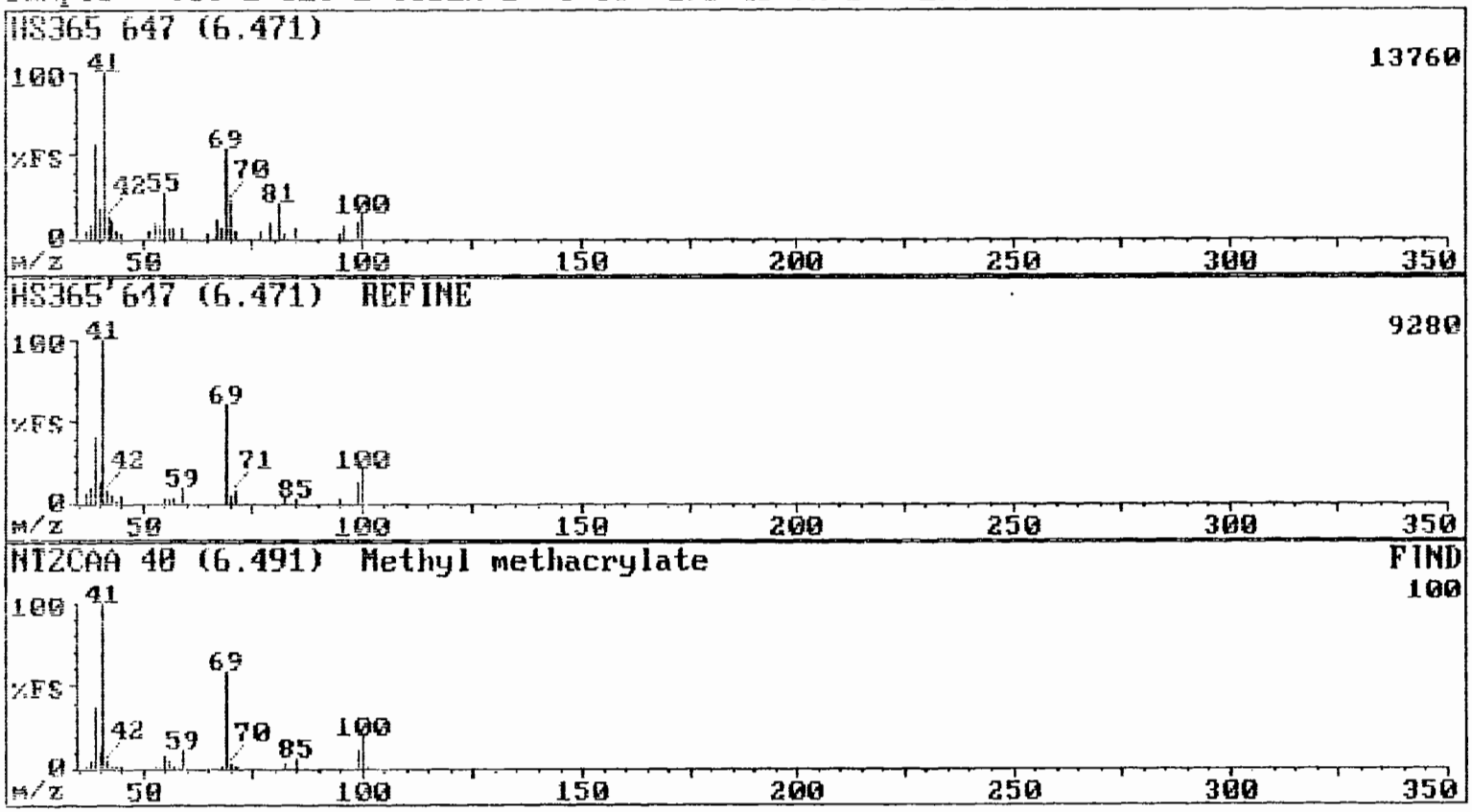
07-09-97 13:18 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 2 TUBEA/B T/TC 173-46-7A/B TLI#42284 Instrument H



07-09-97 13:18 Triangle Laboratories of RTP, Inc. (919) 544-5729

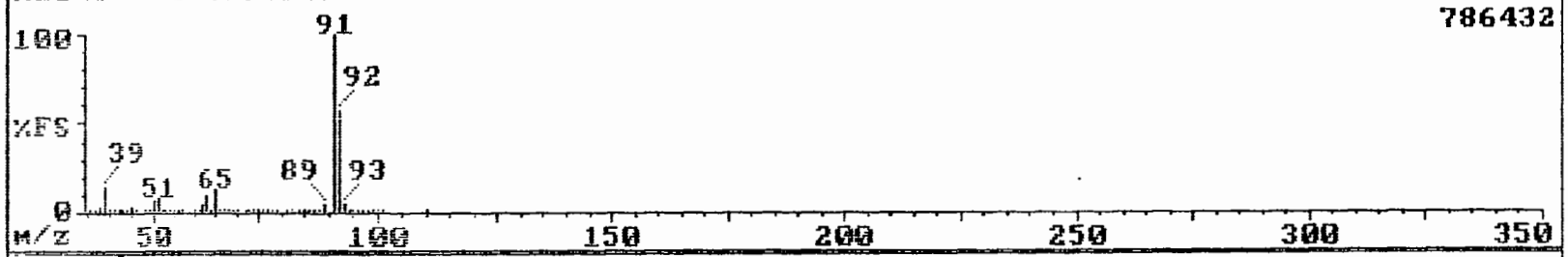
Sample: VOST-2 SET 2 TUBEA/B T/TC 173-46-7A/B TLI#42284 Instrument H



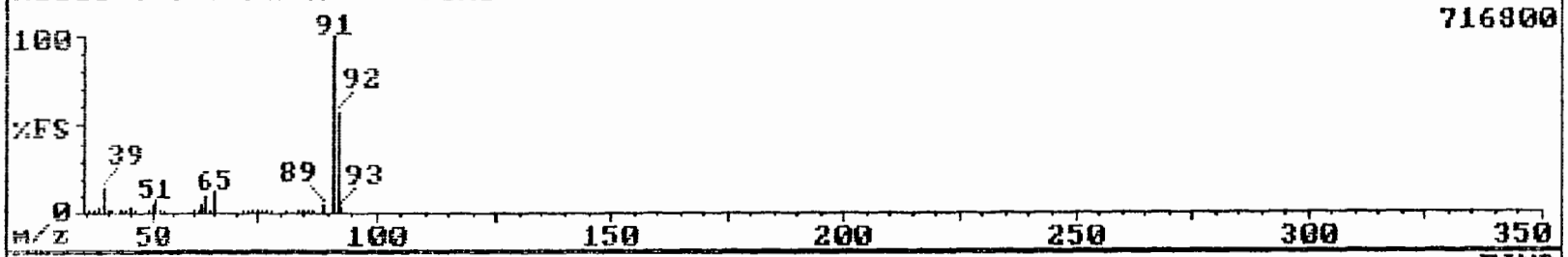
07-09-97 13:18 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 2 TUBEA/B T/TC 173-46-7A/B TLI#42284 Instrument H

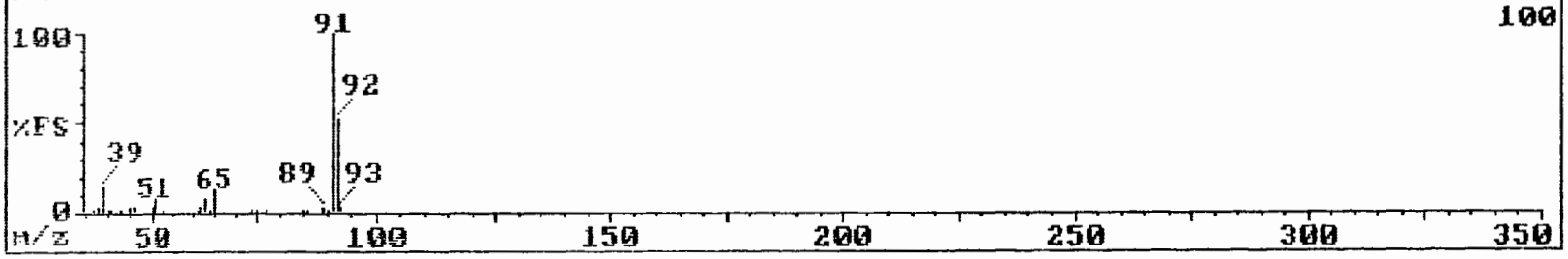
HS365 758 (7.581)



HS365'758 (7.581) REFINE

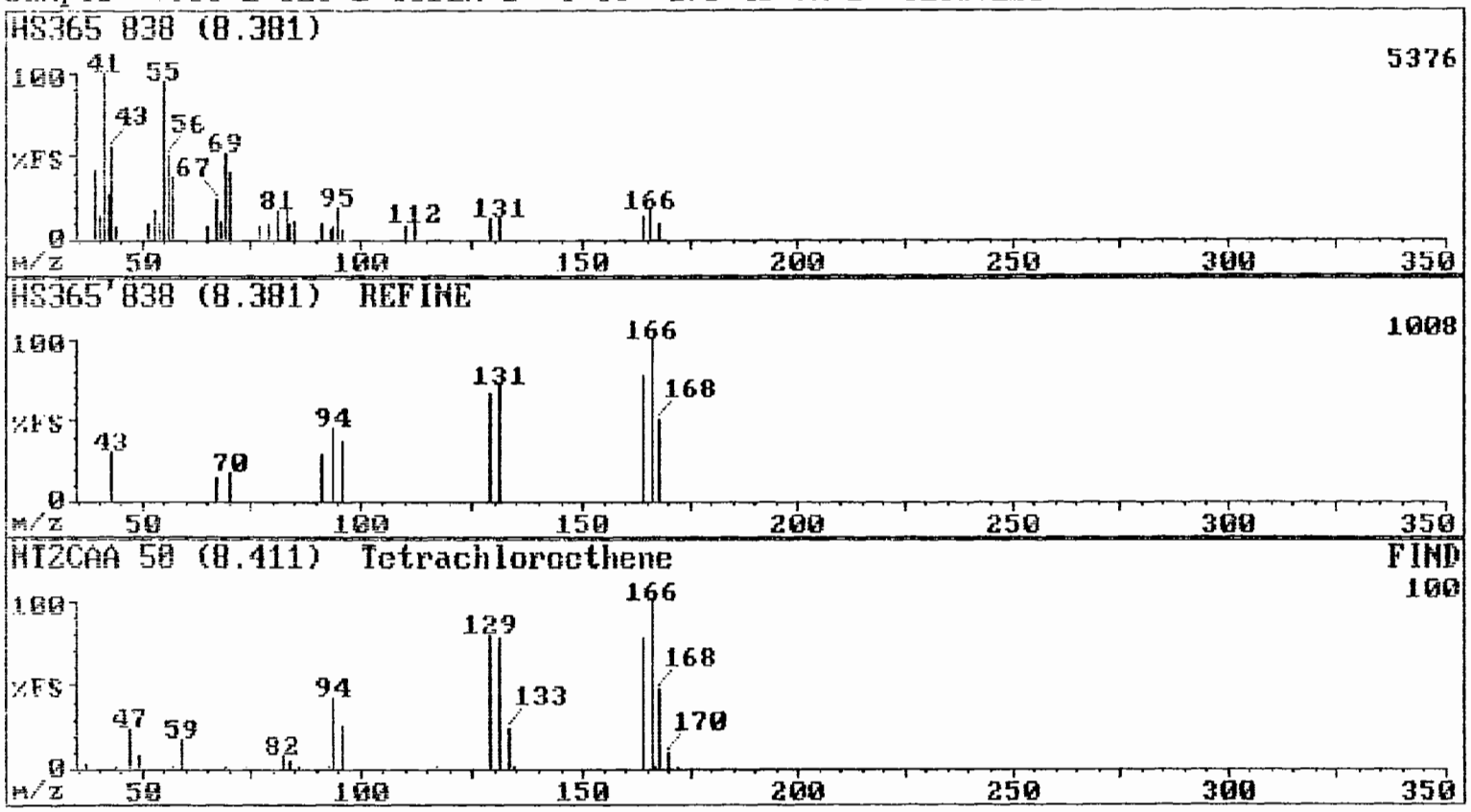


NTZCAA 49 (7.601) Toluene FIND 100



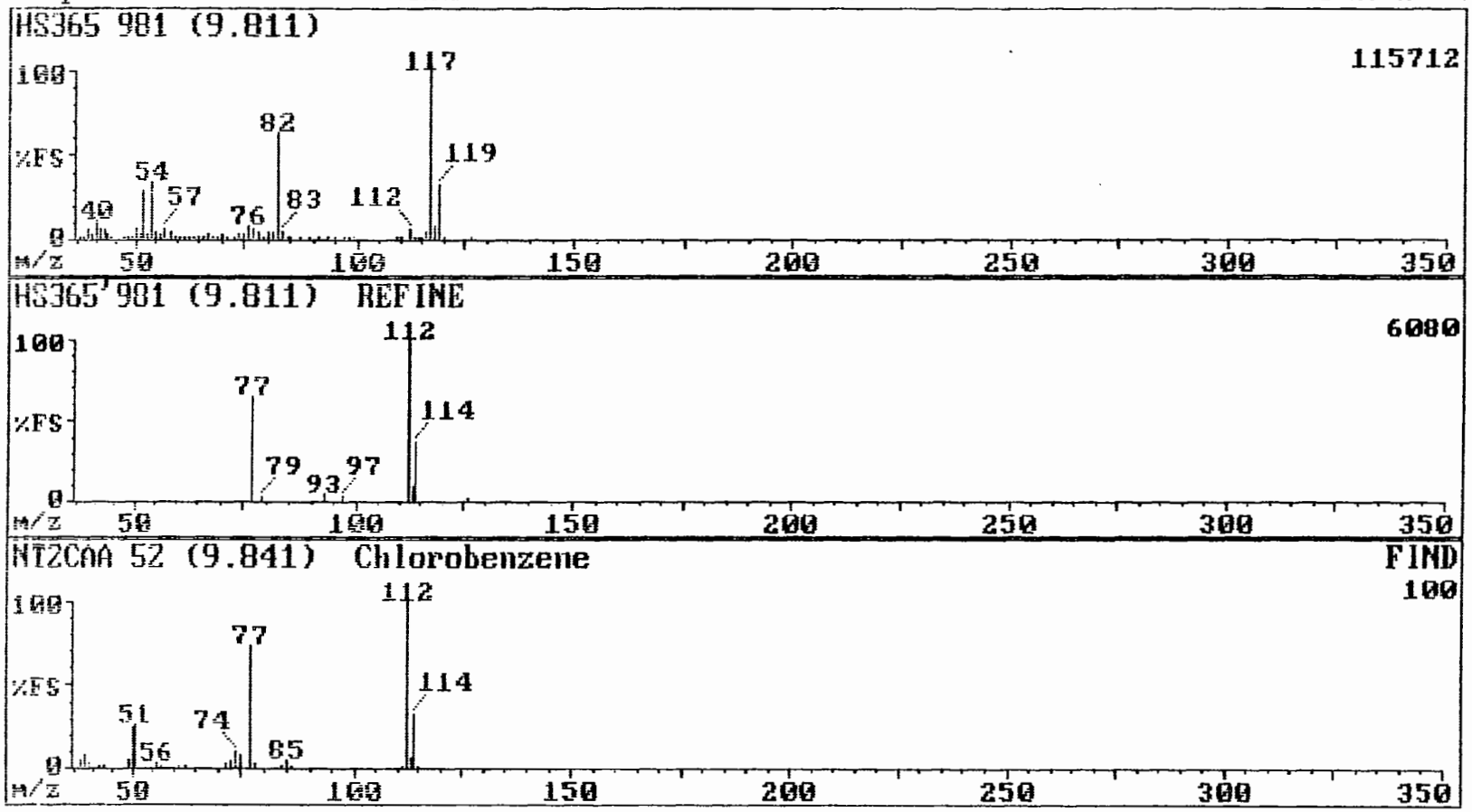
07-09-97 13:18 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 2 TUBEA/B T/TC 173-46-7A/B TLI#42284 Instrument H



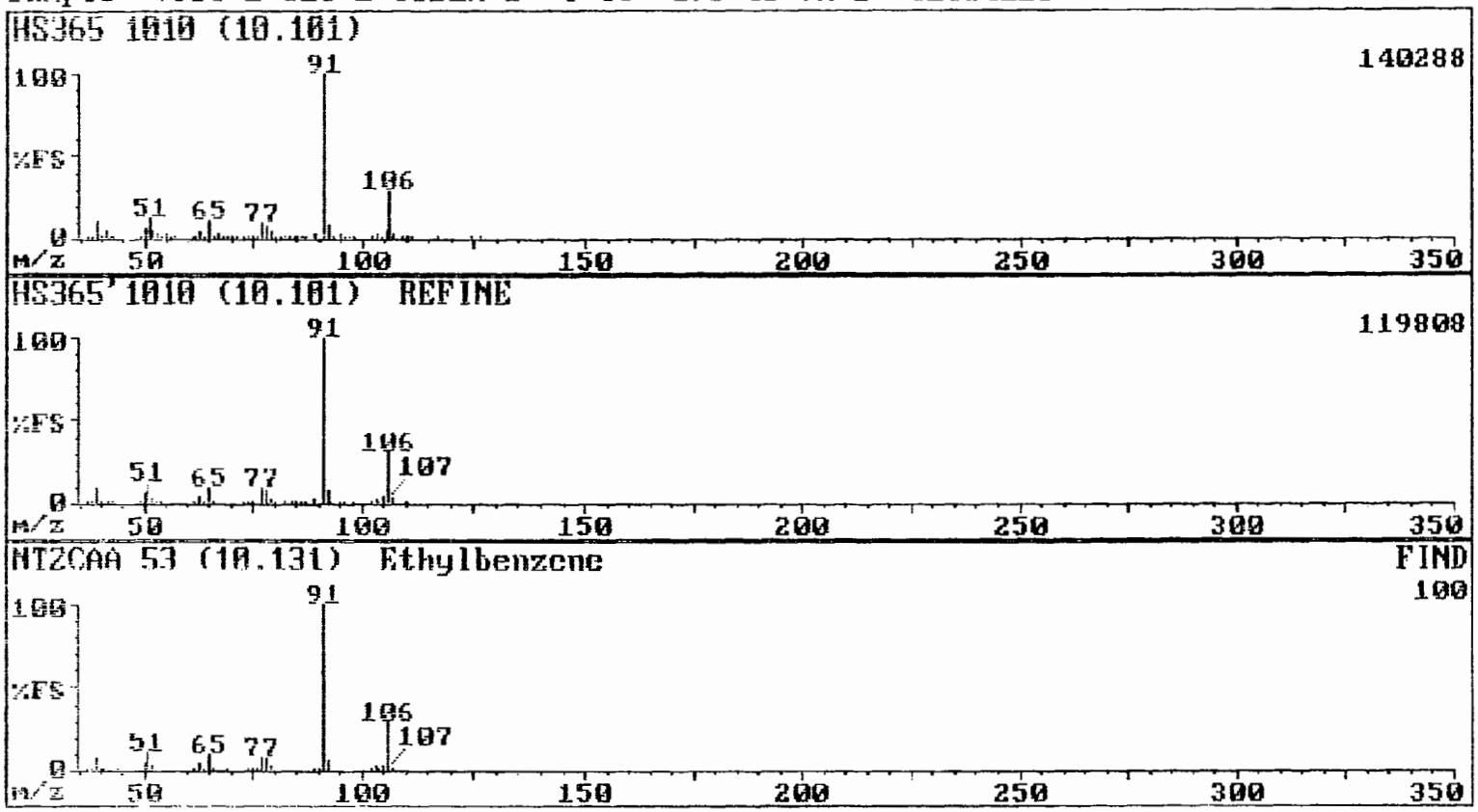
07-09-97 13:18 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 2 TUBEA/B T/TC 173-46-7A/B TLI#42284 Instrument H



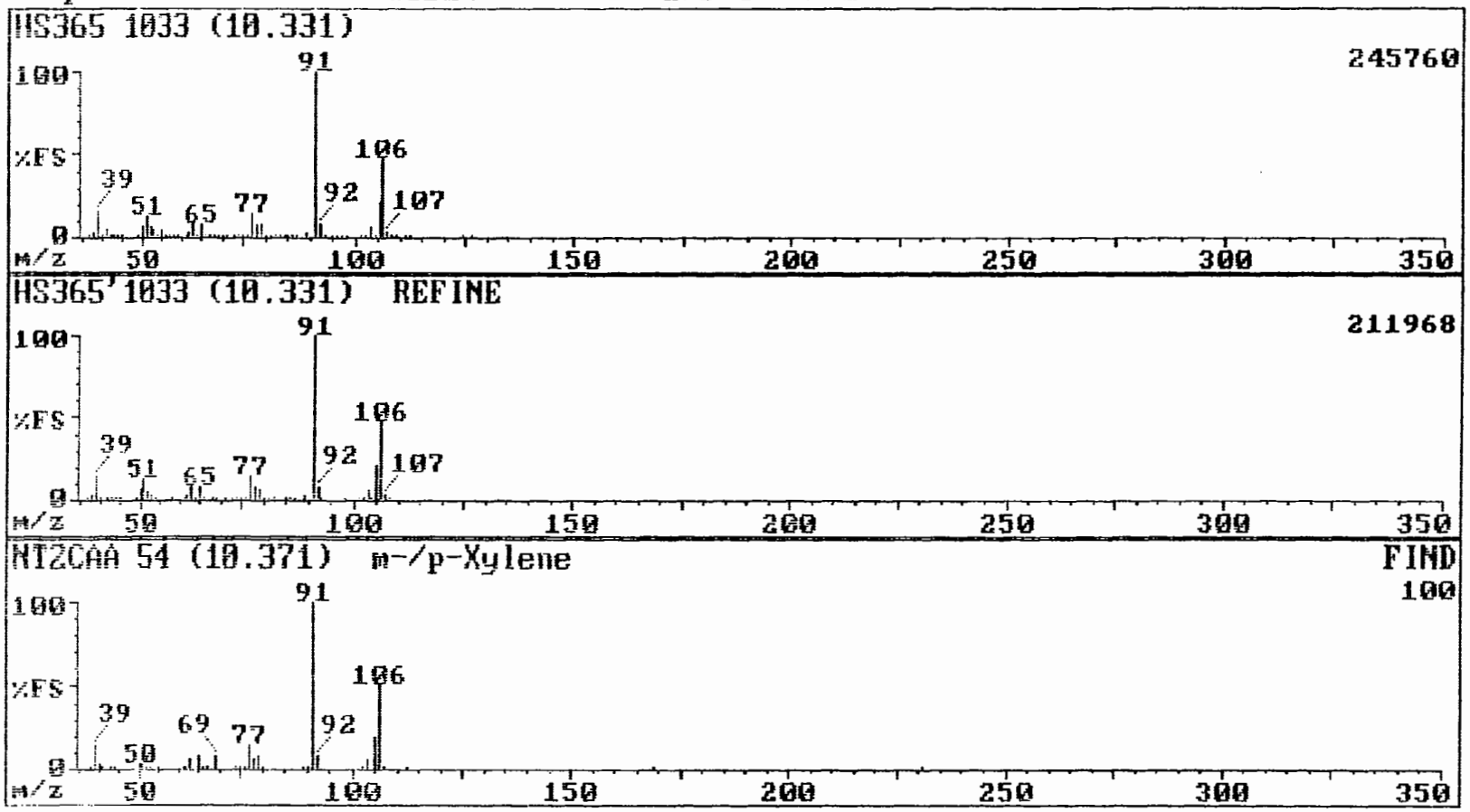
07-09-97 13:18 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 2 TUBEA/B T/TC 173-46-7A/B TLI#42284 Instrument H



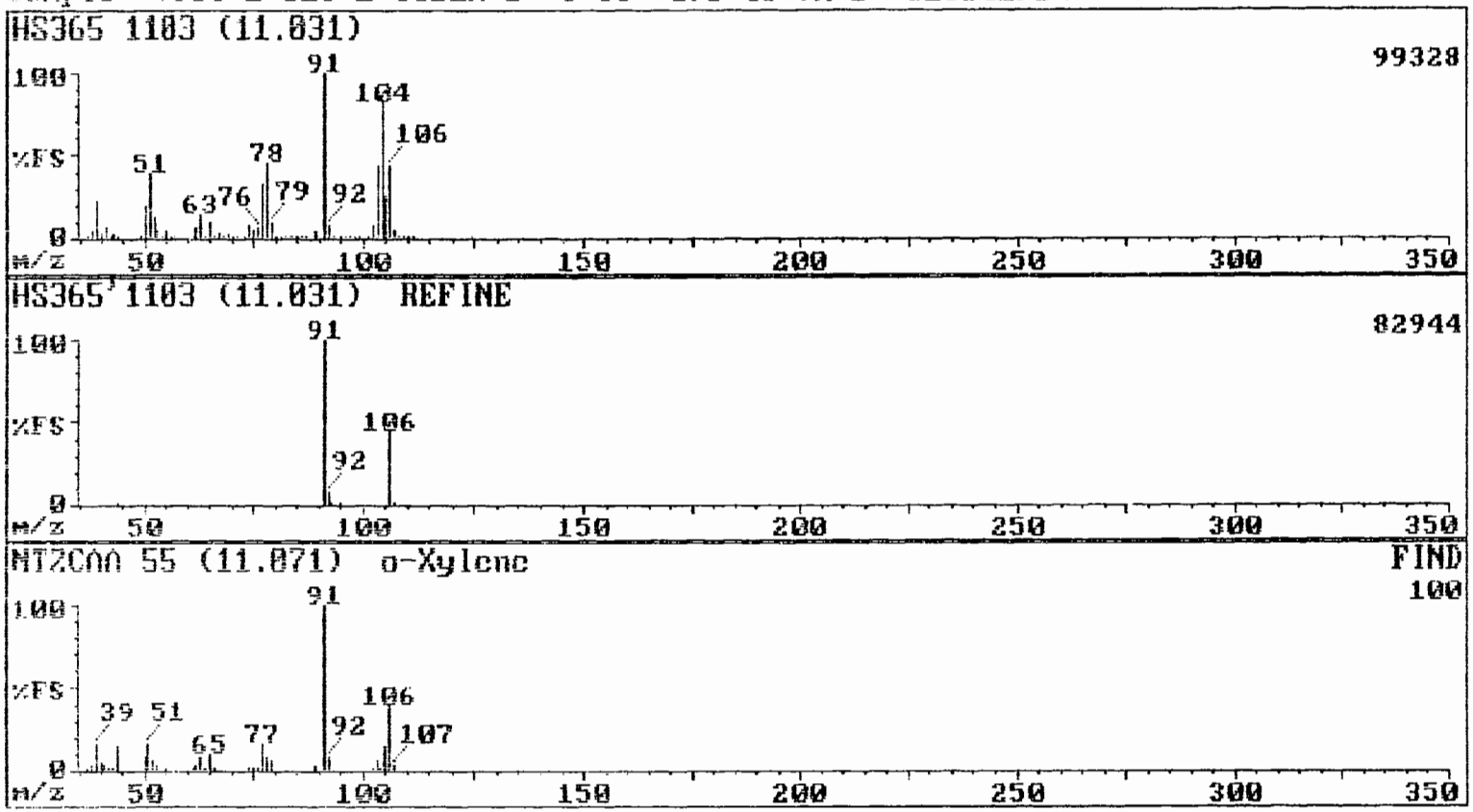
07-09-97 13:18 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 2 TUBEA/B T/TC 173-46-7A/B TLI#42284 Instrument H



07-09-97 13:18 Triangle Laboratories of RTP, Inc. (919) 544-5729

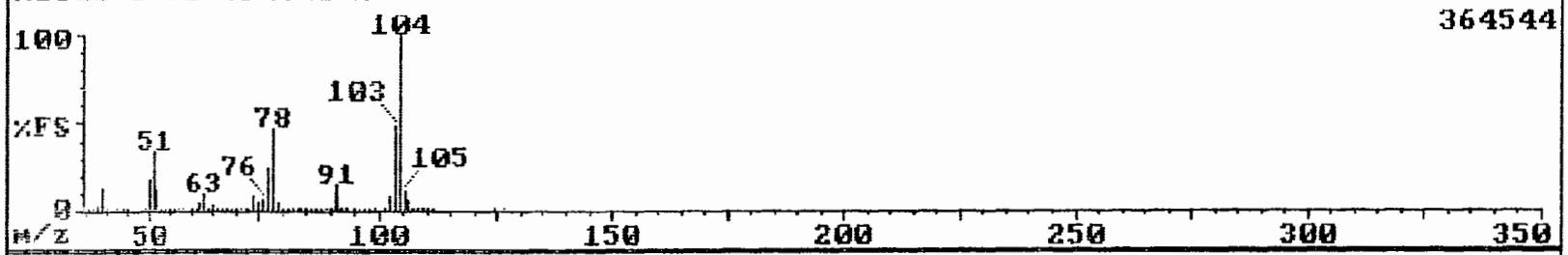
Sample: VOST-2 SET 2 TUBEA/B T/TC 173-46-7A/B TLI#42284 Instrument H



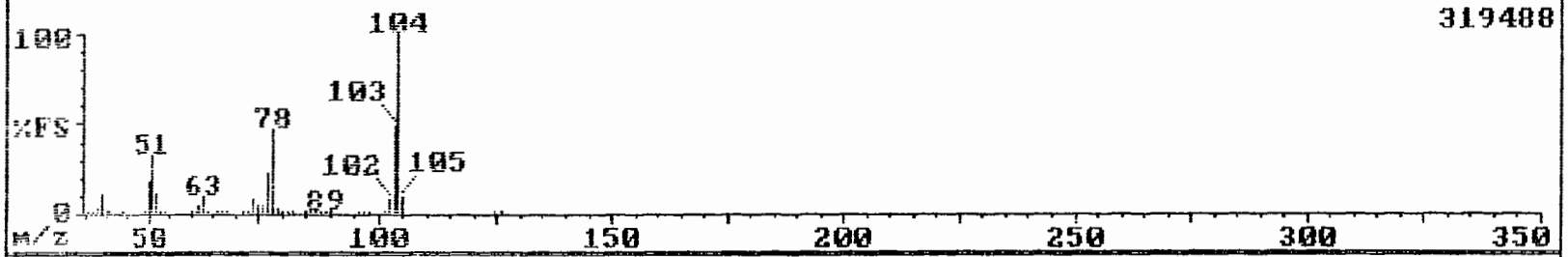
07-09-97 13:18 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 2 TUBEA/B T/TC 173-46-7A/B TLI#42284 Instrument H

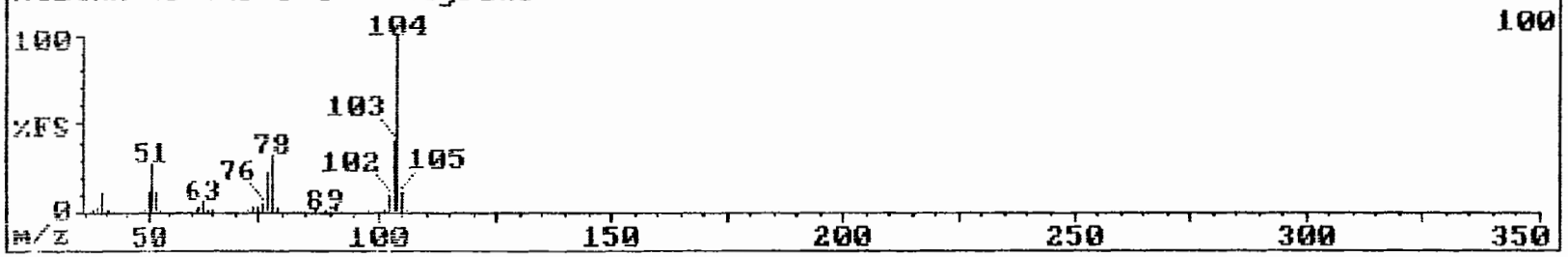
HS365 1108 (11.081) 364544



HS365 1108 (11.081) REFINE 319488

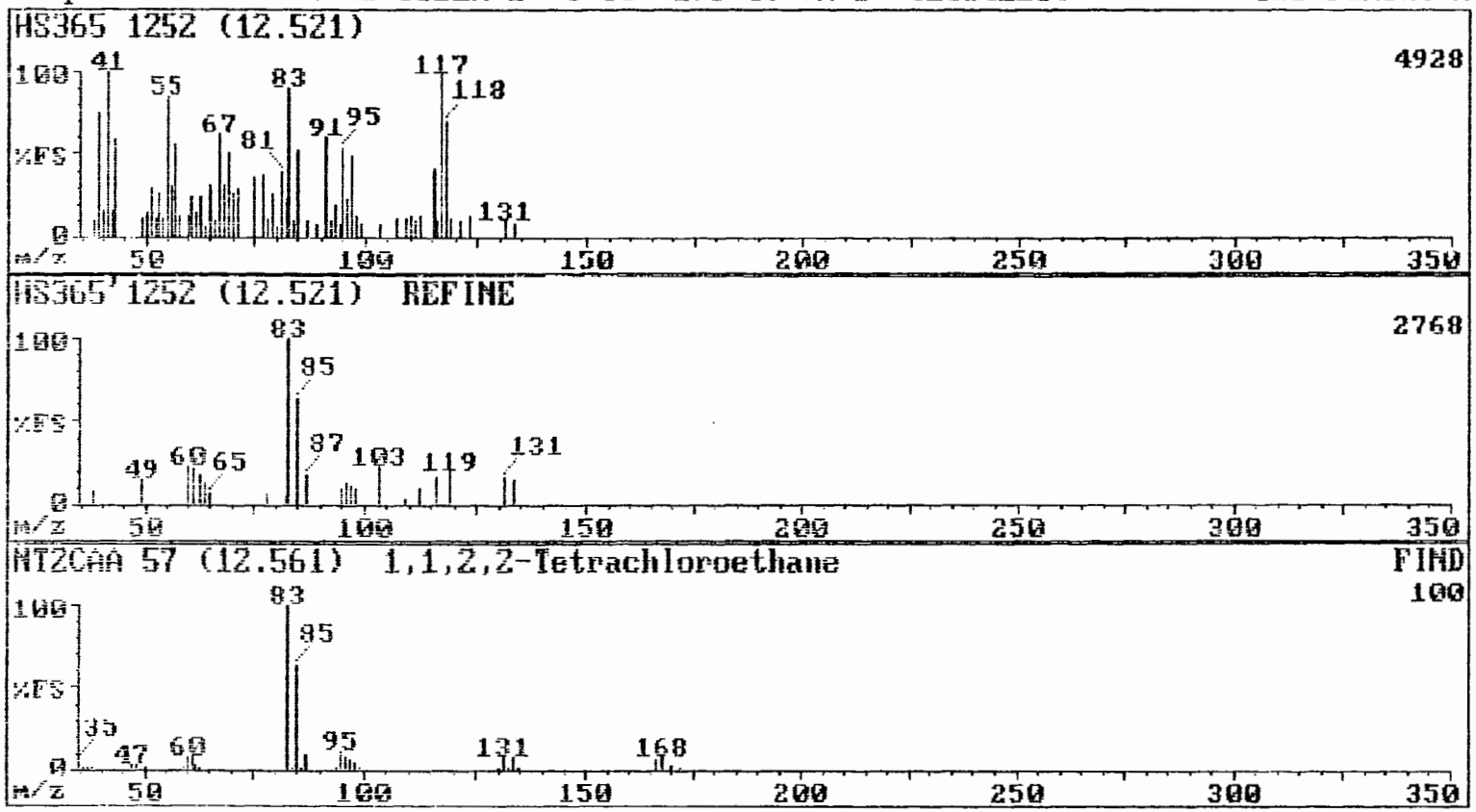


NT2CAA 56 (11.121) Styrene FIND 100



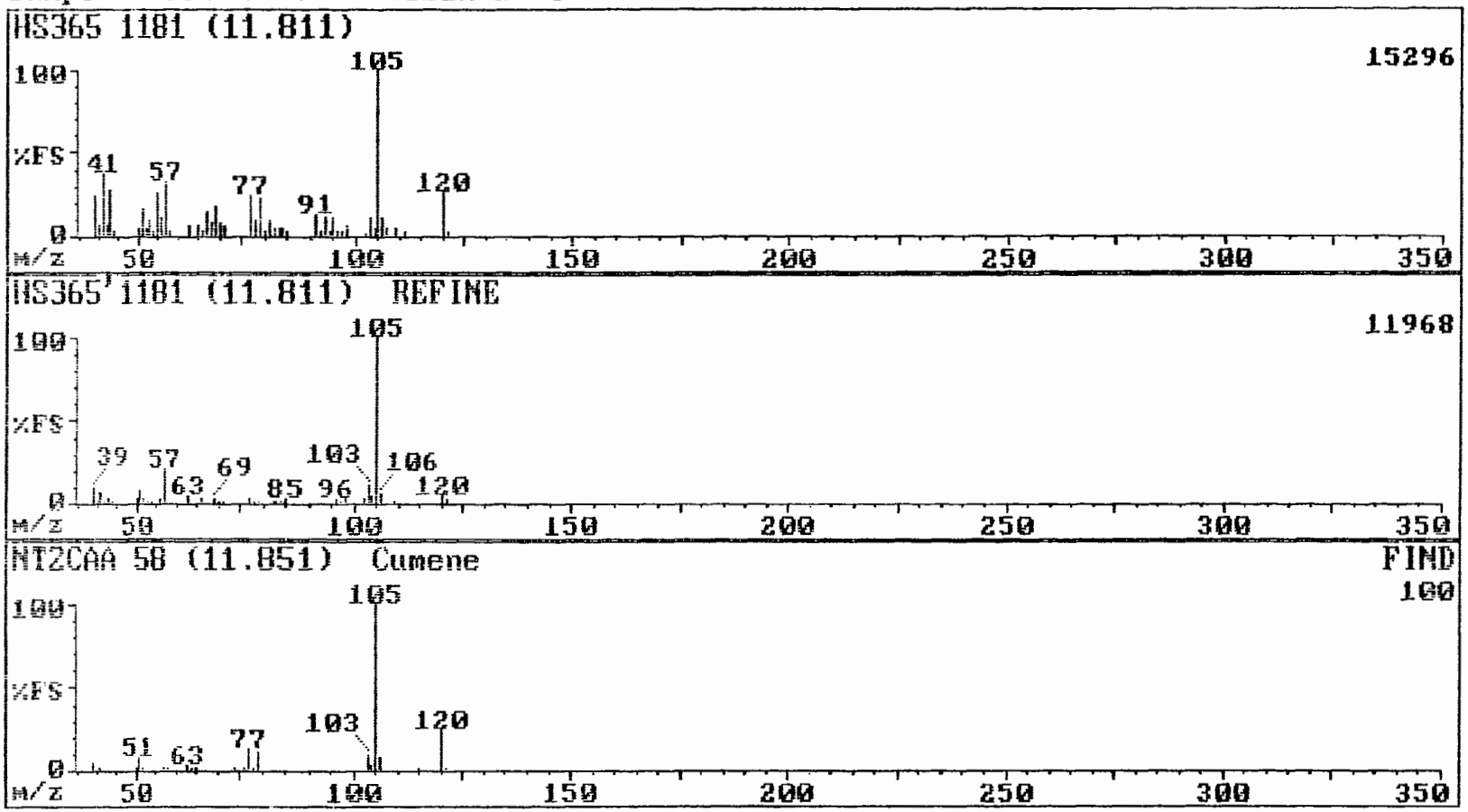
07-09-97 13:18 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 2 TUBEA/B T/TC 173-46-7A/B TLI#42284 Instrument H

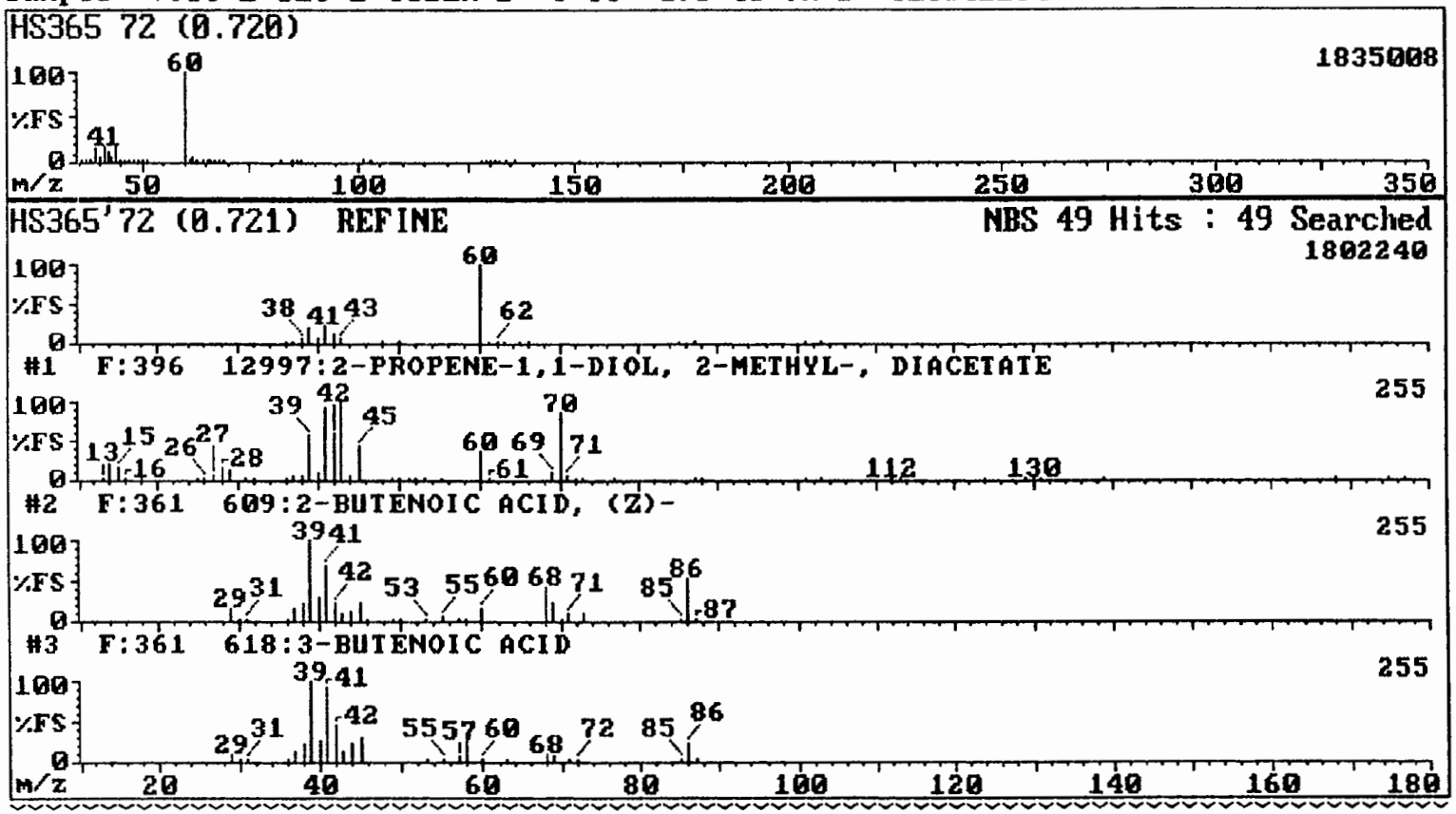


07-09-97 13:18 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 2 TUBEA/B T/TC 173-46-7A/B TLI#42284 Instrument H



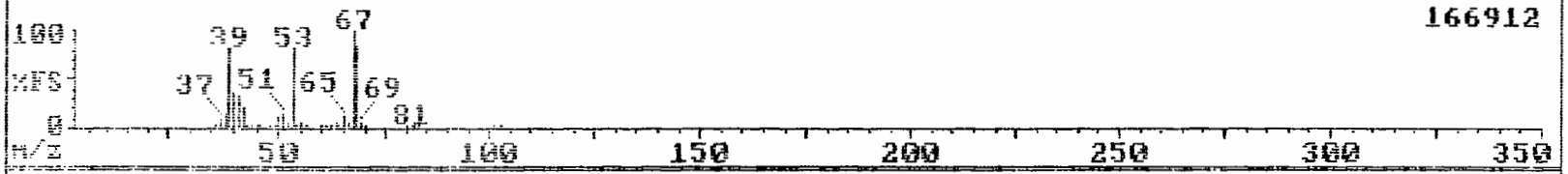
09-Jul-97 13:18 Triangle Laboratories of RTP, Inc. (919) 544-5729
Sample: VOST-2 SET 2 TUBEA/B T/TC 173-46-7A/B TLI#42284 Instrument H



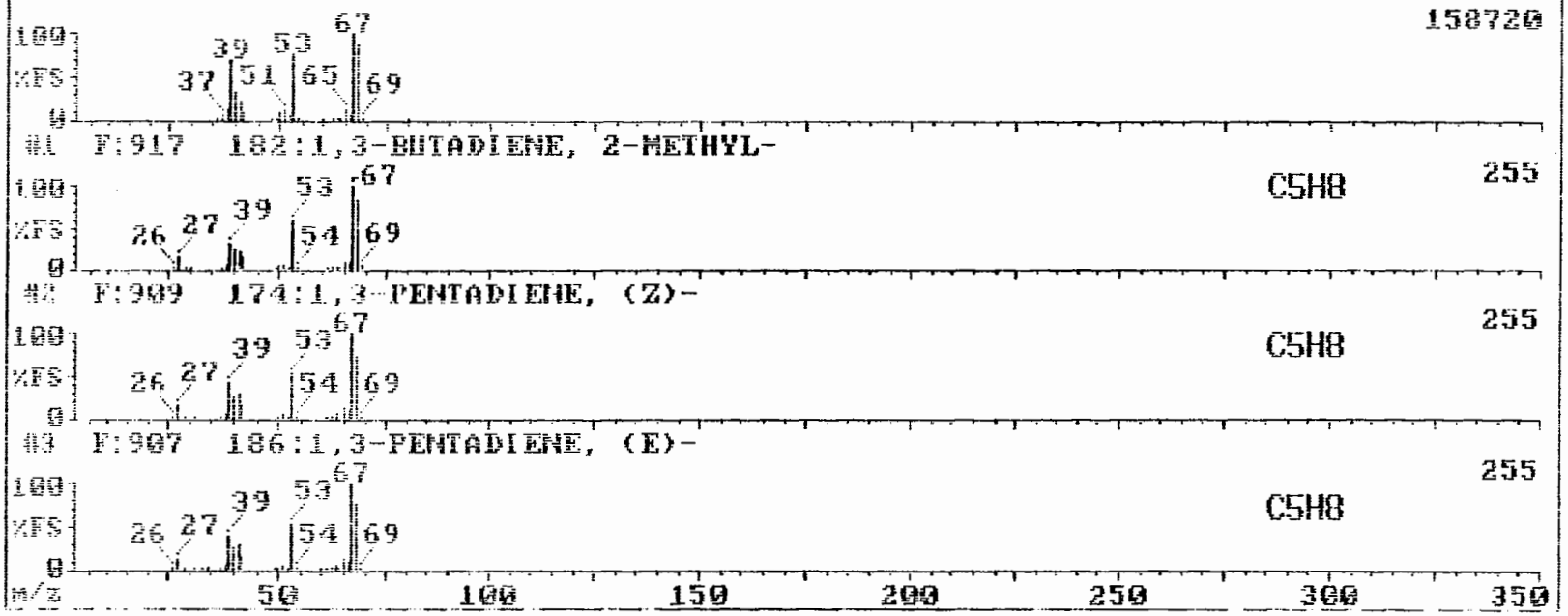
07/09/97 13:18 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 2 TUBEA/B T/TC 173-46-7A/B TLI#42284 Instrument: H

MS365 Z19 (2.190) NBS 166912



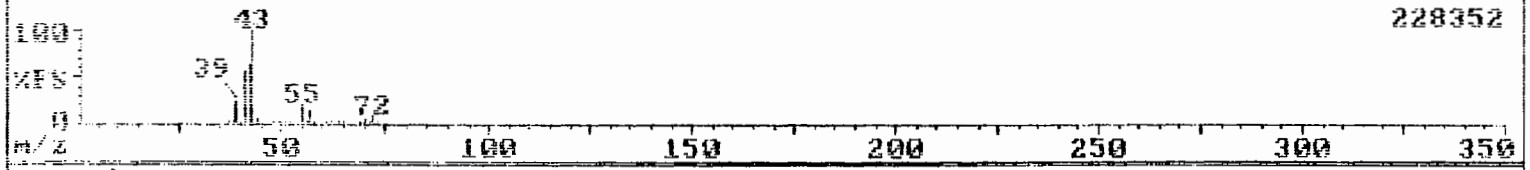
MS365'Z19 (2.191) REFINE NBS 33 Hits : 33 Searched 158720



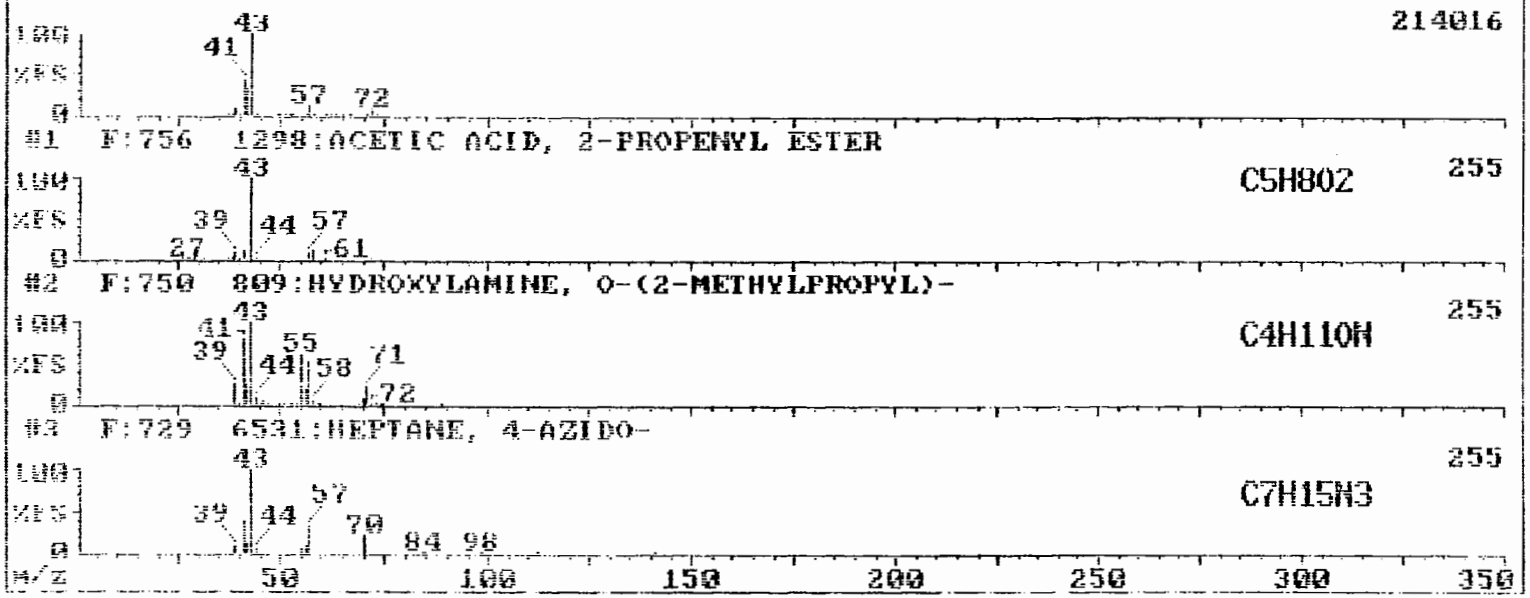
07/09/97 13:10 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 2 TUBEA/B T/TC 173-46-7A/B TLI#42284 Instrument: H

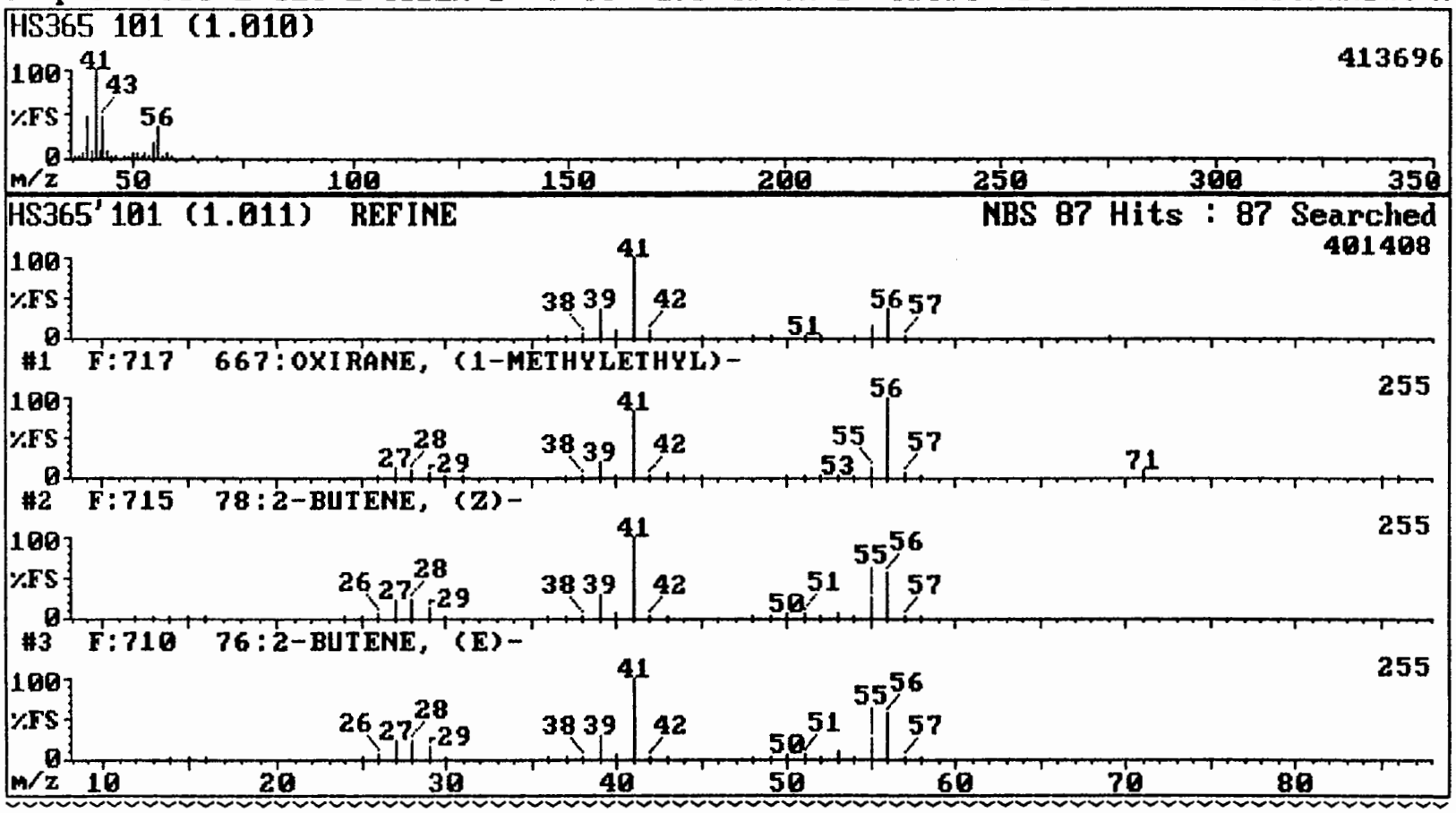
MS365 194 (1.948) NBS 228352



MS365 194 (1.941) REFINE NBS 83 Hits : 83 Searched 214016

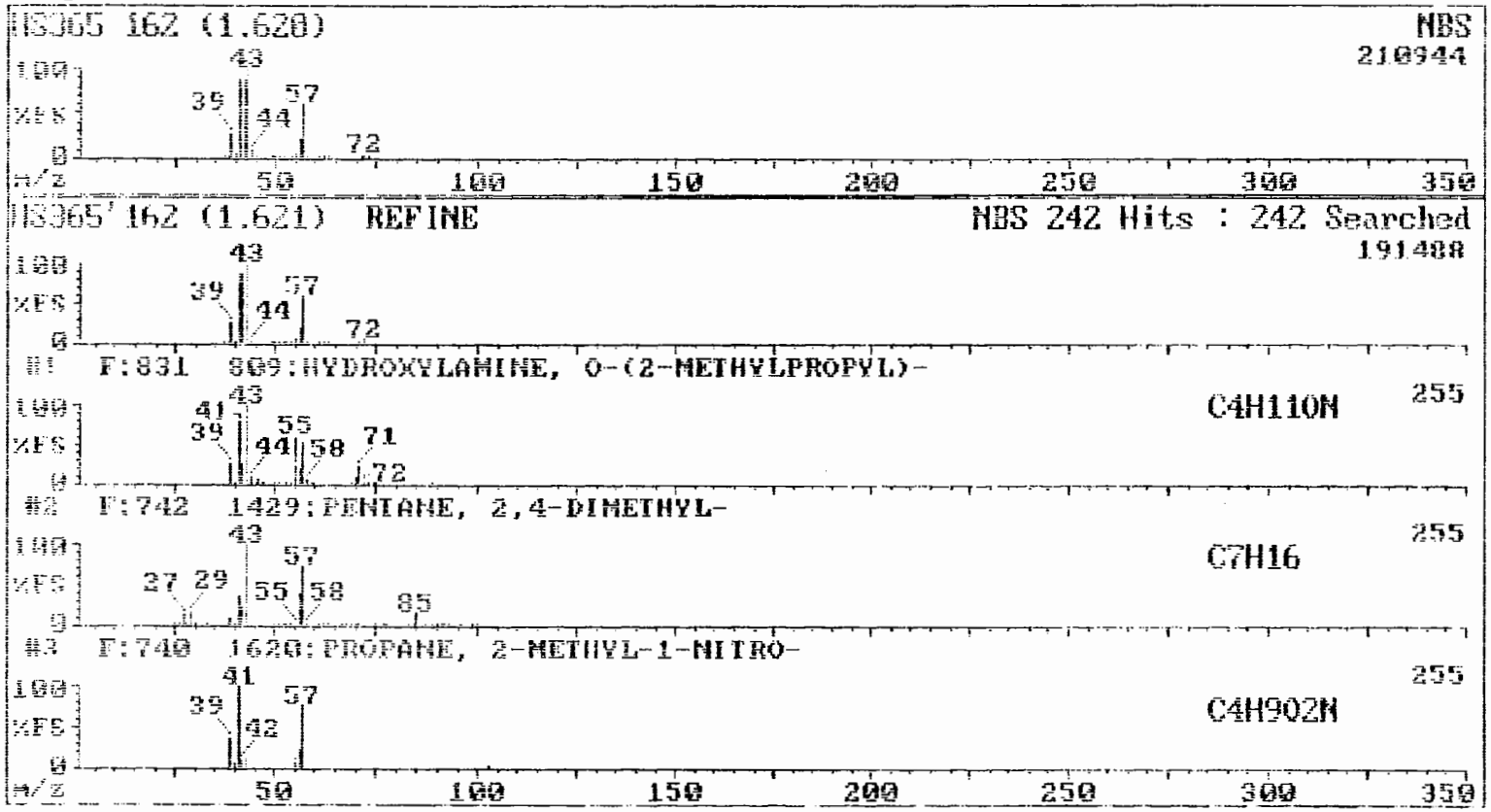


09-Jul-97 13:18 Triangle Laboratories of RTP, Inc. (919) 544-5729
Sample: VOST-2 SET 2 TUBEA/B T/TC 173-46-7A/B TLI#42284 Instrument H



07/09/97 13:18 Triangle Laboratories of RTP, Inc. (919) 544-5729

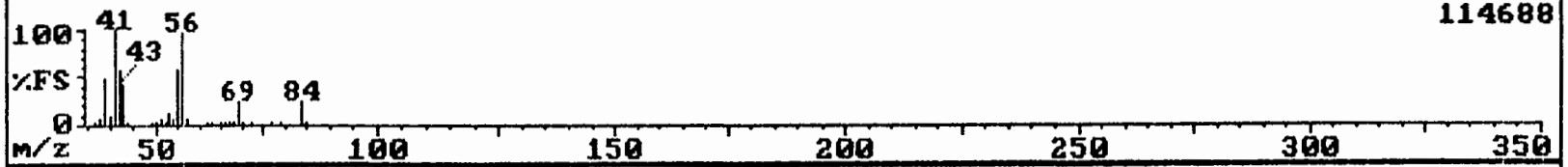
Sample: VOST-2 SET 2 TUBEA/B T/TC 173-46-7A/B TLI#42284 Instrument: H



09-Jul-97 13:18 Triangle Laboratories of RTP, Inc. (919) 544-5729

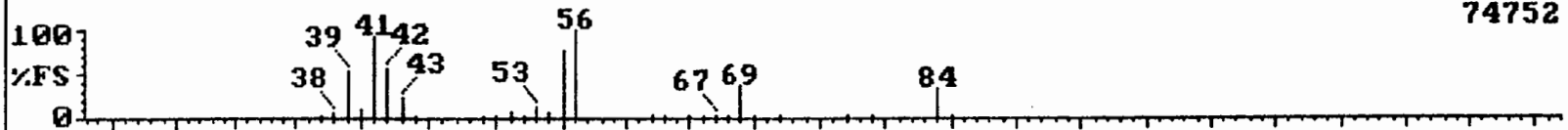
Sample: VOST-2 SET 2 TUBEA/B T/TC 173-46-7A/B TLI#42284 Instrument H

HS365 345 (3.450) 114688



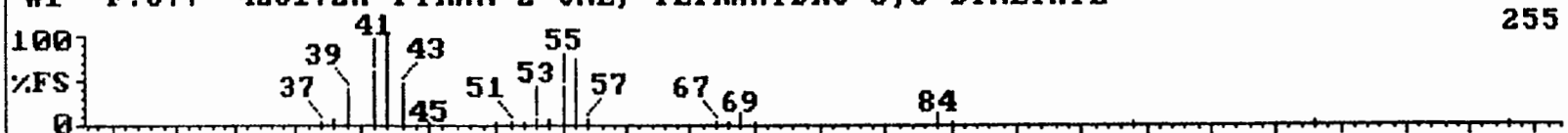
HS365'345 (3.451) REFINE NBS 61 Hits : 61 Searched

74752



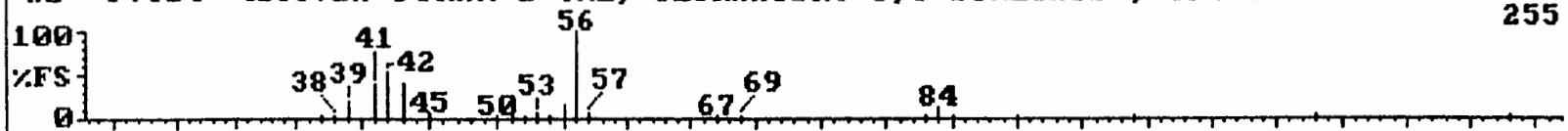
#1 F:877 4261:2H-PYRAN-2-ONE, TETRAHYDRO-3,6-DIMETHYL-

255



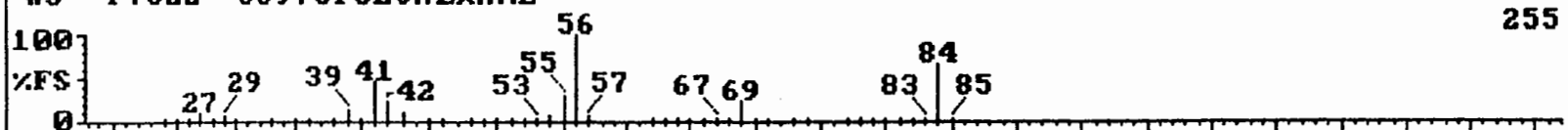
#2 F:824 4288:2H-PYRAN-2-ONE, TETRAHYDRO-5,6-DIMETHYL-, TRANS-

255



#3 F:822 559:CYCLOHEXANE

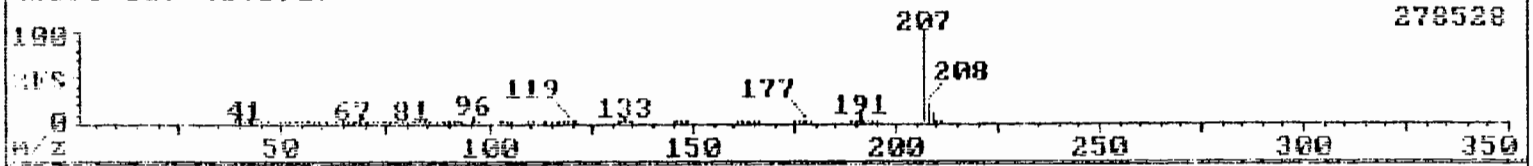
255



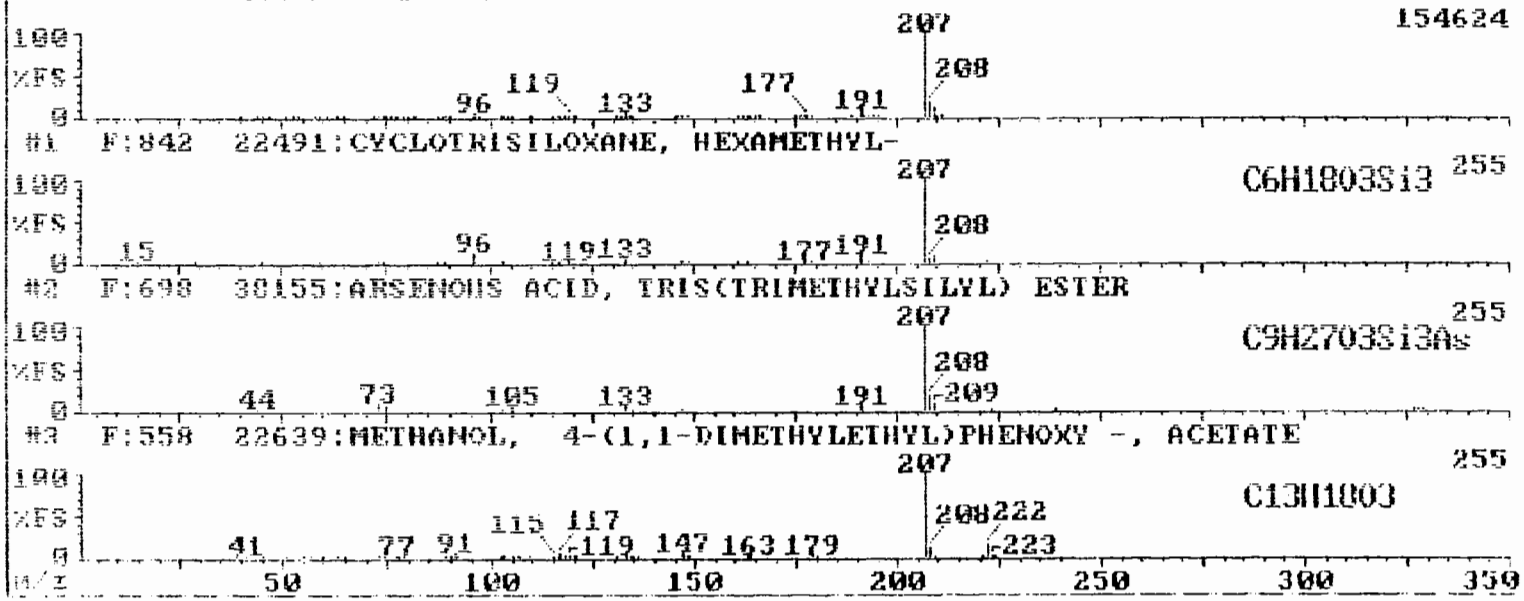
07/09/97 13:18 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 2 TUBEA/B T/TC 173-46-70/B TLIN4Z284 Instrument: H

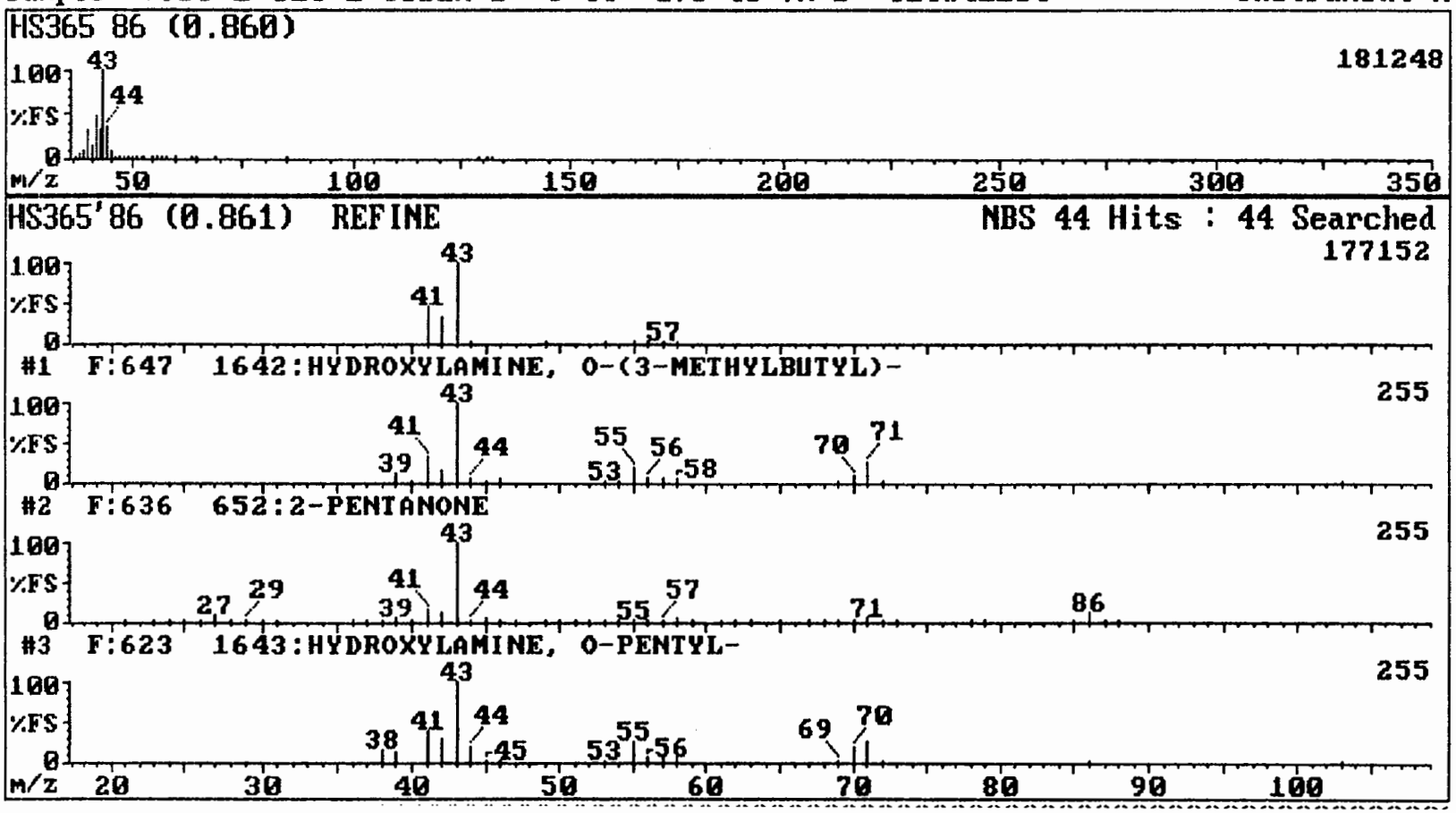
HS365 867 (8.671) NBS 278528



HS365 867 (8.671) REFINE NBS 82 Hits : 82 Searched 154624



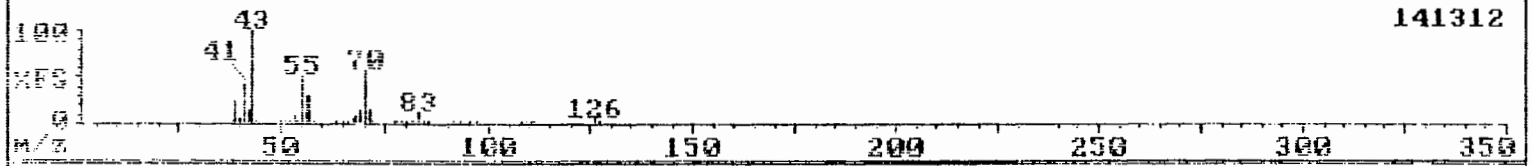
09-Jul-97 13:18 Triangle Laboratories of RTP, Inc. (919) 544-5729
Sample: VOST-2 SET 2 TUBEA/B T/TC 173-46-7A/B TLI#42284 Instrument H



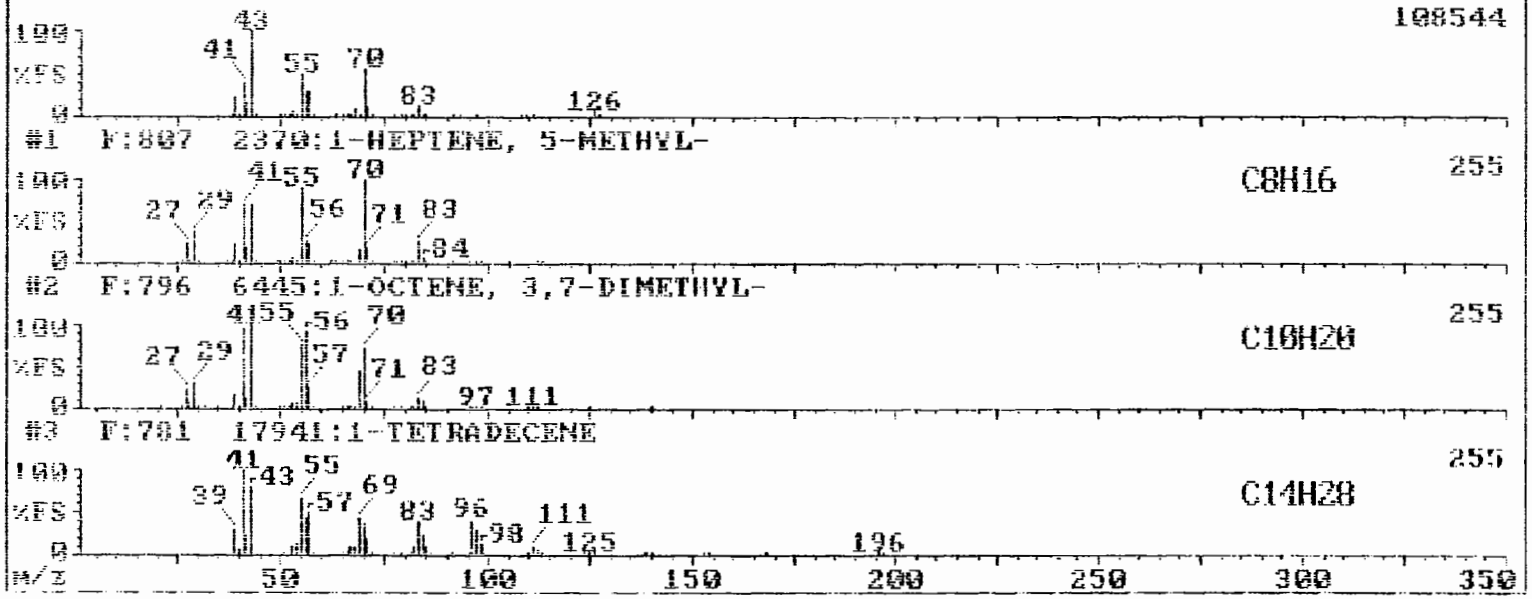
07/09/97 13:18 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 2 TUBEA/B T/TC 173-46-7A/B TL1#42284 Instrument: H

MS365 916 (9.161) NBS 141312



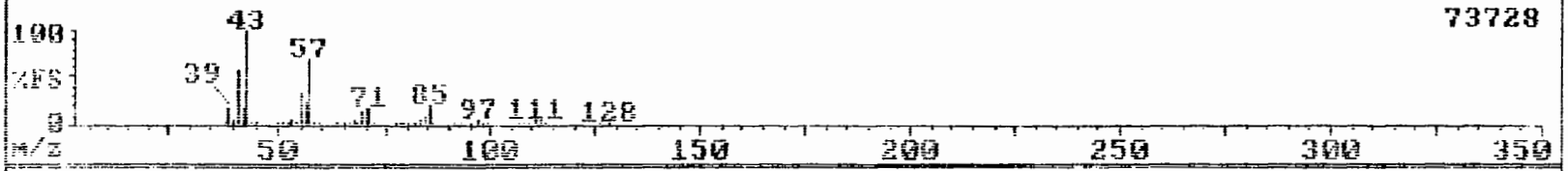
MS365'916 (9.161) REFINE NBS 156 Hits : 156 Searched 108544



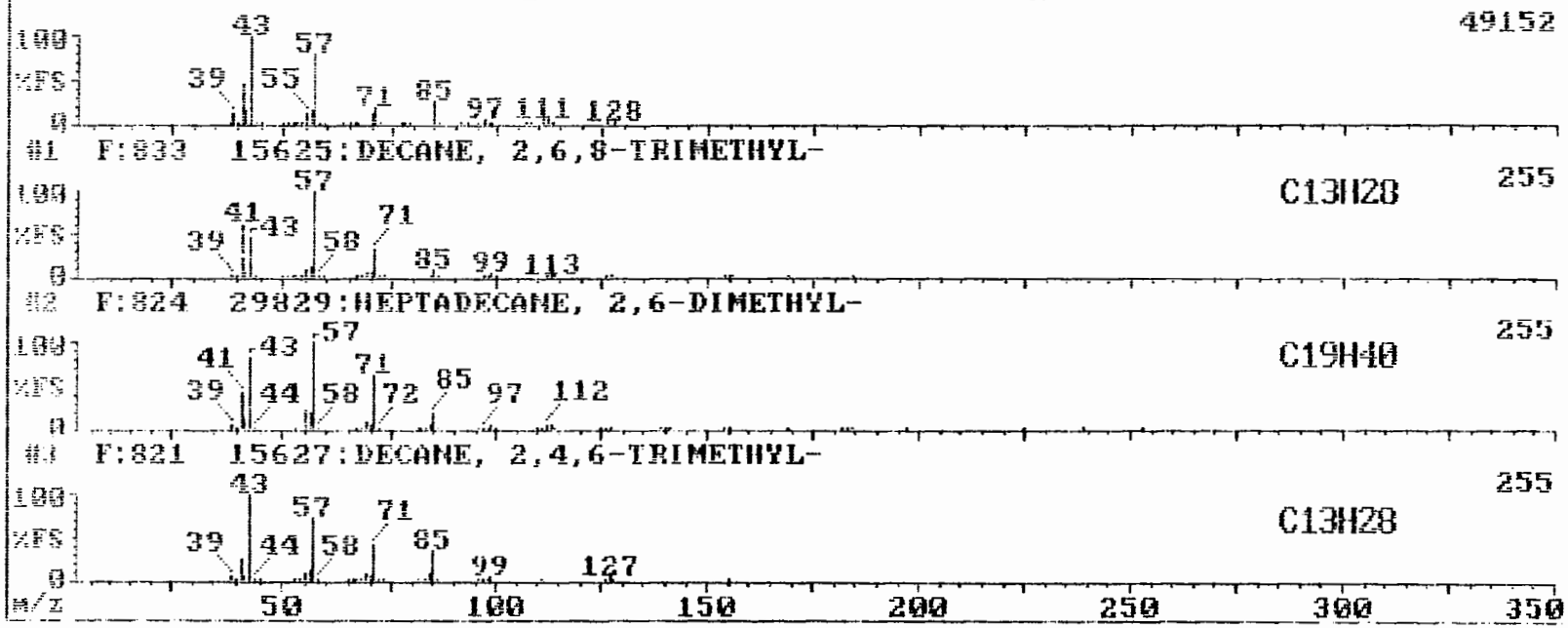
07/09/97 13:18 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 2 TUBEA/B T/TC 173-46-7A/B TLI#42284 Instrument: H

MS365 1063 (10.631) NBS 73728



MS365 1063 (10.631) REFINE NBS 137 Hits : 137 Searched



Pacific Environmental Services

Project Number: 42284 | Method 8240A VOST
Sample File: HS366 | Sample ID: VOST-2 SET 3 TUBEA/B T/TC

Client Project: S407-003 | Date Received: 06/30/97 | Response File: ICALH708
TLI ID: 173-46-8A,B
Date Analyzed : 07/09/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
Bromochloromethane		IS 1	4.48		
Chloromethane	0.099		0.92		0.05
Vinyl Chloride		U		0.001	0.05
1,3-Butadiene	0.114		1.07		0.05
Bromomethane	0.013	J	1.40		0.05
Chloroethane		U		0.001	0.05
Vinyl bromide		U		0.001	0.05
Trichlorofluoromethane	0.044	J	1.81		0.05
1,1-Dichloroethene		U		0.001	0.05
Iodomethane		U		0.001	0.05
Carbon disulfide	0.396		2.47		0.05
Acetone	0.068	B	2.54		0.05
Allyl chloride		U		0.001	0.05
Methylene chloride	0.206	B	2.94		0.05
trans-1,2-Dichloroethene		U		0.001	0.05
tert-Butyl methyl ether		U		0.001	0.05
Acrylonitrile		U		0.003	0.05
n-Hexane	0.119		3.54		0.05
1,1-Dichloroethane		U		0.001	0.05
1,2-Epoxybutane		U		0.003	0.05
cis-1,2-Dichloroethene		U		0.001	0.05
Chloroform		U		0.001	0.05
1,2-Dichloroethane		U		0.001	0.05
Isooctane		U		0.001	0.05
1,4-Difluorobenzene		IS 2	5.63		
Vinyl acetate		U		0.001	0.05

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

Triangle Laboratories of RTP, Inc.
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Savar v3.5
Printed: 15:02 07/22/1997

Pacific Environmental Services

Project Number: 42284 | **Method 8240A VOST**
Sample File: HS366 | **Sample ID: VOST-2 SET 3 TUBEA/B T/TC**

Client Project: S407-003 | **Date Received: 06/30/97** | **Response File: ICALH708**
TLI ID: 173-46-8A,B
Date Analyzed : 07/09/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
2-Butanone		U		0.006	0.05
1,1,1-Trichloroethane		U		0.001	0.05
Carbon tetrachloride		U		0.001	0.05
Benzene	0.948	B	5.11		0.05
Trichloroethene		U		0.001	0.05
1,2-Dichloropropane		U		0.001	0.05
Ethyl acrylate		U		0.001	0.05
Methyl methacrylate	0.077		6.46		0.05
Bromodichloromethane		U		0.001	0.05
cis-1,3-Dichloropropene		U		0.001	0.05
trans-1,3-Dichloropropene		U		0.001	0.05
1,1,2-Trichloroethane		U		0.001	0.05
Dibromochloromethane		U		0.001	0.05
Ethylene dibromide		U		0.001	0.05
Bromoform		U		0.001	0.05
Chlorobenzene-d_5		IS 3	9.75		
4-Methyl-2-pentanone		U		0.001	0.05
Toluene	0.314	B	7.57		0.05
Tetrachloroethene		U		0.001	0.05
2-Hexanone		U		0.001	0.05
Chlorobenzene	0.003	J	9.80		0.05
Ethylbenzene	0.050		10.09		0.05
m-/p-Xylene	0.114		10.32		0.10
o-Xylene	0.048	J	11.03		0.05
Styrene	0.239		11.08		0.05
1,1,2,2-Tetrachloroethane		U		0.001	0.05

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

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Savar v3.5
Printed: 15:02 07/22/1997

Pacific Environmental Services

Project Number: 42284 | **Method 8240A VOST**
Sample File: HS366 | **Sample ID: VOST-2 SET 3 TUBEA/B T/TC**

Client Project: S407-003 | **Date Received: 06/30/97** | **Response File: ICALH708**
TLI ID: 173-46-8A,B
Date Analyzed : 07/09/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
Cumene	0.004	J	11.80		0.05

Surrogate Summary	Amount (ug)	RT	IS Ref	%REC
1,2-Dichloroethane-d_4	0.232	5.08	1	93
Benzene-d_6	0.265	5.06	2	106
Toluene-d_8	0.292	7.48	3	117

Reviewed by TW Date 7/22/97

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

Pacific Environmental Services

Project Number:	42284	Method 8240A	
Sample File:	HS366	Sample ID:	VOST-2 SET 3 TUBEA/B T/TC

Client Project:	S407-003	Date Received:	06/30/97
TLI ID:	173-46-8A,B	Date Analyzed:	07/09/97
	Dilution Factor:	1.00	

Tentatively Identified Compounds

Name	RT	Area	IS RT	IS Area	Amount, ug
Unknown	0.711	17568126	4.481	4480785	0.980
C4H8 isomer	1.001	7835286	4.481	4480785	0.437
Pentane	1.920	6105392	4.481	4480785	0.341
C5H8 Isomer	2.180	5837587	4.481	4480785	0.326
Methyl Propane Isomer	0.851	4073988	4.481	4480785	0.227
Methylbutane Isomer	1.600	4001037	4.481	4480785	0.223
Hexamethylcyclotrisiloxane	8.661	8895099	9.751	10025194	0.222
C6H12 Isomer	3.441	3207264	4.481	4480785	0.179
Alkene	9.151	5438555	9.751	10025194	0.136
C13H28 Isomer	10.621	4097470	9.751	10025194	0.102

Triangle Laboratories, Inc.
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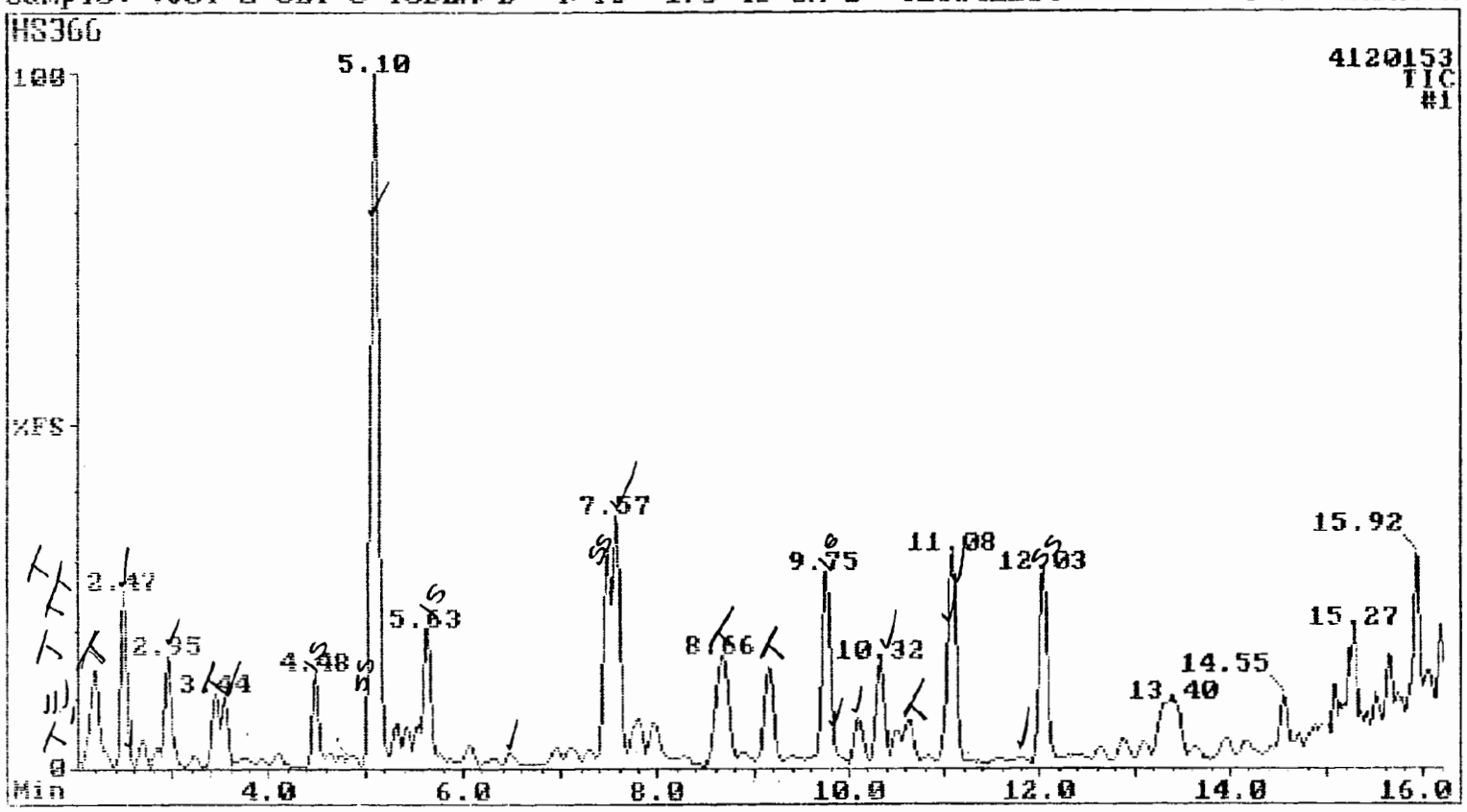
Printed: 11:29 07/25/97

07-09-97 13:45 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 3 TUBEA/B T/TC 173-46-8A/B TLI#42284 Instrument H



Data Review: TW
Date: 7-30-97

JAN DB' : HS366 LAB-BASE QUAN 07-09-97 14:1

No.	MAT	FOR	REV	Delta	Area	P.Flags	RT	QM	Name
1	100	91	99	-3	362816	bb	4.48	128	Bromochloromethane
2	100	92	97	1	2098516	bb	5.63	114	1,4-Difluorobenzene
3	100	96	98	0	2713820	bv	9.75	117	Chlorobenzene-d5
4	56	21	68	1	905504	bv	5.08	65	1,2-Dichloroethane-d4
5	100	81	82	0	2571708	bv	5.06	84	Benzene-d6
6	100	90	99	1	3600388	bv	7.48	98	Toluene-d8
~~7~~	~~17~~	~~10~~	~~32~~	~~94~~	~~19126~~	~~A~~	~~13.44~~	98	o-Xylene-d10 FP TW
8	100	88	94	2	1746003	vv	12.03	95	4-Bromofluorobenzene
9	99	76	83	0	300848	vv	0.92	50	Chloromethane
10	0	0	0	0	0		0.00	62	Vinyl Chloride
11	100	74	100	-1	~~4416198~~	~~A~~ 436704	~~1.00~~ 1.07	39	1,3-Butadiene MK TW
12	86	46	93	-1	41056	bb	1.40	94	Bromomethane
13	0	0	0	0	0		0.00	64	Chloroethane
14	0	0	0	0	0		0.00	106	Vinyl bromide
15	86	53	92	-2	185428	bb	1.81	101	Trichlorofluoromethane
16	0	0	0	0	0		0.00	96	1,1-Dichloroethene
17	0	0	0	0	0		0.00	142	Iodomethane
18	100	85	99	-1	3622600	bv	2.47	76	Carbon disulfide
19	84	53	81	-1	129626	bv	2.54	43	Acetone
20	0	0	0	0	0		0.00	76	Allyl chloride
21	100	77	94	-1	590356	bv	2.94	84	Methylene chloride
22	0	0	0	0	0		0.00	96	trans-1,2-Dichloroethene
23	0	0	0	0	0		0.00	73	tert-Butyl methyl ether
~~24~~	~~27~~	~~9~~	~~37~~	~~-2~~	~~13812~~	~~bb~~	~~3.23~~	53	Acrylonitrile FP TW
25	100	98	100	-1	807072	bb	3.54	57	n-Hexane
26	0	0	0	0	0		0.00	63	1,1-Dichloroethane
~~27~~	~~59~~	~~48~~	~~58~~	~~7~~	~~62663~~	~~vb~~	~~4.09~~	42	1,2-Epoxybutane FP TW
28	0	0	0	0	0		0.00	96	cis-1,2-Dichloroethene
29	0	0	0	0	0		0.00	83	Chloroform
30	0	0	0	0	0		0.00	62	1,2-Dichloroethane
~~31~~	~~45~~	~~24~~	~~56~~	~~6~~	~~212489~~	~~bv~~	~~5.32~~	~~57~~	Isooctane
~~32~~	~~32~~	~~30~~	~~62~~	~~-29~~	~~802792~~	~~bv~~	~~3.53~~	43	Vinyl acetate FP TW
~~33~~	~~87~~	~~71~~	~~71~~	~~1~~	~~2112~~	~~bb~~	~~4.37~~	72	2-Butanone
34	0	0	0	0	0		0.00	97	1,1,1-Trichloroethane
35	0	0	0	0	0		0.00	117	Carbon tetrachloride
36	100	93	100	1	10079710	bv	5.11	78	Benzene
37	0	0	0	0	0		0.00	130	Trichloroethene
~~38~~	~~28~~	~~11~~	~~36~~	~~3~~	~~372~~	~~bb~~	~~6.08~~	63	1,2-Dichloropropane FP TW
~~39~~	~~46~~	~~26~~	~~51~~	~~2~~	~~24376~~	~~A~~	~~6.21~~	55	Ethyl acrylate
40	100	90	96	0	156404	bb	6.46	69	Methyl methacrylate
41	0	0	0	0	0		0.00	83	Bromodichloromethane
42	0	0	0	0	0		0.00	75	cis-1,3-Dichloropropene
43	0	0	0	0	0		0.00	75	trans-1,3-Dichloropropen
44	0	0	0	0	0		0.00	97	1,1,2-Trichloroethane
45	0	0	0	0	0		0.00	129	Dibromochloromethane
46	0	0	0	0	0		0.00	107	Ethylene dibromide
47	0	0	0	0	0		0.00	173	Bromoform
~~48~~	~~53~~	~~5~~	~~84~~	~~2~~	~~62544~~	~~A~~	~~7.48~~	43	4-Methyl-2-pentanone FP TW
49	100	94	99	1	2523916	bv	7.57	92	Toluene
50	0	0	0	0	0		0.00	164	Tetrachloroethene

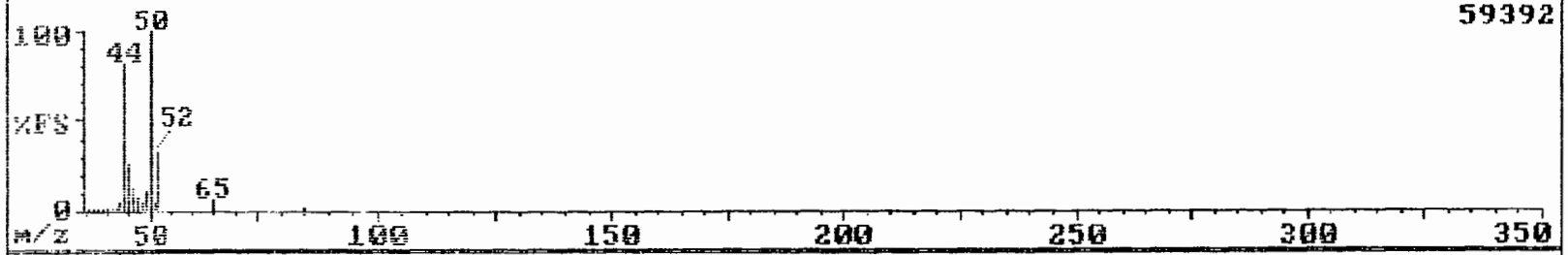
Data Review: TW
Date: 7-20-97

No.	MAT	FOR	REV	Delta	Area	P.Flags	RT	QM	Name
~~51~~	~~32~~	~~4~~	~~60~~	~~7~~	~~26208~~	~~A~~	~~8.70~~	43	2-Hexanone FPTW
52	47	16	63	1	37108	bb	9.80	112	Chlorobenzene
53	100	89	99	1	278736	bv	10.09	106	Ethylbenzene
54	100	87	94	0	791480	vv	10.32	106	m-/p-Xylene
55	95	75	80	2	320640	bv	11.03	106	o-Xylene
56	100	94	98	2	2620308	bv	11.08	104	Styrene
~~57~~	~~28~~	~~5~~	~~44~~	~~3~~	~~4686~~	~~A~~	~~12.53~~	83	1,1,2,2-Tetrachloroet FPTW
58	70	41	76	1	95144	bv	11.80	105	Cumene

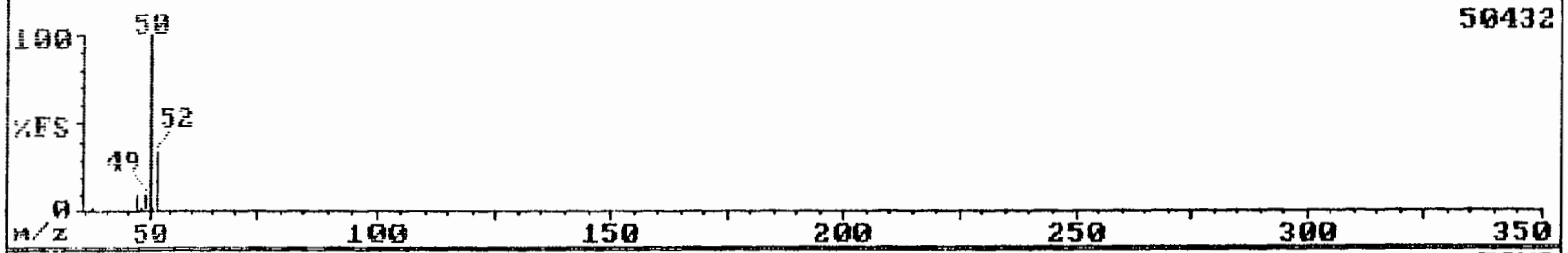
07-09-97 13:45 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 3 TUBEA/B T/TC 173-46-8A/B TLI#42284 Instrument H

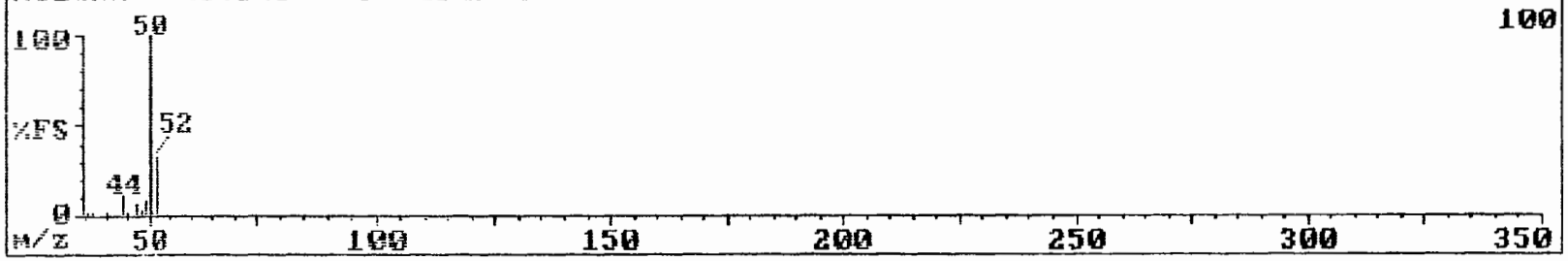
HS366 92 (0.920) 59392



HS366'92 (0.921) REFINE 50432

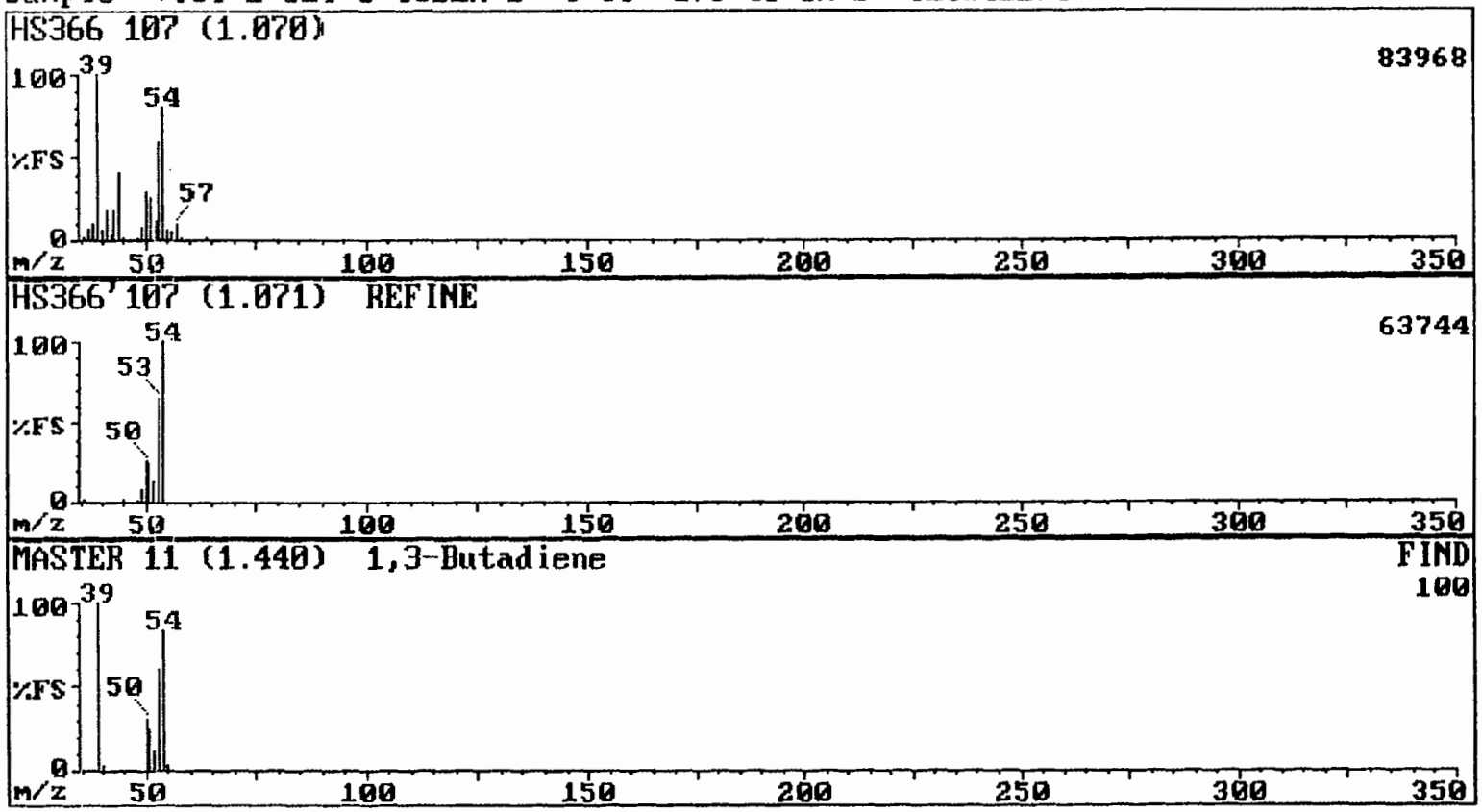


NT2CAA 9 (0.930) Chloromethane FIND 100



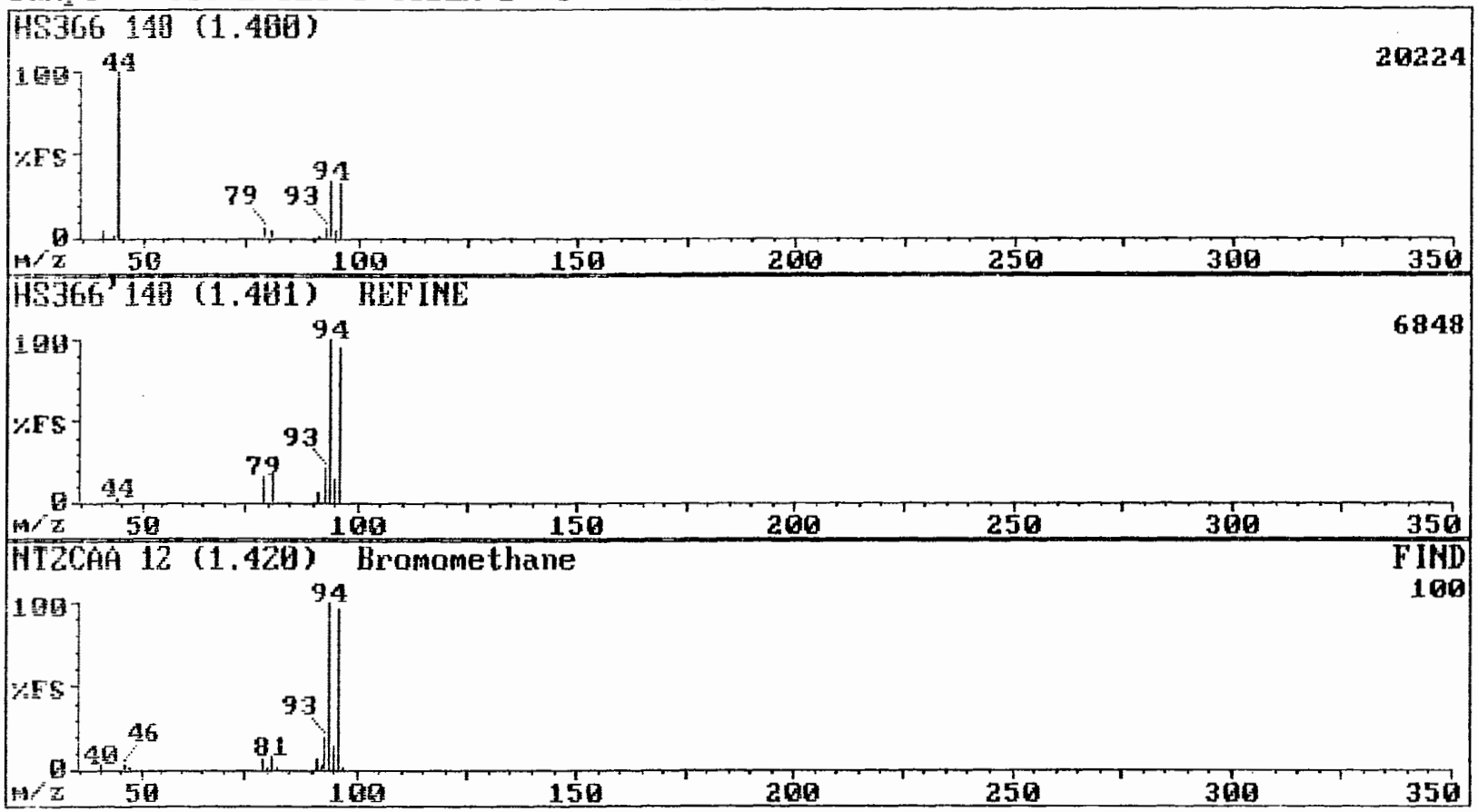
09-Jul-97 13:45 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 3 TUBEA/B T/TC 173-46-8A/B TLI#42284 Instrument H



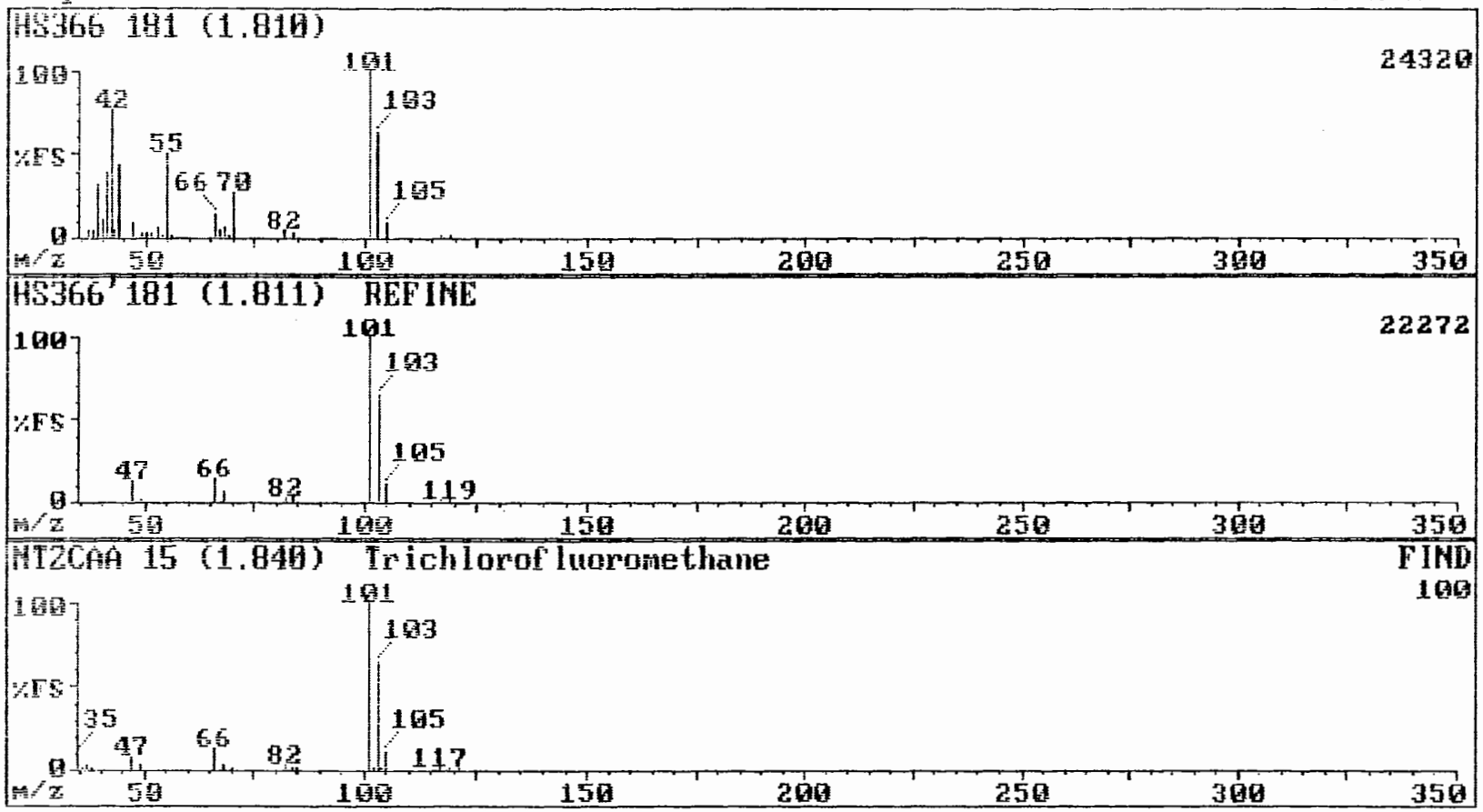
07-09-97 13:45 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 3 TUBEA/B T/TC 173-46-8A/B TLI#42284 Instrument H



07-09-97 13:45 Triangle Laboratories of RTP, Inc. (919) 544-5729

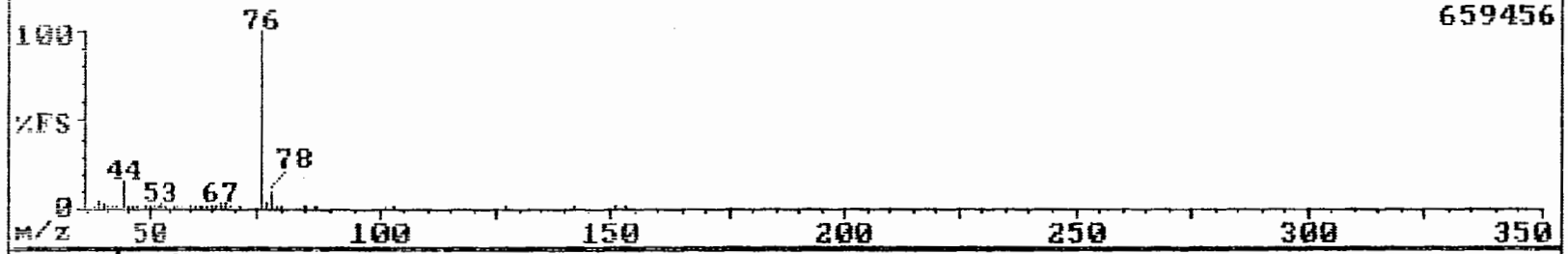
Sample: VOST-2 SET 3 TUBEA/B T/TC 173-46-8A/B TLI#42284 Instrument H



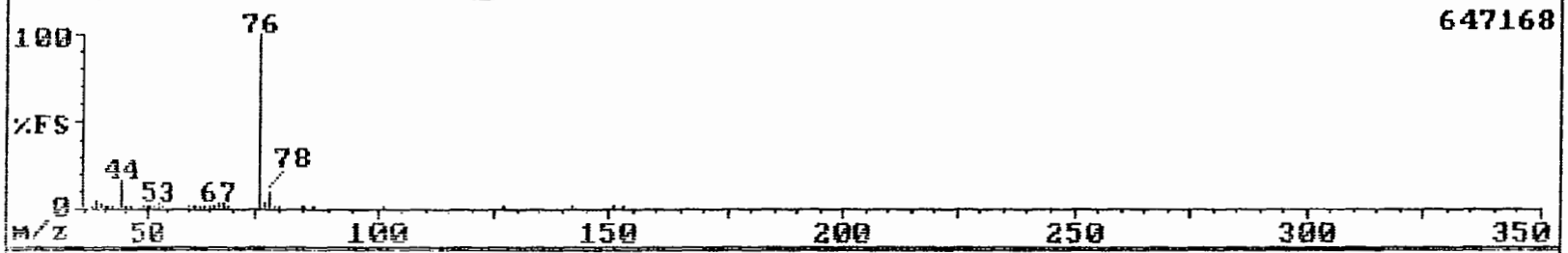
07-09-97 13:45 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 3 TUBEA/B T/TC 173-46-8A/B TLI#42284 Instrument H

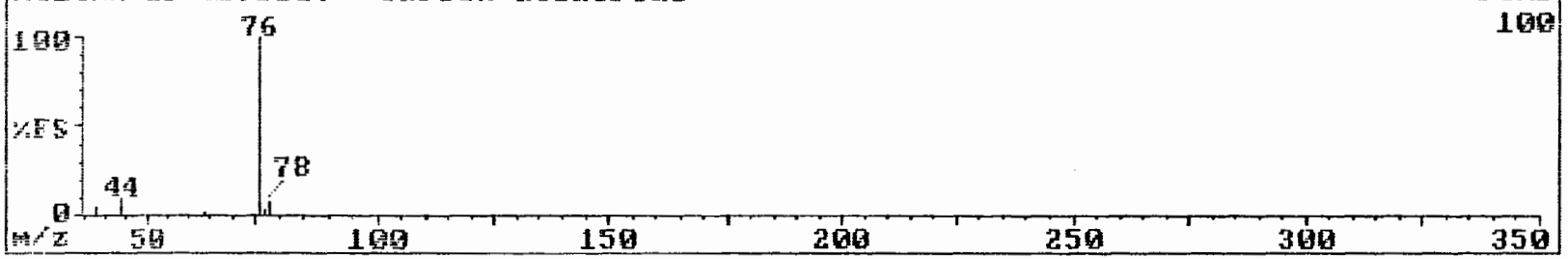
HS366 247 (2.470)



HS366'247 (2.471) REFINE

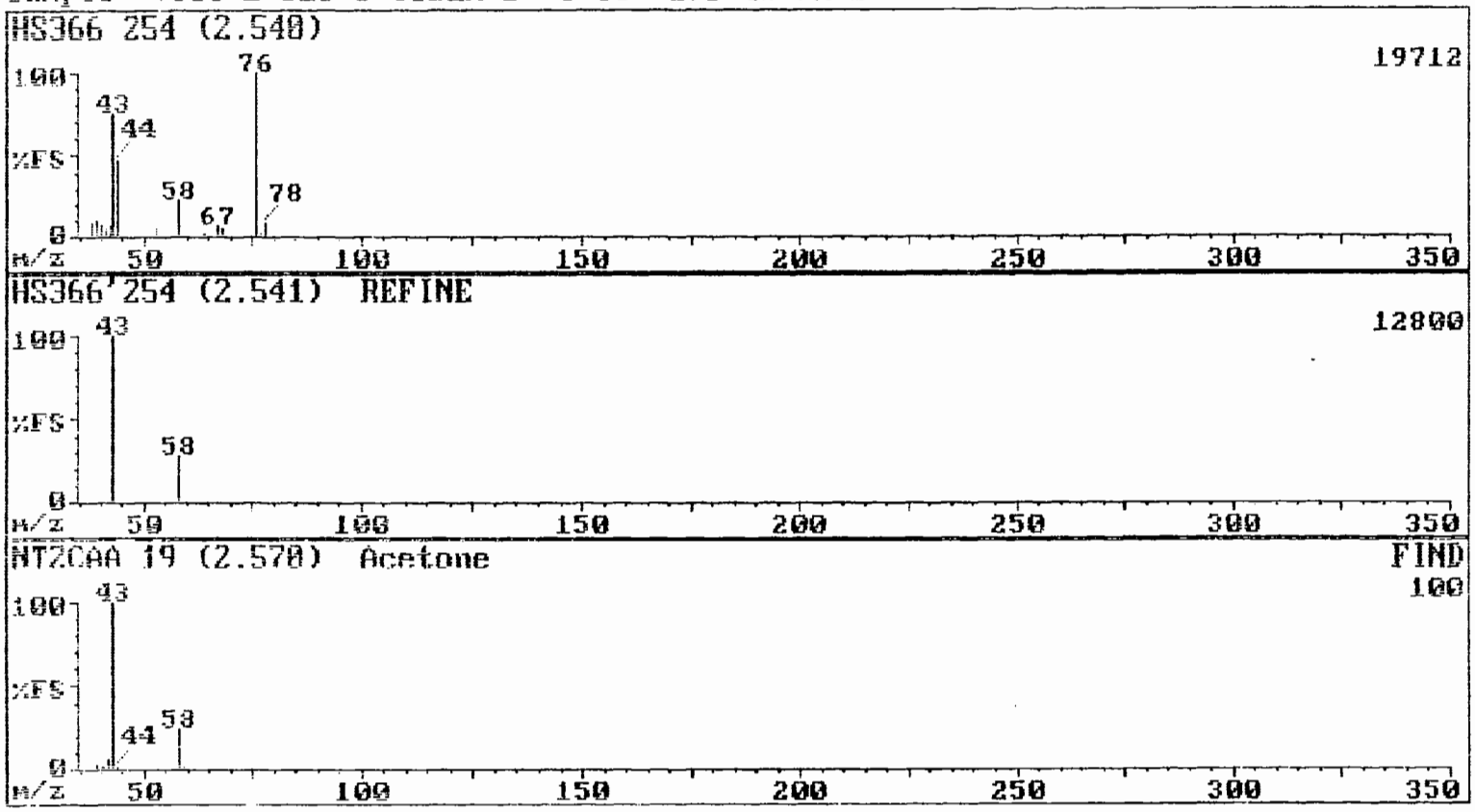


NTZCAA 18 (2.500) Carbon disulfide FIND 100



07-09-97 13:45 Triangle Laboratories of RTP, Inc. (919) 544-5729

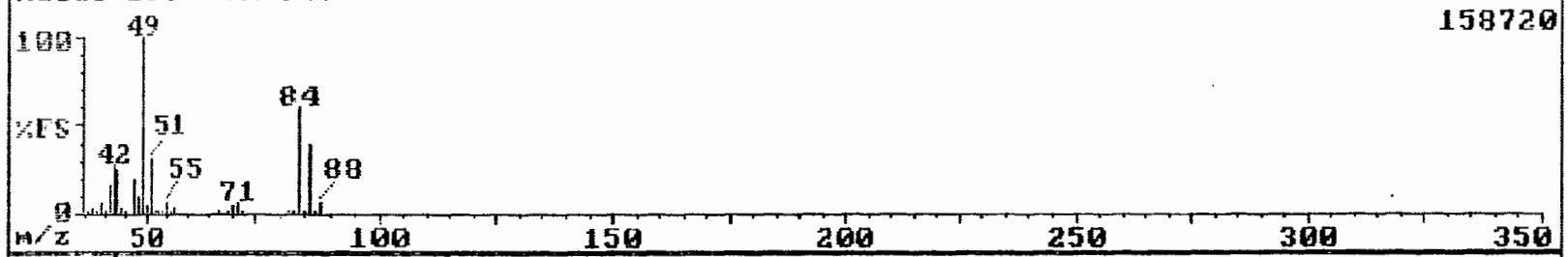
Sample: VOST-2 SET 3 TUBEA/B I/TC 173-46-8A/B TLI#42284 Instrument H



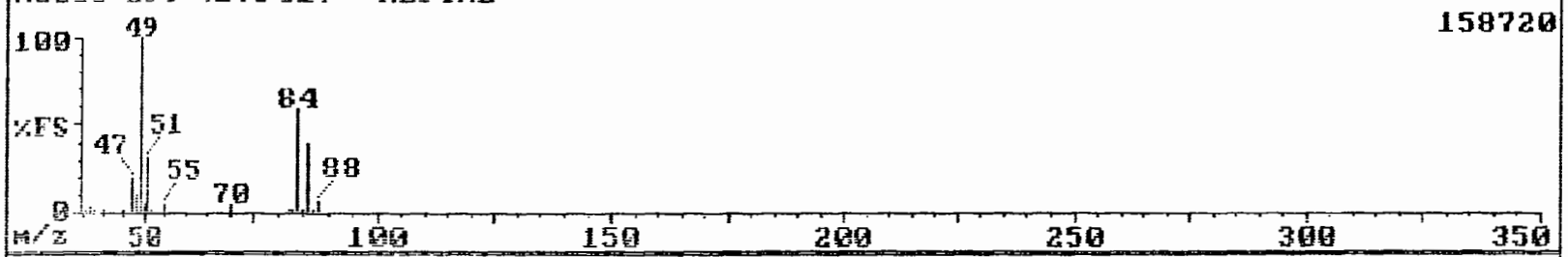
07-09-97 13:45 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 3 TUBEA/B T/TC 173-46-8A/B TLI#42284 Instrument H

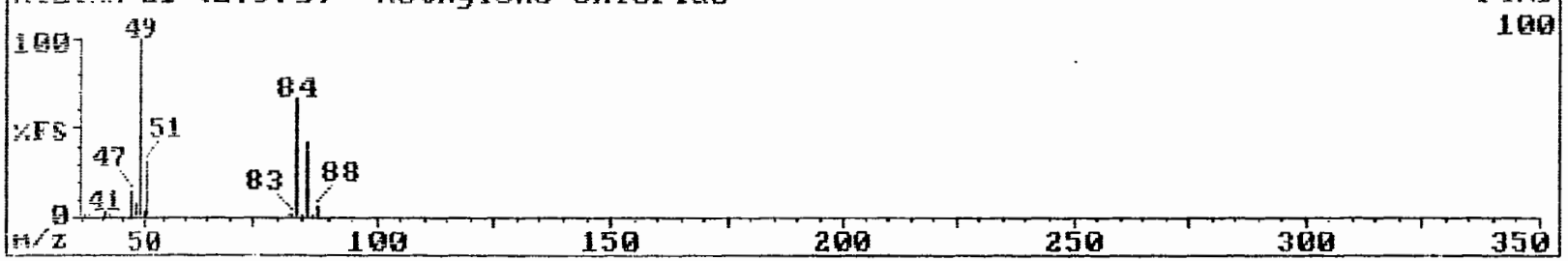
HS366 294 (2.940)



HS366 294 (2.941) REFINE

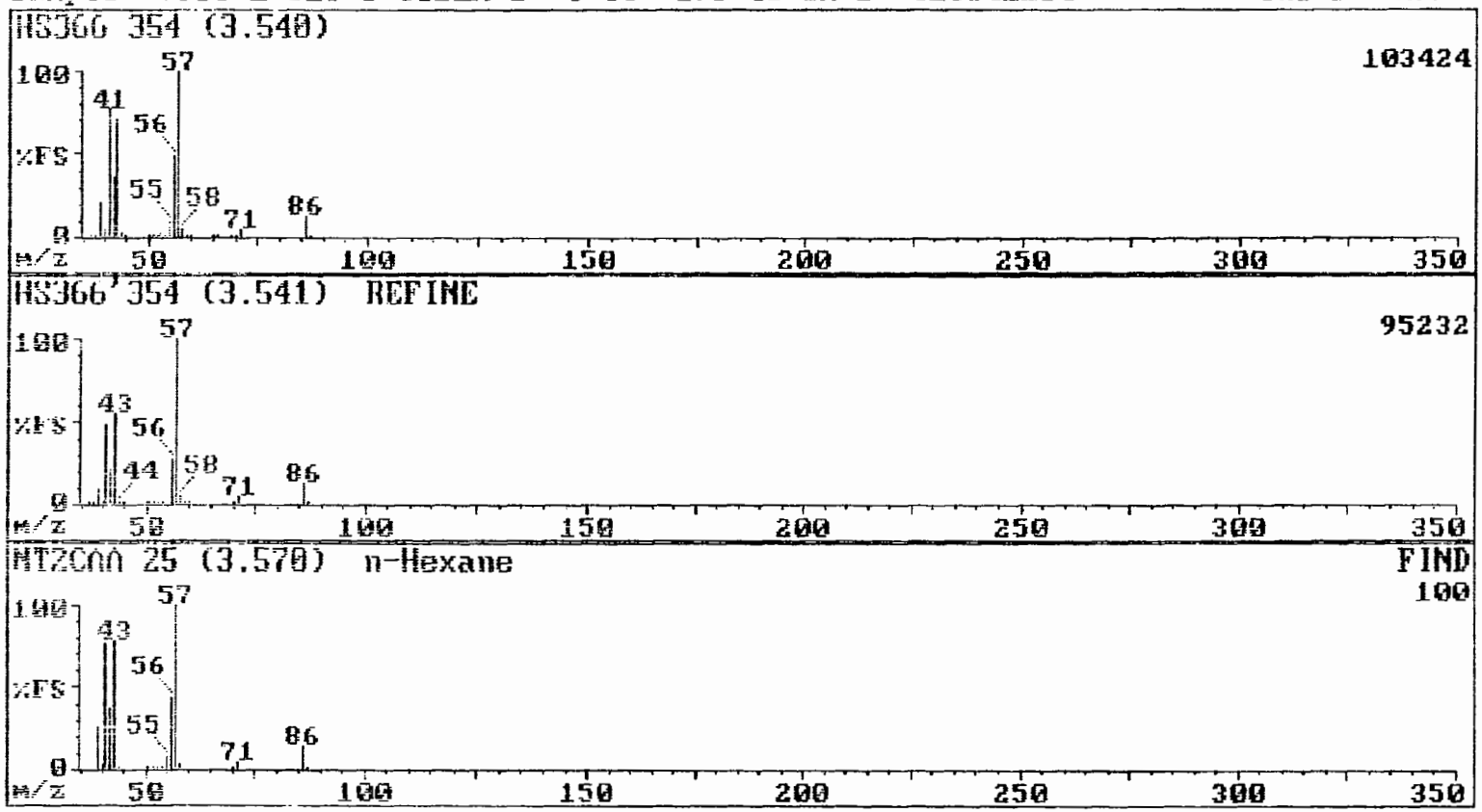


NTZCAA 21 (2.970) Methylene chloride FIND 100



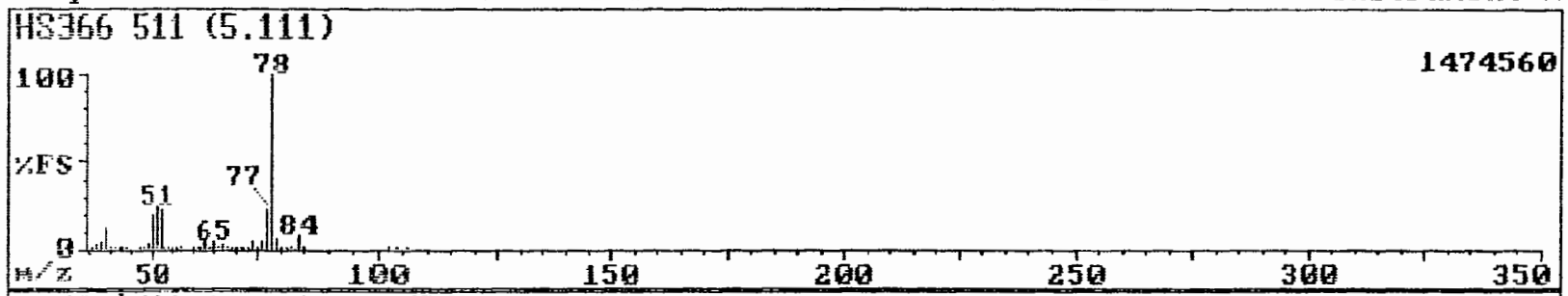
07-09-97 13:45 Triangle Laboratories of RTP, Inc. (919) 544-5729

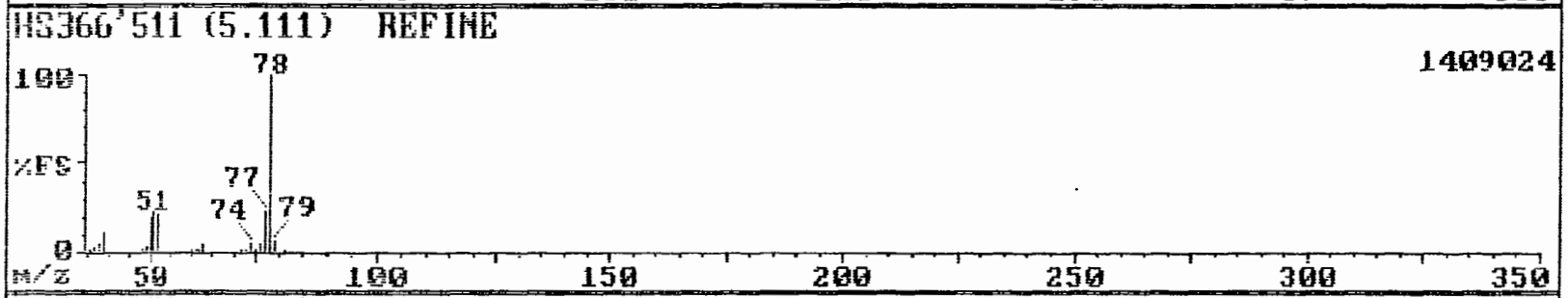
Sample: VOST-2 SET 3 TUBEA/B T/TC 173-46-8A/B TLI#42284 Instrument H

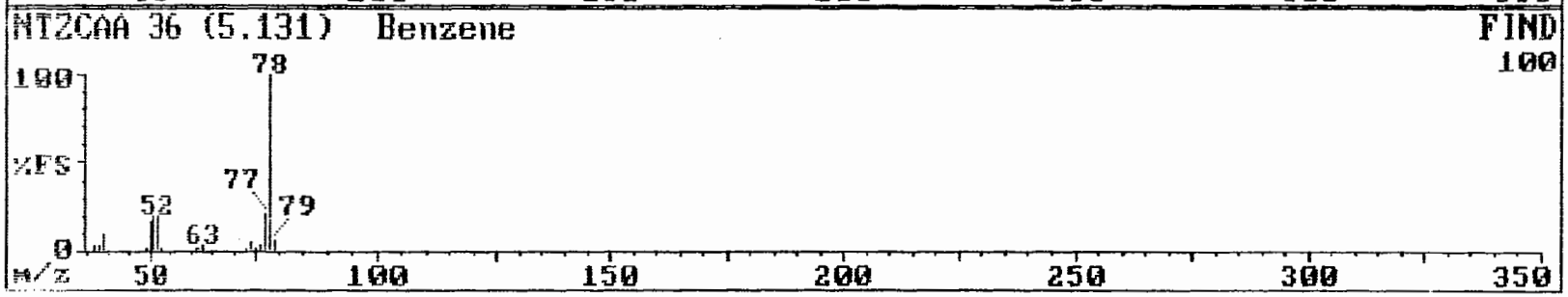


07-09-97 13:45 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 3 TUBEA/B T/TC 173-46-8A/B TLI#42284 Instrument H

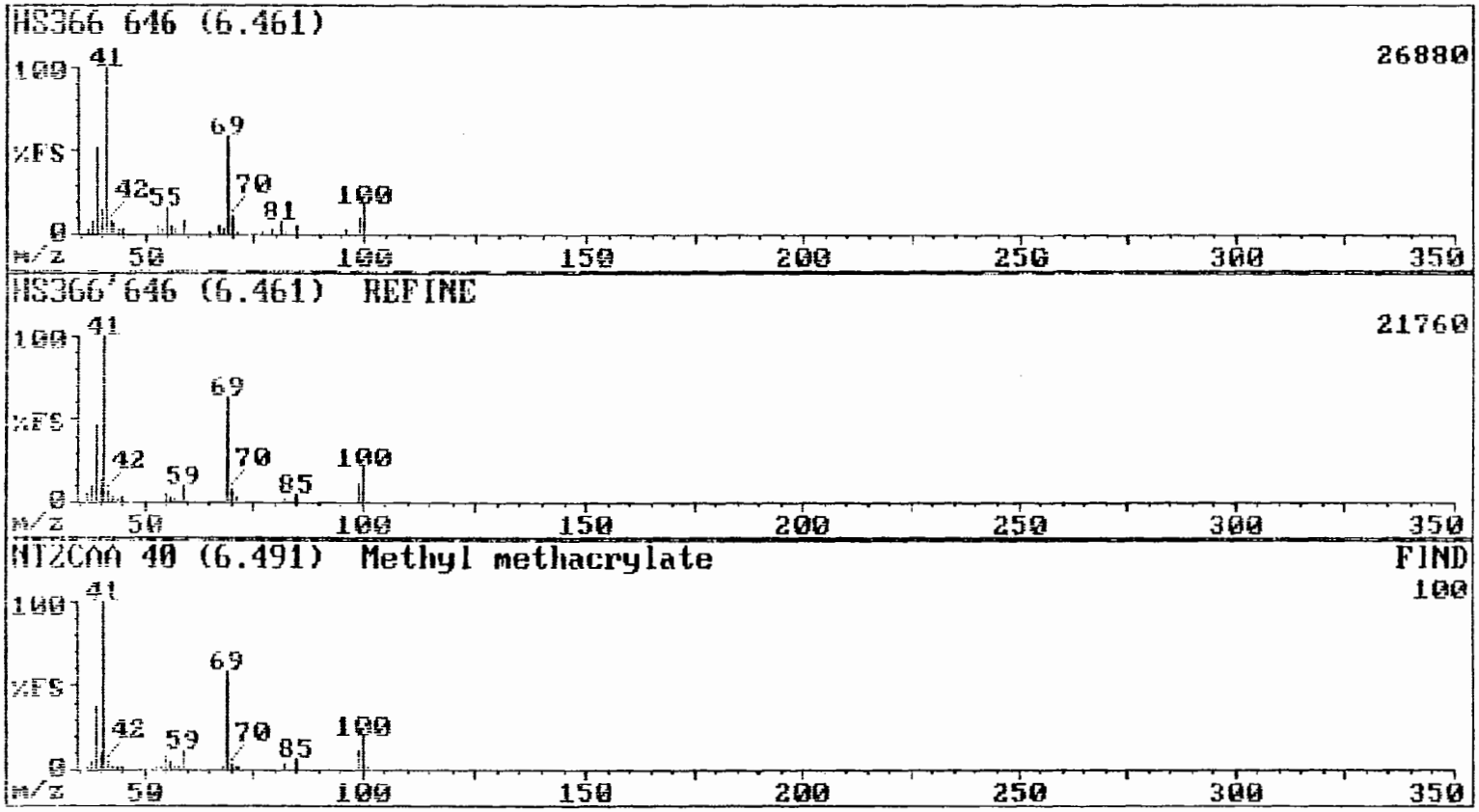






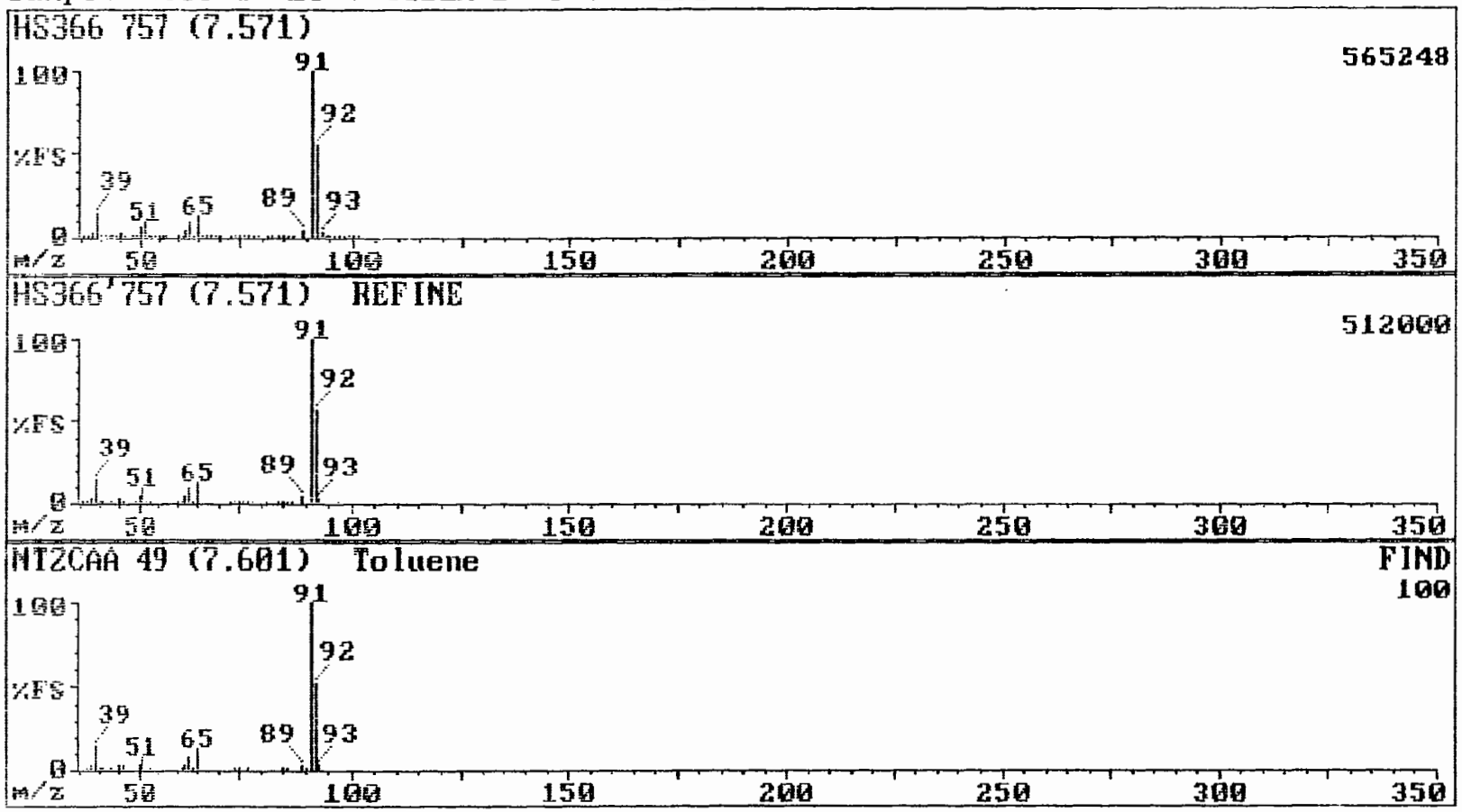
07-09-97 13:45 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 3 TUBEA/B T/TC 173-46-8A/B TLI#4Z284 Instrument H



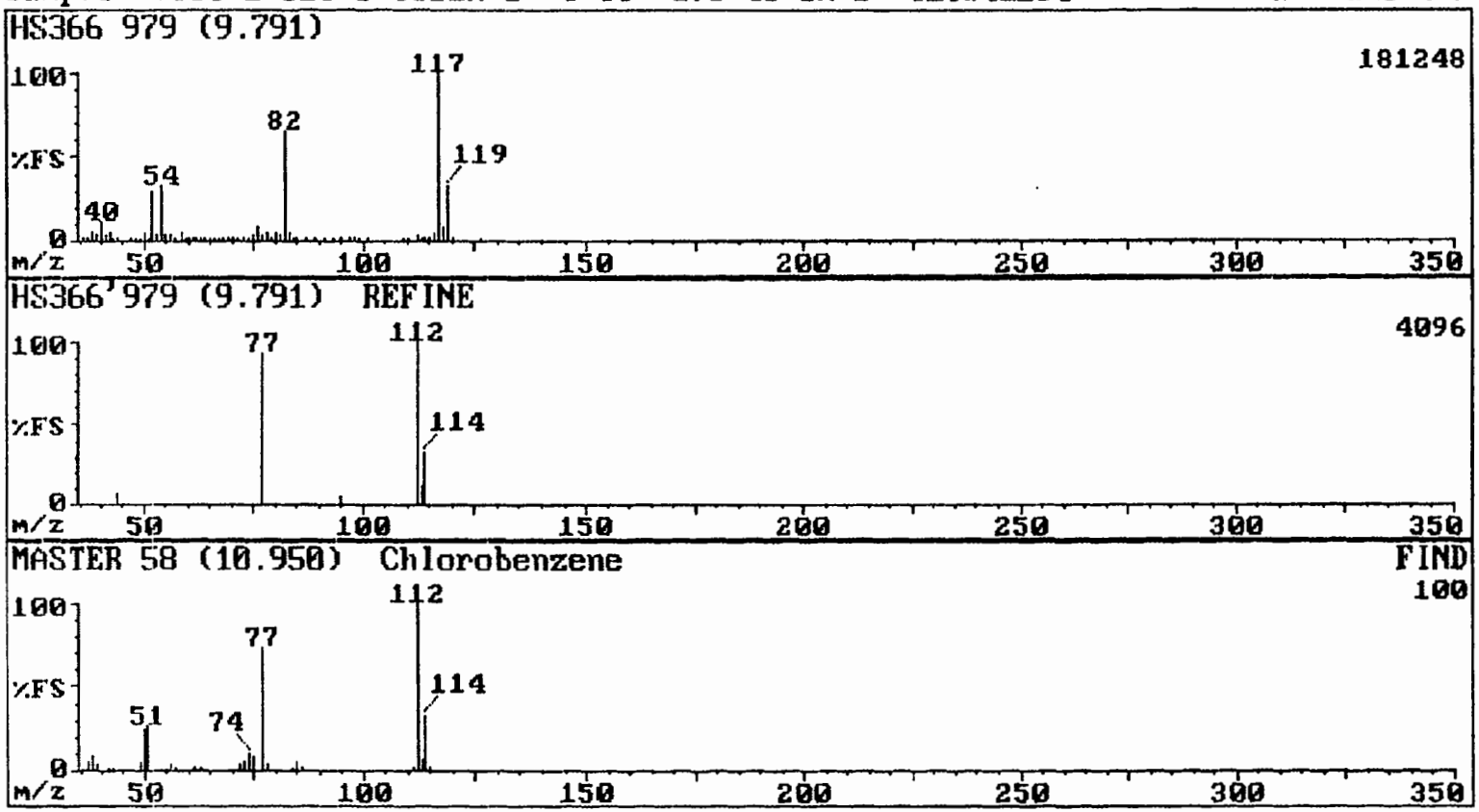
07-09-97 13:45 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 3 TUBEA/B T/TC 173-46-8A/B TLI#42284 Instrument H



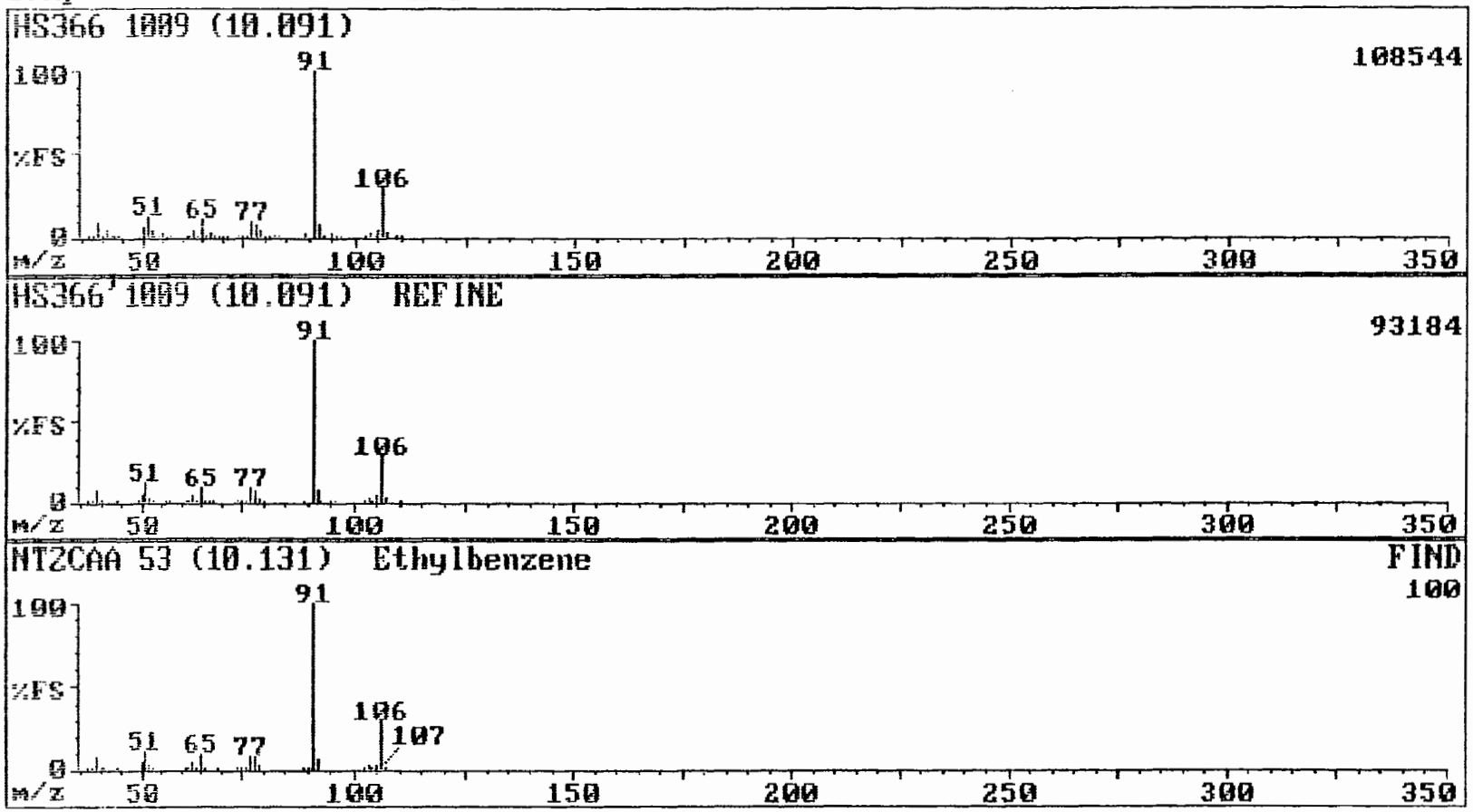
09-Jul-97 13:45 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 3 TUBEA/B T/TC 173-46-8A/B TLI#42284 Instrument H



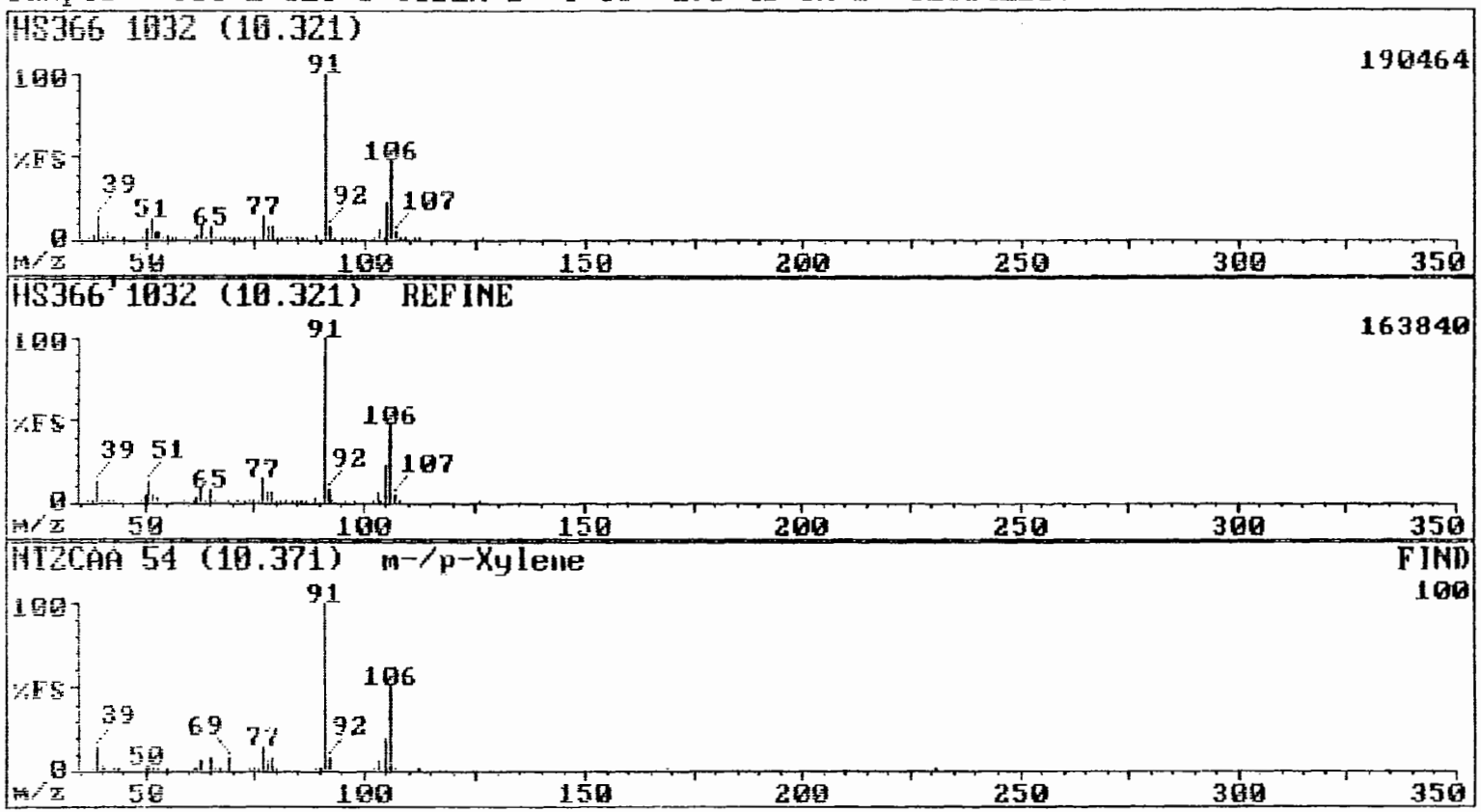
07-09-97 13:45 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 3 TUBEA/B T/TC 173-46-8A/B TLI#42284 Instrument H



07-09-97 13:45 Triangle Laboratories of RTP, Inc. (919) 544-5729

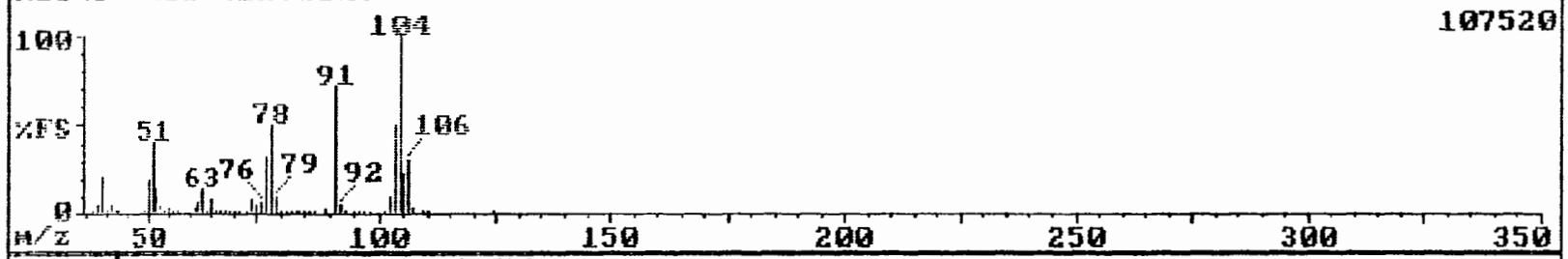
Sample: VOST-2 SET 3 TUBEA/B T/TC 173-46-8A/B TLI#42284 Instrument H



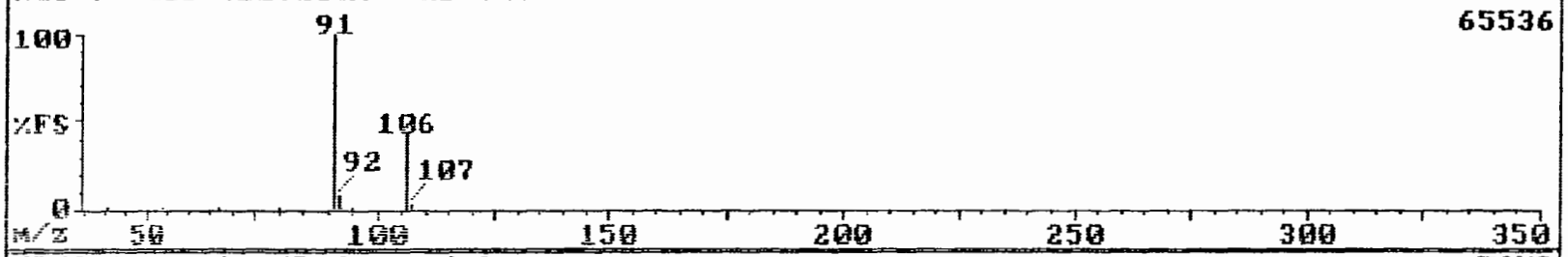
07-09-97 13:45 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 3 TUBEA/B T/TC 173-46-8A/B TLI#42284 Instrument H

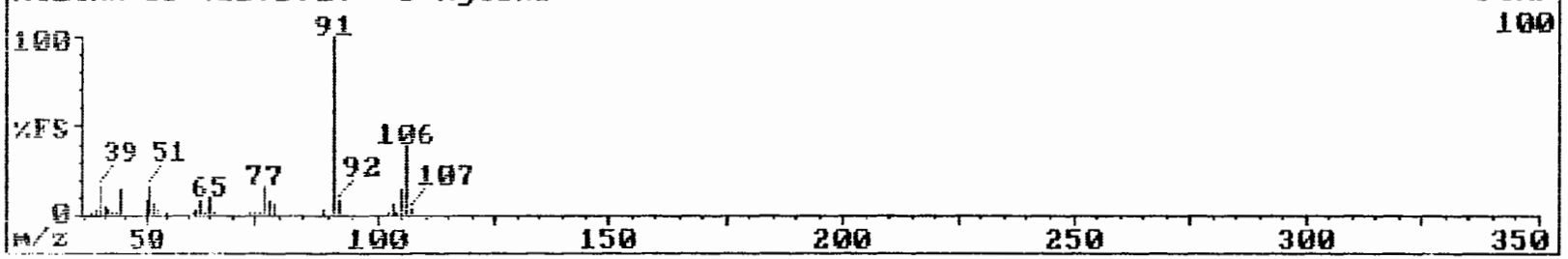
HS366 1103 (11.031)



HS366 1103 (11.031) REFINE

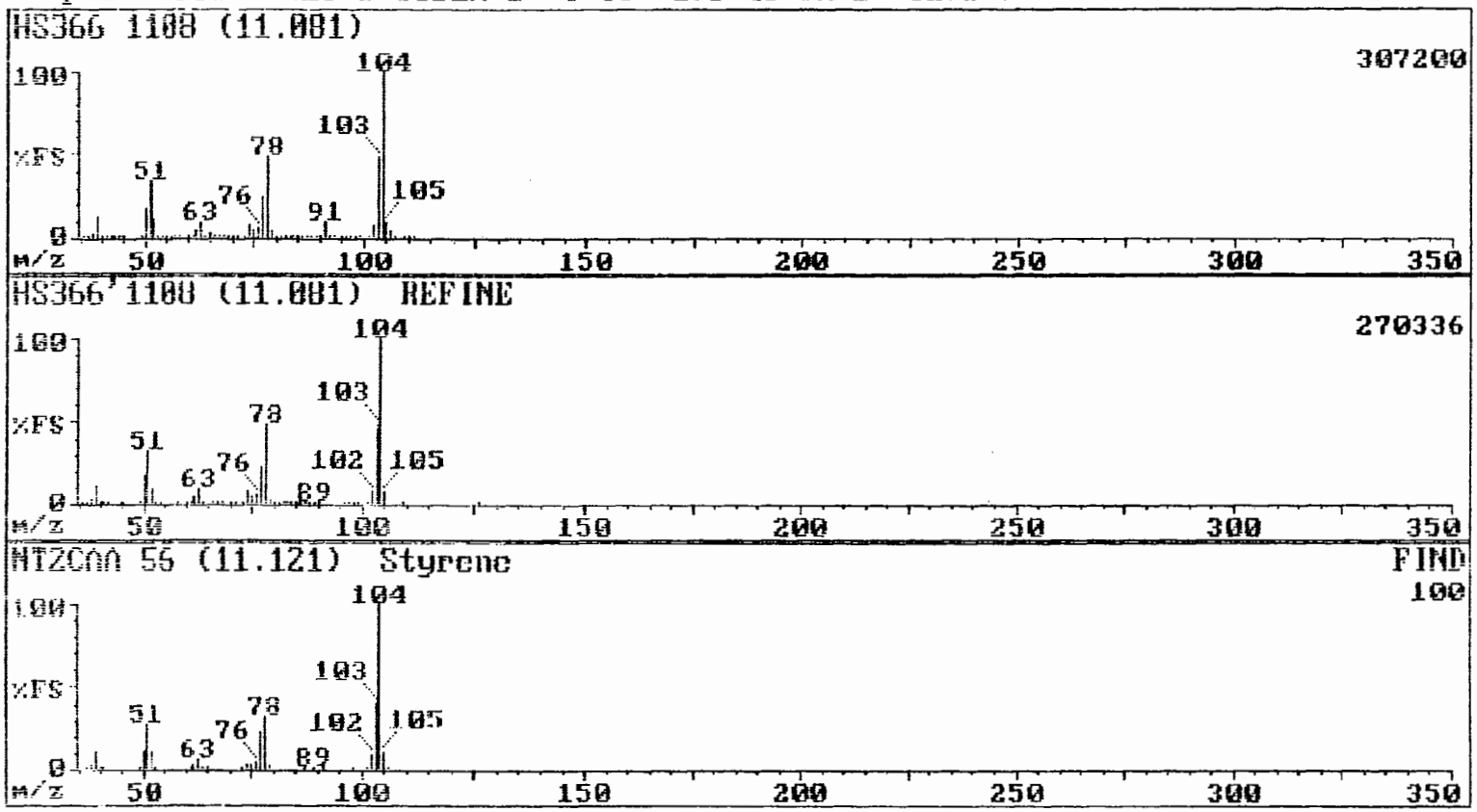


NTZCAA 55 (11.071) o-Xylene FIND 100



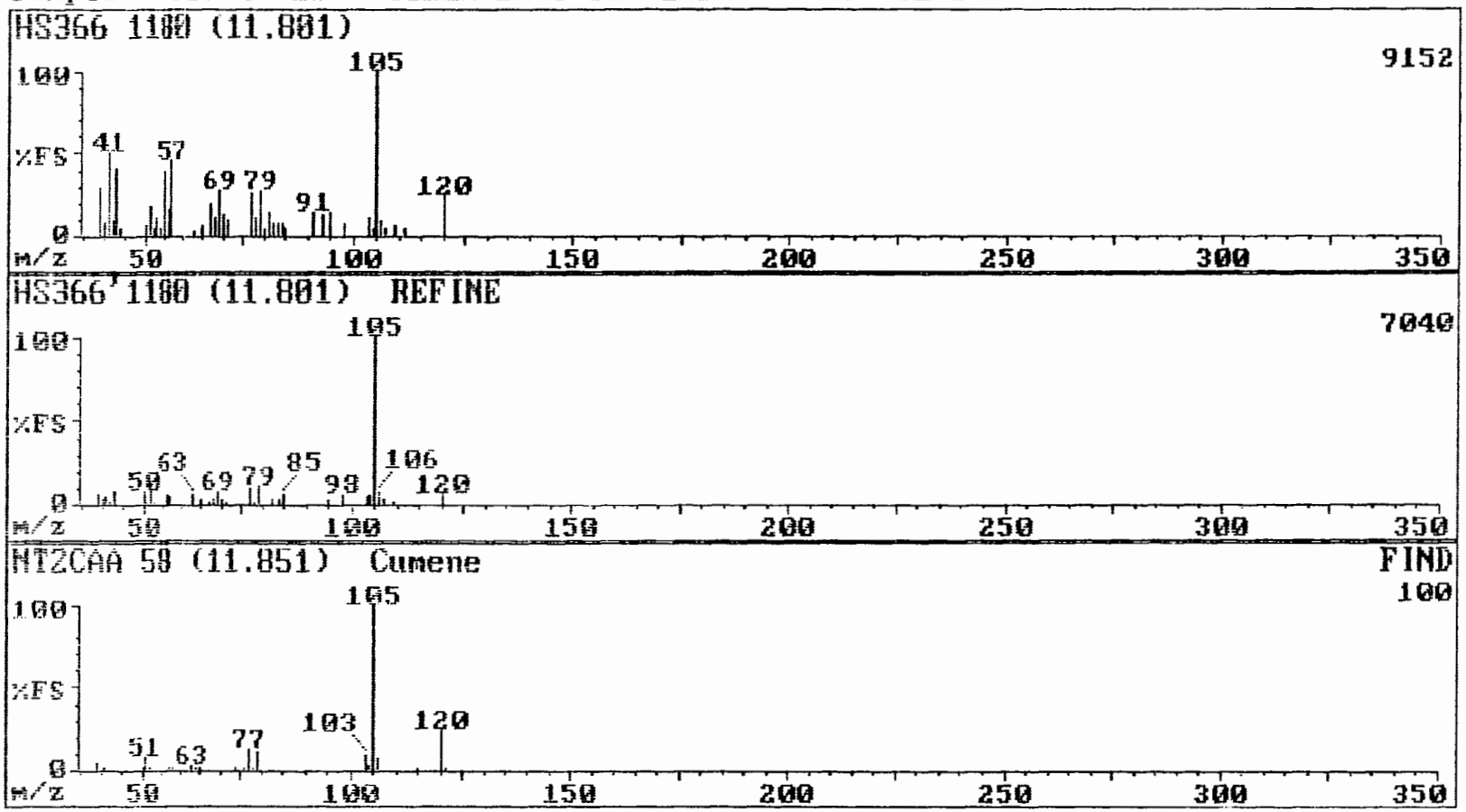
07-09-97 13:45 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 3 TUBEA/B T/TC 173-46-8A/B TLI#42284 Instrument H

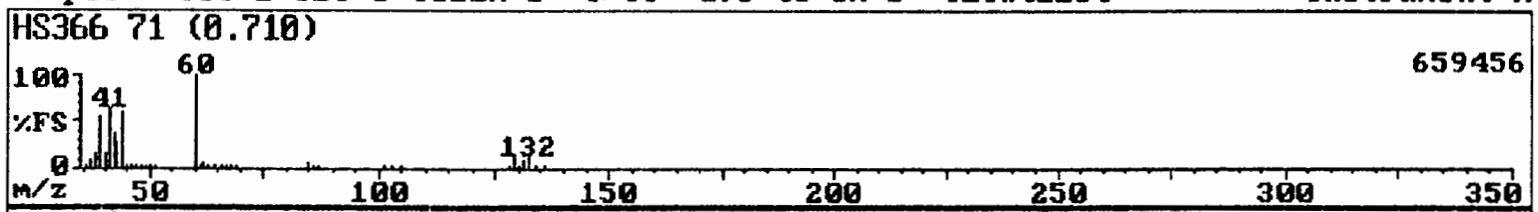


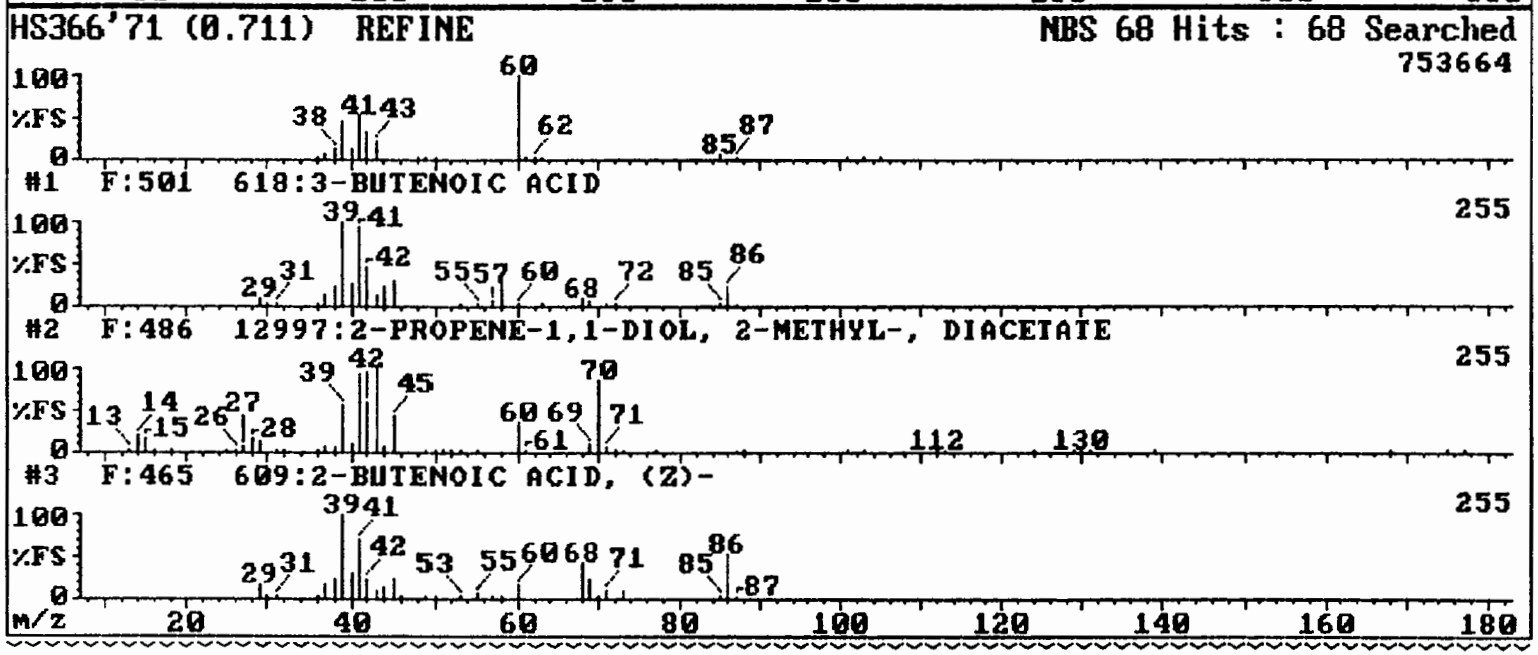
07-09-97 13:45 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 3 TUBEA/B T/TC 173-46-8A/B TL1#42284 Instrument H



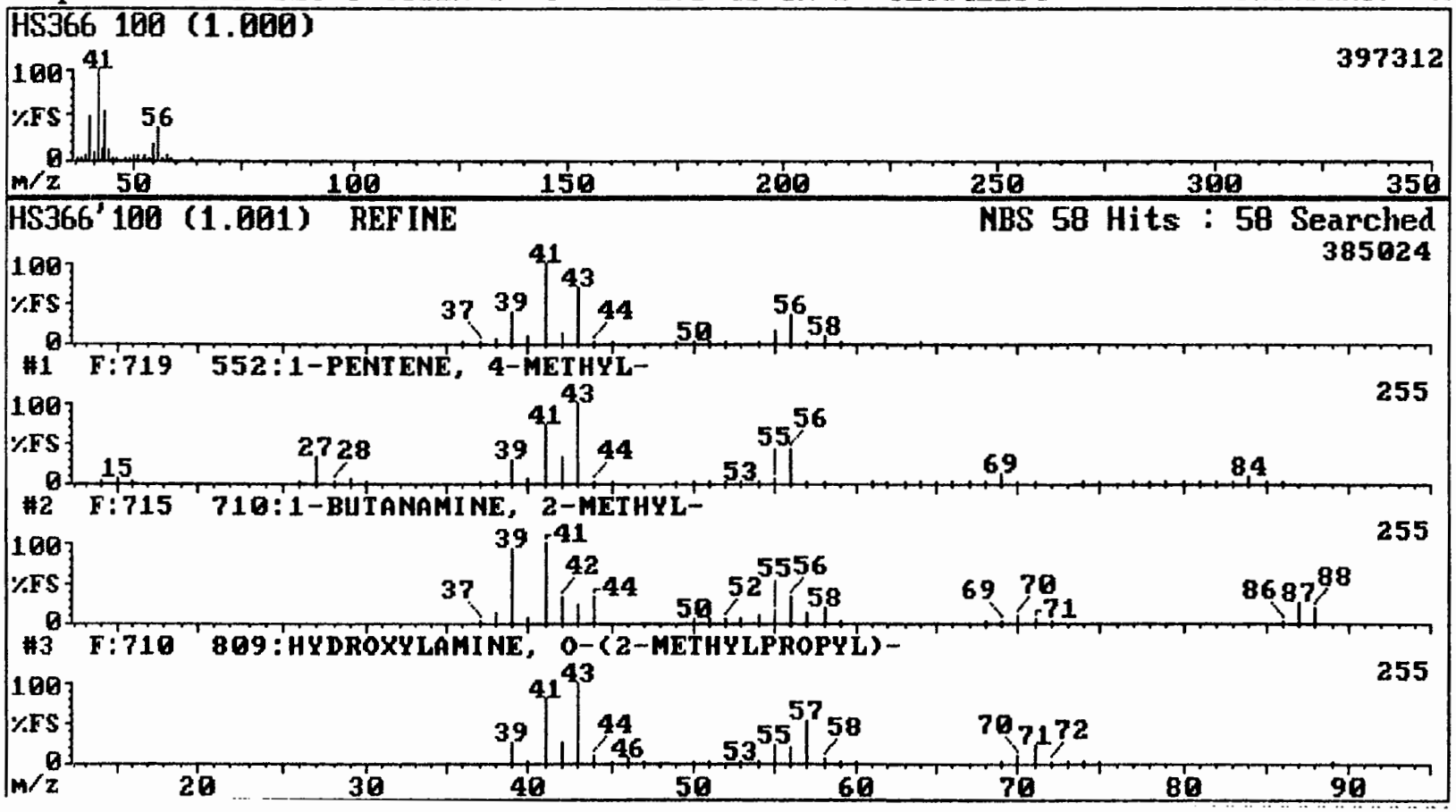
09-Jul-97 13:45 Triangle Laboratories of RTP, Inc. (919) 544-5729
Sample: VOST-2 SET 3 TUBEA/B T/TC 173-46-8A/B TLI#42284 Instrument H





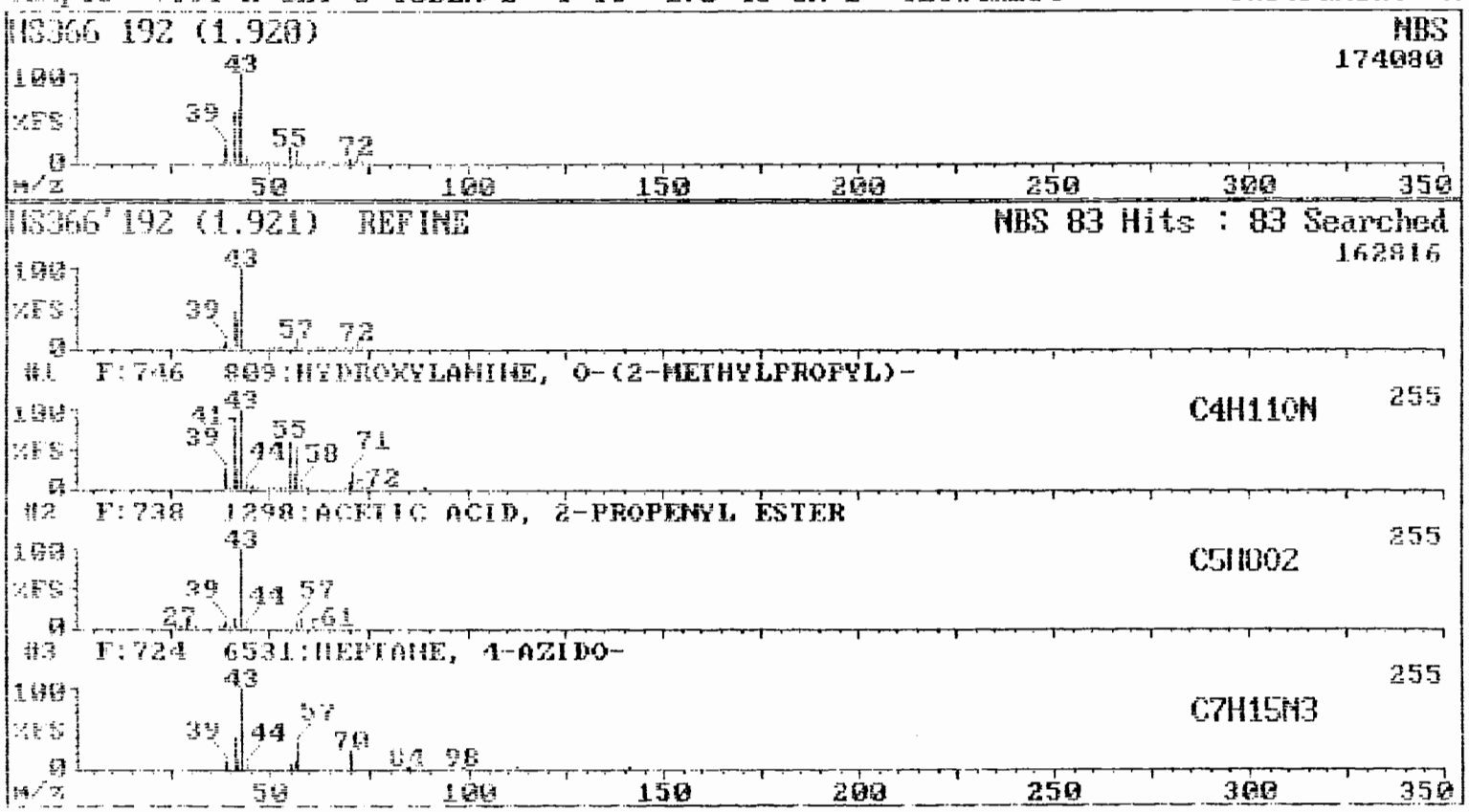
09-Jul-97 13:45 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 3 TUBEA/B T/TC 173-46-8A/B TLI#42284 Instrument H



07/09/97 13:45 Triangle Laboratories of RTP, Inc. (919) 544-5729

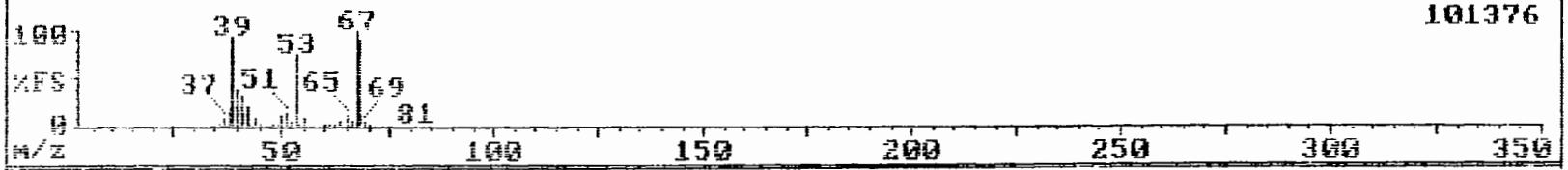
Sample: VOST-2 SET 3 TUBEA/B T/TC 173-46-8A/B TLI#42284 Instrument: H



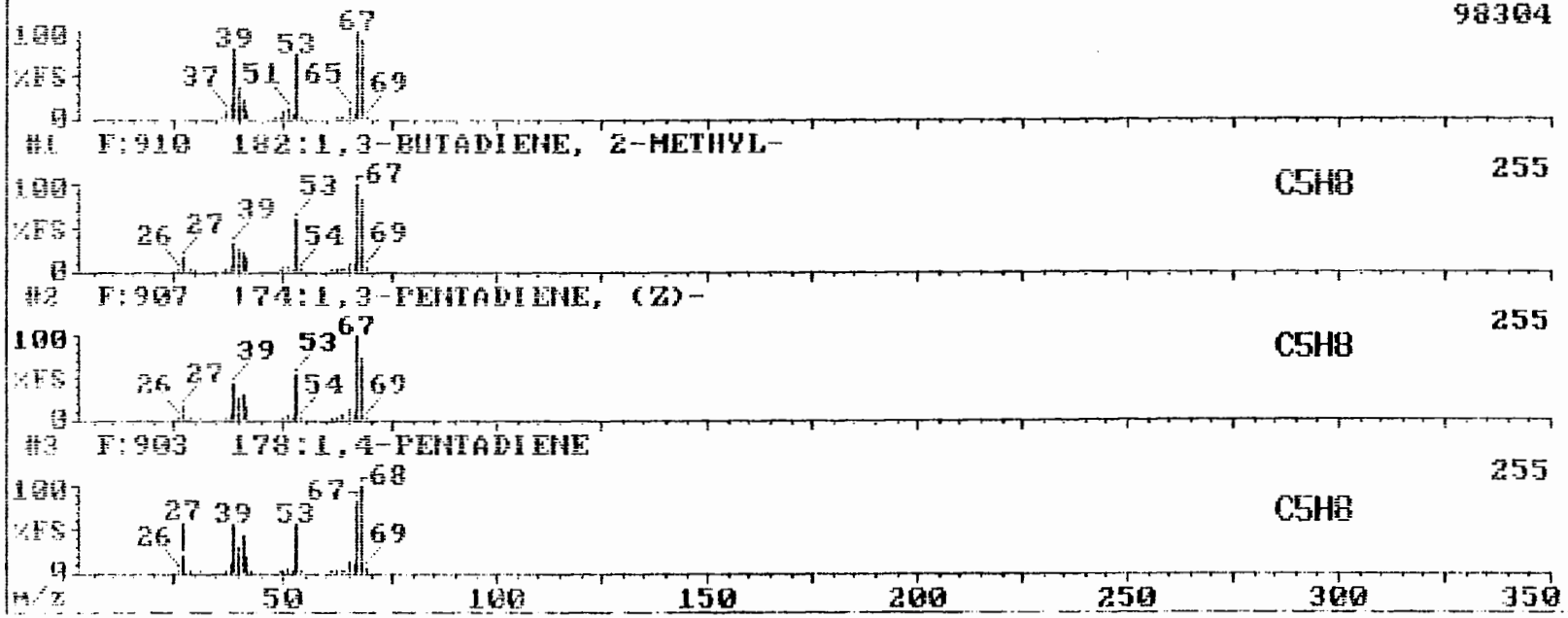
07/09/97 13:45 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 3 TUBEA/B T/TC 173-46-8A/B TLI#42284 Instrument: H

HS366 218 (2.180) NBS 101376

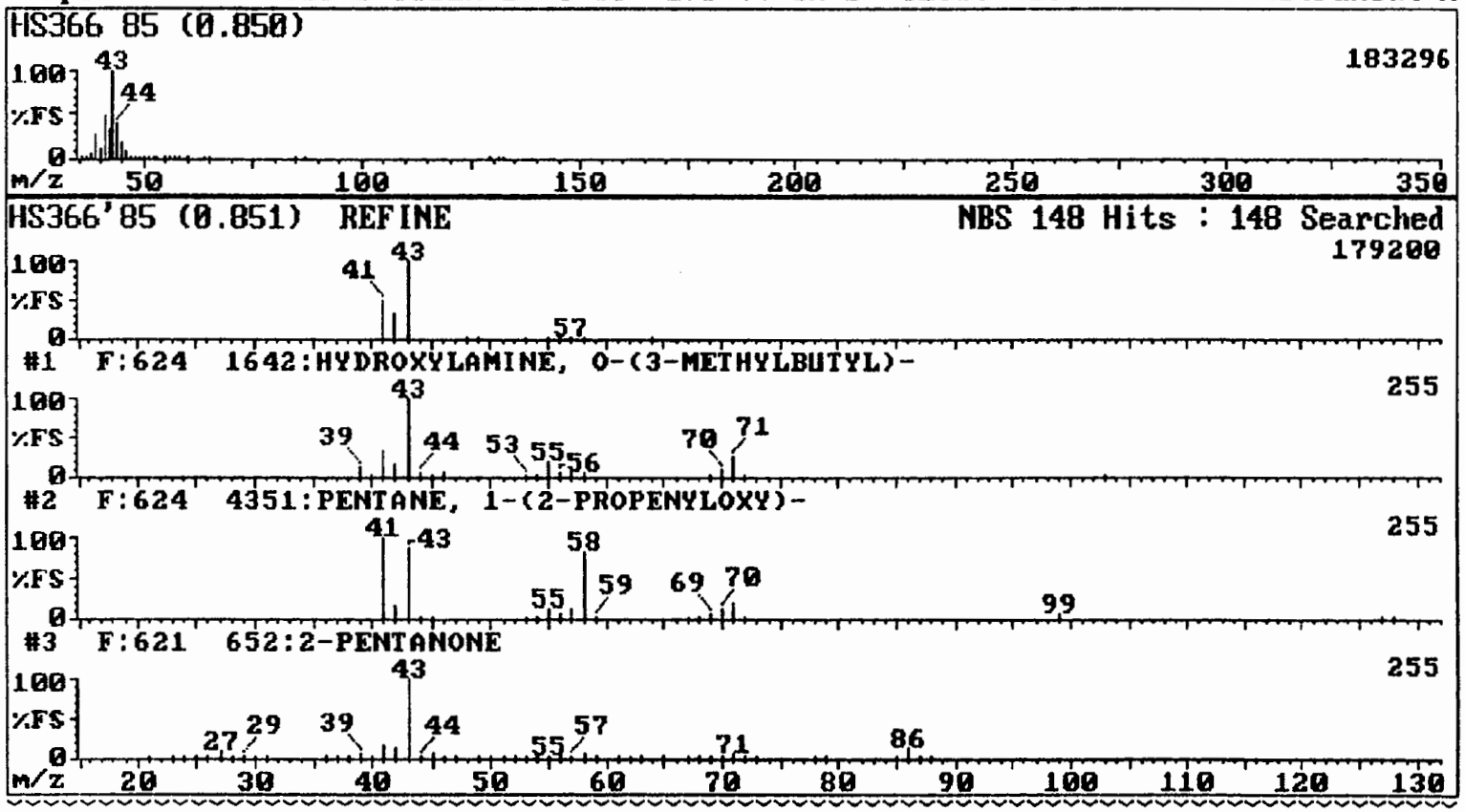


HS366'218 (2.181) REFINE NBS 33 Hits : 33 Searched 98304



09-Jul-97 13:45 Triangle Laboratories of RTP, Inc. (919) 544-5729

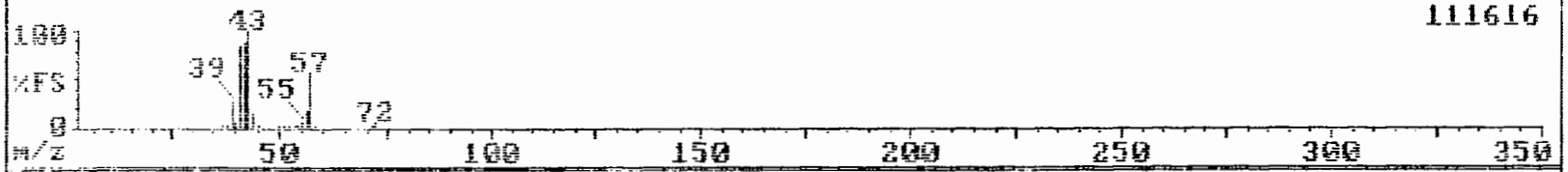
Sample: VOST-2 SET 3 TUBEA/B T/TC 173-46-8A/B TLI#42284 Instrument H



07/09/97 13:45 Triangle Laboratories of RTP, Inc. (919) 544-5729

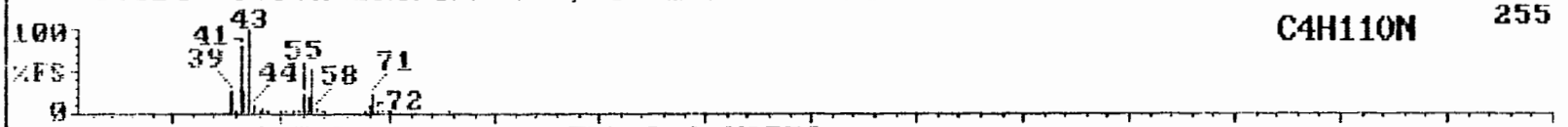
Sample: VOST-2 SET 3 TUBEA/B T/TC 173-46-8A/B TLI#42284 Instrument: H

HS366 160 (1.600) NBS 111616

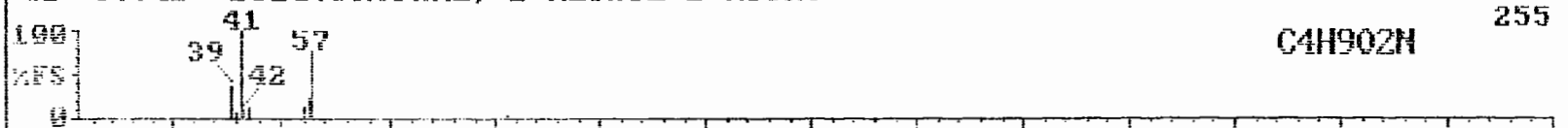


HS366'160 (1.601) REFINE NBS 242 Hits : 242 Searched 100352

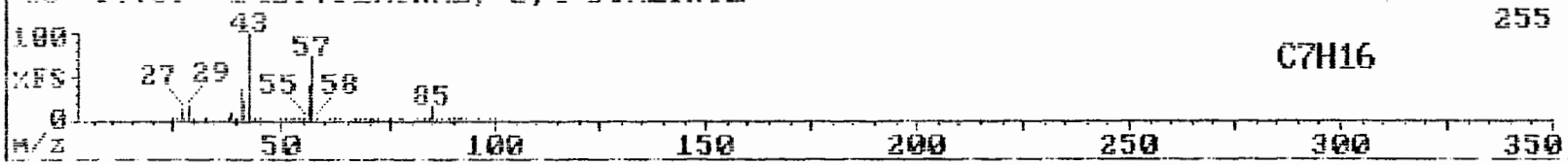
#1 F:814 809:HYDROXYLAMINE, O-(2-METHYLPROPYL)- C4H11ON 255



#2 F:742 1620:PROPANE, 2-METHYL-1-NITRO- C4H9O2N 255



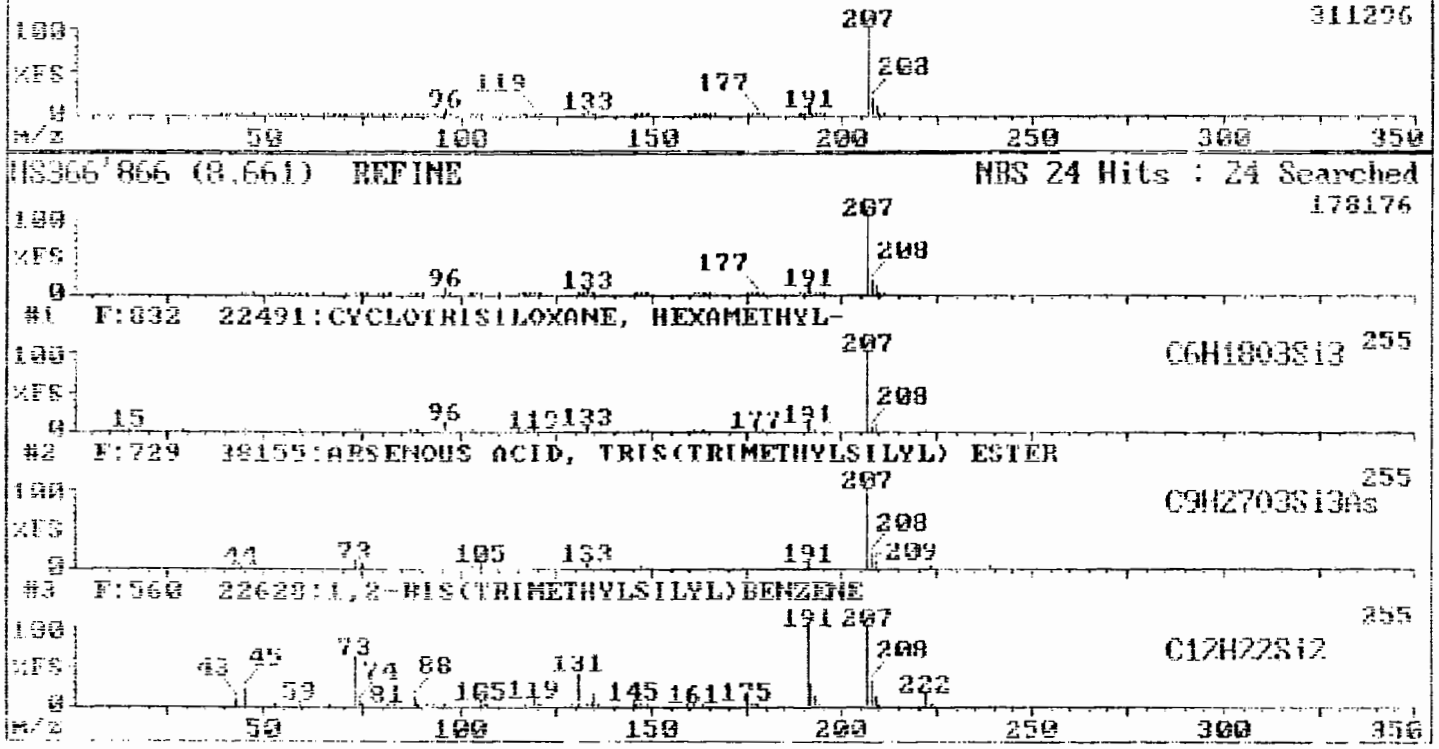
#3 F:739 1429:PENTANE, 2,4-DIMETHYL- C7H16 255



07/09/97 13:45 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 3 TUBEA/B T/TC 173-46-8A/B TLI#42284 Instrument: H

HS366 866 (8.661) NBS 311296



HS366 866 (8.661) REFINE NBS 24 Hits : 24 Searched

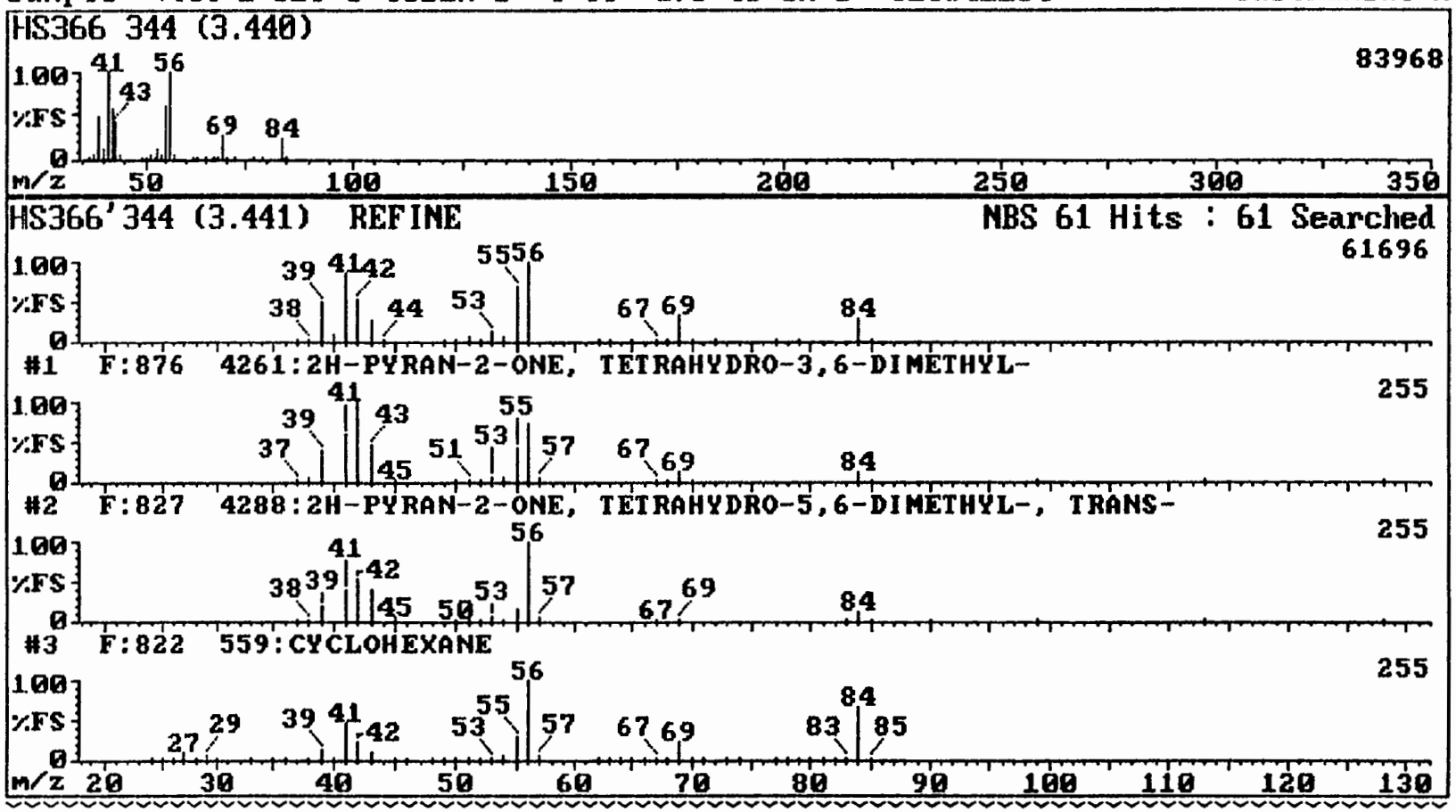
#1 F:832 22491:CYCLOTRISILOXANE, HEXAMETHYL- 178176 C6H18O3Si3 255

#2 F:729 38155:ARSENOUS ACID, TRIS(TRIMETHYLSILYL) ESTER 255 C9H27O3Si3As

#3 F:560 22628:1,2-BIS(TRIMETHYLSILYL)BENZENE 255 C12H22Si2

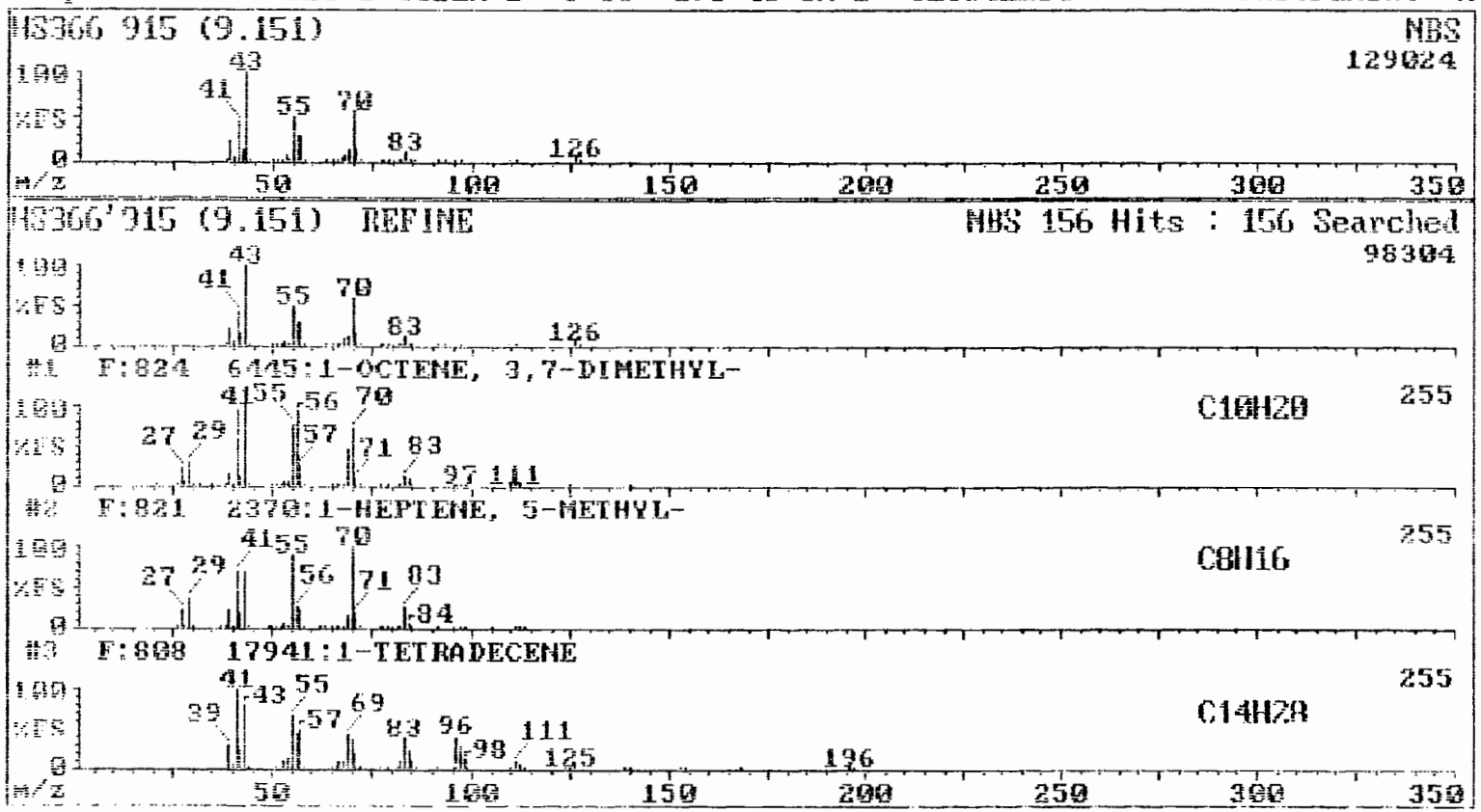
09-Jul-97 13:45 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 3 TUBEA/B T/TC 173-46-8A/B TLI#42284 Instrument H



07/09/97 13:45 Triangle Laboratories of RTP, Inc. (919) 544-5729

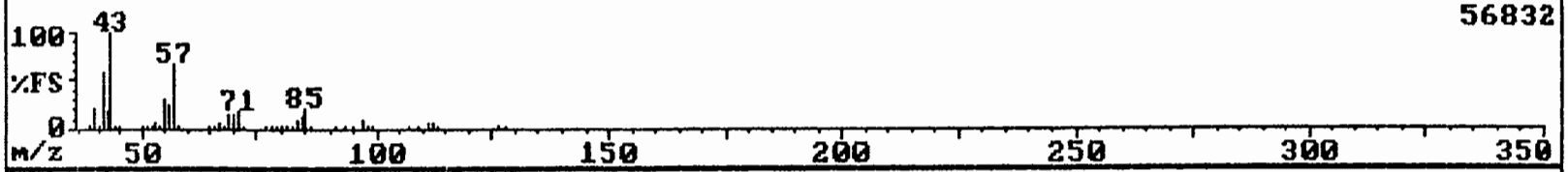
Sample: VOST-2 SET 3 TUBEA/B T/TC 173-46-8A/B TLI#42284 Instrument: H



09-Jul-97 13:45 Triangle Laboratories of RTP, Inc. (919) 544-5729

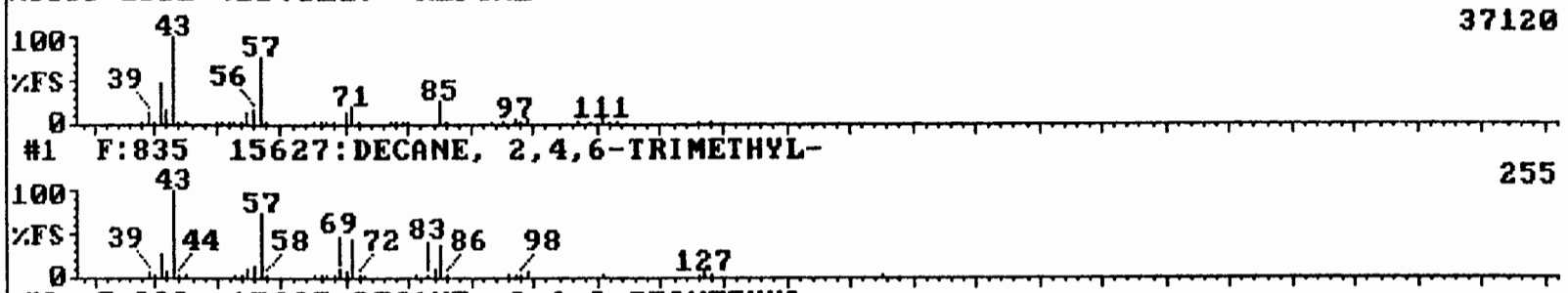
Sample: VOST-2 SET 3 TUBEA/B T/TC 173-46-8A/B TLI#42284 Instrument H

HS366 1062 (10.621) 56832



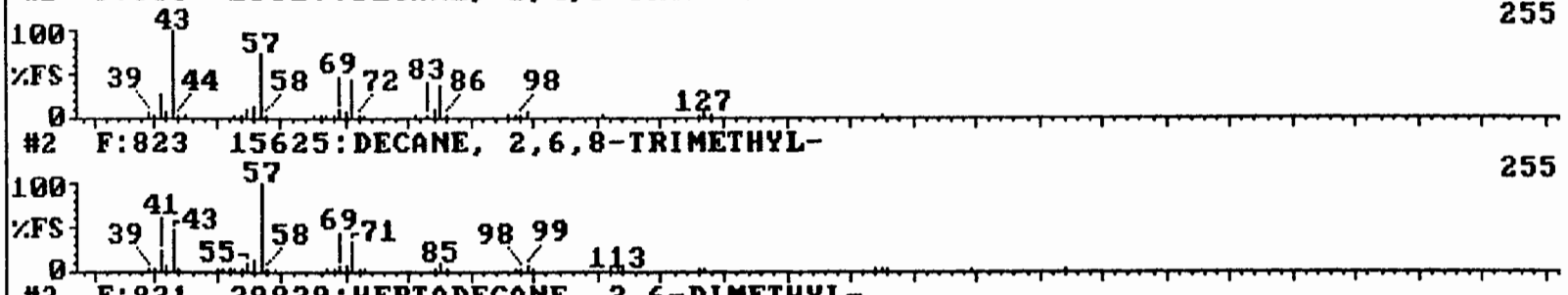
HS366'1062 (10.621) REFINE NBS 193 Hits : 193 Searched

37120



#1 F:835 15627:DECANE, 2,4,6-TRIMETHYL-

255

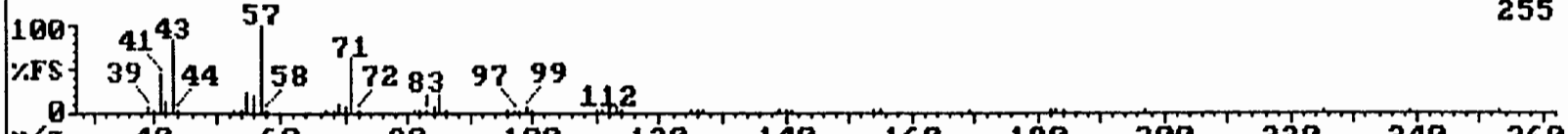


#2 F:823 15625:DECANE, 2,6,8-TRIMETHYL-

255

#3 F:821 29829:HEPTADECANE, 2,6-DIMETHYL-

255



Pacific Environmental Services

Project Number: 42284 | **Method 8240A VOST**
Sample File: HS367 | **Sample ID: VOST-2 SET 4 TUBEA/B T/TC**

Client Project: S407-003 | **Date Received: 06/30/97** | **Response File: ICALH708**
TLI ID: 173-46-9A,B
Date Analyzed : 07/09/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
Bromochloromethane		IS 1	4.47		
Chloromethane	0.152		0.91		0.05
Vinyl Chloride		U		0.001	0.05
1,3-Butadiene	0.124		1.06		0.05
Bromomethane	0.018	J	1.39		0.05
Chloroethane	0.004	J	1.51		0.05
Vinyl bromide		U		0.001	0.05
Trichlorofluoromethane	0.051		1.79		0.05
1,1-Dichloroethene		U		0.001	0.05
Iodomethane		U		0.001	0.05
Carbon disulfide	0.742		2.46		0.05
Acetone	0.097	B	2.54		0.05
Allyl chloride		U		0.002	0.05
Methylene chloride	0.232	B	2.94		0.05
trans-1,2-Dichloroethene		U		0.001	0.05
tert-Butyl methyl ether		U		0.001	0.05
Acrylonitrile	0.025	J	3.23		0.05
n-Hexane	0.161		3.53		0.05
1,1-Dichloroethane		U		0.001	0.05
1,2-Epoxybutane		U		0.004	0.05
cis-1,2-Dichloroethene		U		0.001	0.05
Chloroform		U		0.001	0.05
1,2-Dichloroethane		U		0.001	0.05
Isooctane		U		0.001	0.05
1,4-Difluorobenzene		IS 2	5.63		
Vinyl acetate		U		0.001	0.05

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

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TLI ID: 173-46-9A,B
Date Analyzed : 07/09/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
2-Butanone	0.013	J	4.36		0.05
1,1,1-Trichloroethane		U		0.001	0.05
Carbon tetrachloride		U		0.001	0.05
Benzene	1.246	BE	5.10		0.05
Trichloroethene		U		0.001	0.05
1,2-Dichloropropane		U		0.001	0.05
Ethyl acrylate		U		0.001	0.05
Methyl methacrylate	0.249		6.45		0.05
Bromodichloromethane		U		0.001	0.05
cis-1,3-Dichloropropene		U		0.001	0.05
trans-1,3-Dichloropropene		U		0.001	0.05
1,1,2-Trichloroethane		U		0.001	0.05
Dibromochloromethane		U		0.001	0.05
Ethylene dibromide		U		0.001	0.05
Bromoform		U		0.001	0.05
Chlorobenzene-d_5		IS 3	9.75		
4-Methyl-2-pentanone		U		0.001	0.05
Toluene	0.438	B	7.56		0.05
Tetrachloroethene	0.006	J	8.37		0.05
2-Hexanone		U		0.001	0.05
Chlorobenzene	0.005	J	9.79		0.05
Ethylbenzene	0.068		10.08		0.05
m-/p-Xylene	0.166		10.31		0.10
o-Xylene	0.065		11.02		0.05
Styrene	0.313		11.07		0.05
1,1,2,2-Tetrachloroethane		U		0.001	0.05

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

Triangle Laboratories of RTP, Inc.
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

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Pacific Environmental Services

Project Number: 42284 | Method 8240A VOST
Sample File: HS367 | Sample ID: VOST-2 SET 4 TUBEA/B T/TC

Client Project: S407-003 | Date Received: 06/30/97 | Response File: ICALH708
TLI ID: 173-46-9A,B
Date Analyzed : 07/09/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
Cumene	0.006	J	11.80		0.05

Surrogate Summary	Amount (ug)	RT	IS Ref	%REC
1,2-Dichloroethane-d_4	0.235	5.08	1	94
Benzene-d_6	0.260	5.06	2	104
Toluene-d_8	0.289	7.47	3	116

Reviewed by TW Date 7/22/97

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Client Project:	S407-003	Date Received:	06/30/97
TLI ID:	173-46-9A,B	Date Analyzed:	07/09/97
	Dilution Factor:	1.00	

Tentatively Identified Compounds

Name	RT	Area	IS RT	IS Area	Amount, ug
Unknown	0.711	21802560	4.471	4353547	1.252
C4H8 isomer	0.991	8017970	4.471	4353547	0.460
C5H8 Isomer	2.160	7194486	4.471	4353547	0.413
C6H12 Isomer	3.430	7189997	4.471	4353547	0.413
Pentane	1.910	6959172	4.471	4353547	0.400
Methylbutane Isomer	1.600	4581469	4.471	4353547	0.263
Alkene	9.151	7505355	9.751	8215840	0.228
Methyl Propane Isomer	0.841	3491404	4.471	4353547	0.200
C13H28 Isomer	10.621	5099787	9.751	8215840	0.155
Hexamethylcyclotrisiloxane	8.661	4285737	9.751	8215840	0.130

Triangle Laboratories, Inc.
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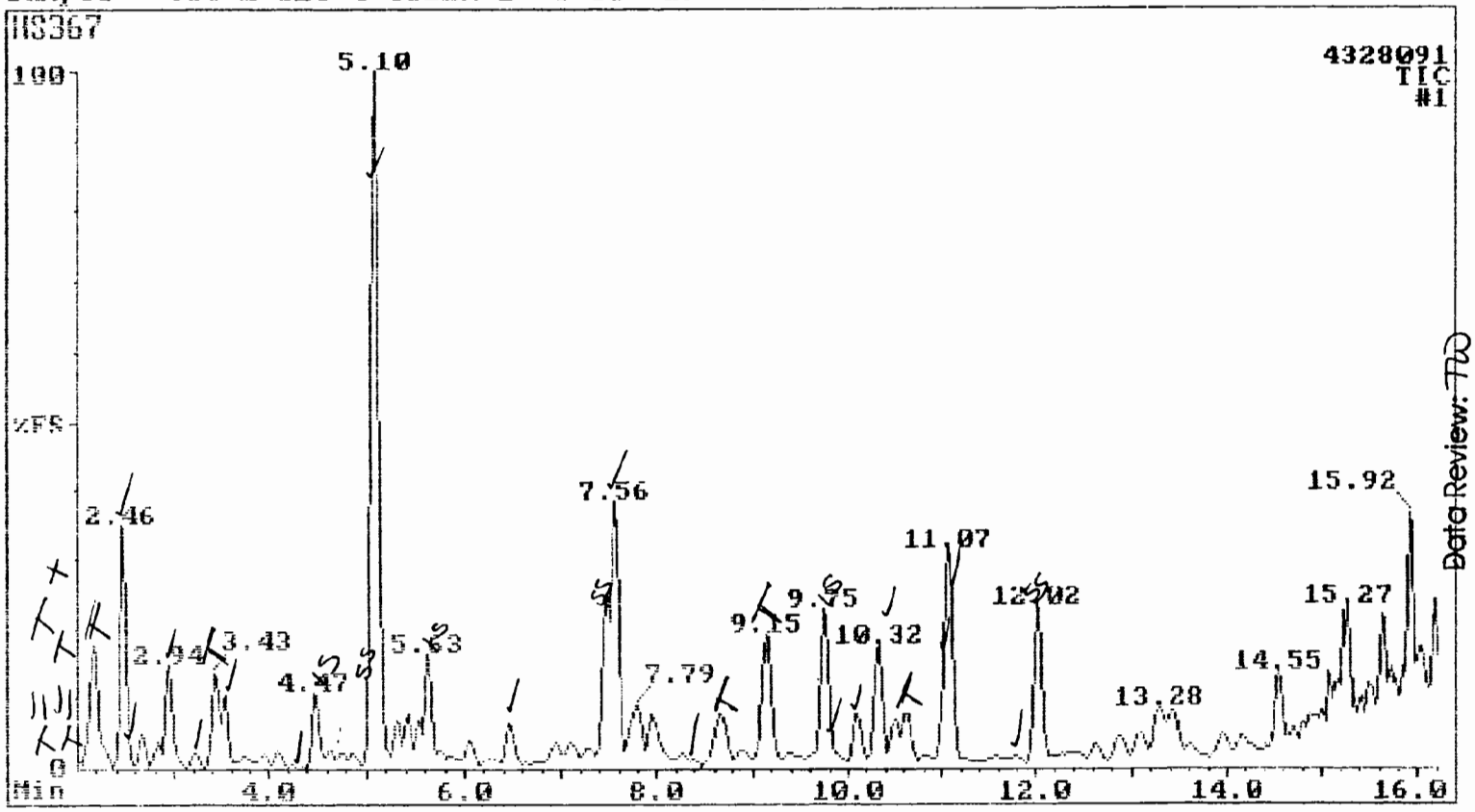
07-09-97 14:12 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 4 TUBEA/B T/TC 173-46-9A/B TLI#42284 Instrument H



Data Review: TWD
Date: 7-20-97

IAM DB M5387 LAB-BASE QUAN 07-09-97 14:45

No.	MAT	FOR	REV	Delta	Area	P.Flags	RT	QM	Name
1	100	87	98	-4	285344	bb	4.47	128	Bromochloromethane
2	100	91	97	2	1718972	bb	5.63	114	1,4-Difluorobenzene
3	100	95	98	0	2177212	bv	9.75	117	Chlorobenzene-d5
4	49	18	61	2	721200	bv	5.08	65	1,2-Dichloroethane-d4
5	98	79	81	0	2066276	bb	5.06	84	Benzene-d6
6	100	89	98	0	2857916	bv	7.47	98	Toluene-d8
~~7~~	~~17~~	~~10~~	~~33~~	~~-93~~	~~26764~~	~~A~~	~~13.42~~	98	o-Xylene-d10 FP TW
8	100	87	94	1	1443398	vv	12.02	95	4-Bromofluorobenzene
9	99	77	84	-1	365296	vv	0.91	50	Chloromethane
10	0	0	0	0	0		0.00	62	Vinyl Chloride
11	100	66	100	-2	~~1376060 A~~ 371808		~~0.99~~ 1.00	39	1,3-Butadiene mi TW
12	81	39	94	-2	45484	bb	1.39	94	Bromomethane
13	0	0	0	0	~~0~~ 5652		~~0.00~~ 1.51	64	Chloroethane mi TW
14	0	0	0	0	0		0.00	106	Vinyl bromide
15	85	52	93	-3	167628	bb	1.79	101	Trichlorofluoromethane
16	0	0	0	0	0		0.00	96	1,1-Dichloroethene
17	0	0	0	0	0		0.00	142	Iodomethane
18	100	87	99	-2	5341648	bv	2.46	76	Carbon disulfide
19	79	50	77	-1	145200	bb	2.54	43	Acetone
20	0	0	0	0	0		0.00	76	Allyl chloride
21	100	72	92	0	521304	bv	2.94	84	Methylene chloride
22	0	0	0	0	0		0.00	96	trans-1,2-Dichloroethene
23	0	0	0	0	0		0.00	73	tert-Butyl methyl ether
24	29	10	38	-1	12328	bb	3.23	53	Acrylonitrile
25	100	97	100	-1	859540	bb	3.53	57	n-Hexane
26	0	0	0	0	0		0.00	63	1,1-Dichloroethane
~~27~~	~~58~~	~~48~~	~~58~~	~~8~~	~~67331~~	~~vv~~	~~4.09~~	42	1,2-Epoxybutane FP TW
28	0	0	0	0	0		0.00	96	cis-1,2-Dichloroethene
29	0	0	0	0	0		0.00	83	Chloroform
30	0	0	0	0	0		0.00	62	1,2-Dichloroethane
~~31~~	~~40~~	~~55~~	~~62~~	~~29~~	~~369626~~	~~vv~~	~~5.53~~	57	Isooctane
~~32~~	~~32~~	~~30~~	~~62~~	~~-29~~	~~905216~~	~~bv~~	~~3.53~~	43	Vinyl acetate FP TW
33	95	76	76	0	3564	A	4.36	72	2-Butanone
34	0	0	0	0	0		0.00	97	1,1,1-Trichloroethane
35	0	0	0	0	0		0.00	117	Carbon tetrachloride
36	100	94	100	0	10855290	bv	5.10	78	Benzene
37	0	0	0	0	0		0.00	130	Trichloroethene
~~38~~	~~31~~	~~12~~	~~39~~	~~2~~	~~2772~~	~~A~~	~~6.09~~	63	1,2-Dichloropropane
~~39~~	~~49~~	~~30~~	~~55~~	~~3~~	~~49749~~	~~A~~	~~6.21~~	55	Ethyl acrylate FP TW
40	100	96	99	-1	414895	vb	6.45	69	Methyl methacrylate
41	0	0	0	0	0		0.00	83	Bromodichloromethane
42	0	0	0	0	0		0.00	75	cis-1,3-Dichloropropene
43	0	0	0	0	0		0.00	75	trans-1,3-Dichloropropen
44	0	0	0	0	0		0.00	97	1,1,2-Trichloroethane
45	0	0	0	0	0		0.00	129	Dibromochloromethane
46	0	0	0	0	0		0.00	107	Ethylene dibromide
47	0	0	0	0	0		0.00	173	Bromoform
~~48~~	~~37~~	~~35~~	~~77~~	~~-19~~	~~138353~~	~~A~~	~~7.27~~	43	4-Methyl-2-pentanone FP TW
49	100	94	99	0	2820272	bv	7.56	92	Toluene
50	68	31	77	0	21188	bb	8.37	164	Tetrachloroethene

Data Review: TW
Date: 7-20-97

No	MAT	FOR	REV	Delta	Area	P.Flags	RT	QM	Name
~~51~~	~~[illegible]~~	~~9~~	~~58~~	~~3~~	~~25018~~	~~vb~~	~~8.67~~	~~43~~	2-Hexanone FP TW
52	48	16	63	0	42480	bb	9.79	112	Chlorobenzene
53	100	87	98	0	304255	bv	10.08	106	Ethylbenzene
54	100	87	94	-1	923376	vv	10.31	106	m-/p-Xylene
55	100	78	83	1	346884	bv	11.02	106	o-Xylene
56	100	93	97	1	2750944	bv	11.07	104	Styrene
~~57~~	~~26~~	~~5~~	~~13~~	~~-6~~	~~7988~~	~~A~~	~~12.44~~	~~83~~	1,1,2,2-Tetrachl FP TW ethan
58	64	35	70	1	104012	bv	11.80	105	Cumene

07-09-97 14:12 Triangle Laboratories of RTP, Inc. (919) 544-5729

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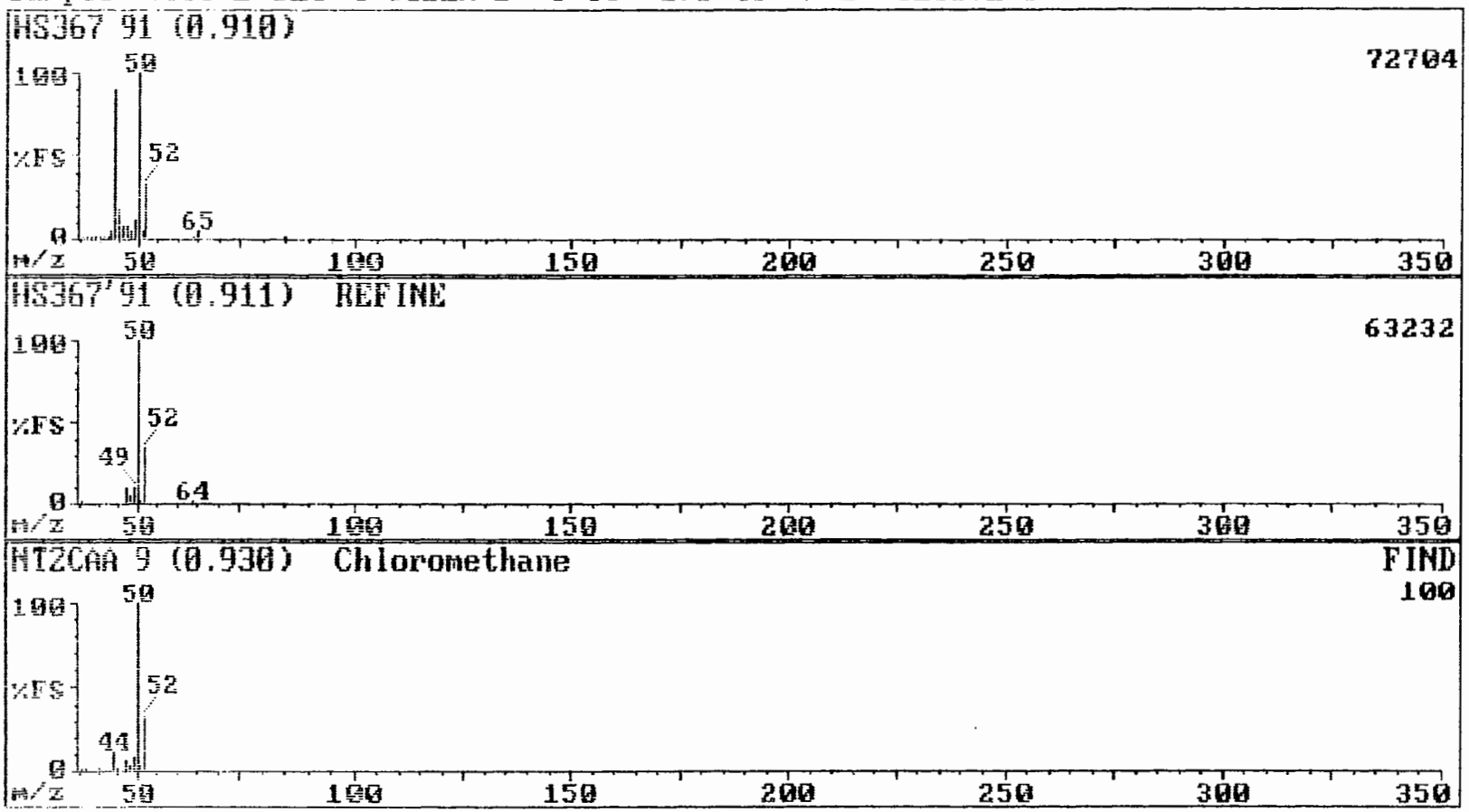

09-Jul-97 14:12 Triangle Laboratories of RTP, Inc. (919) 544-5729
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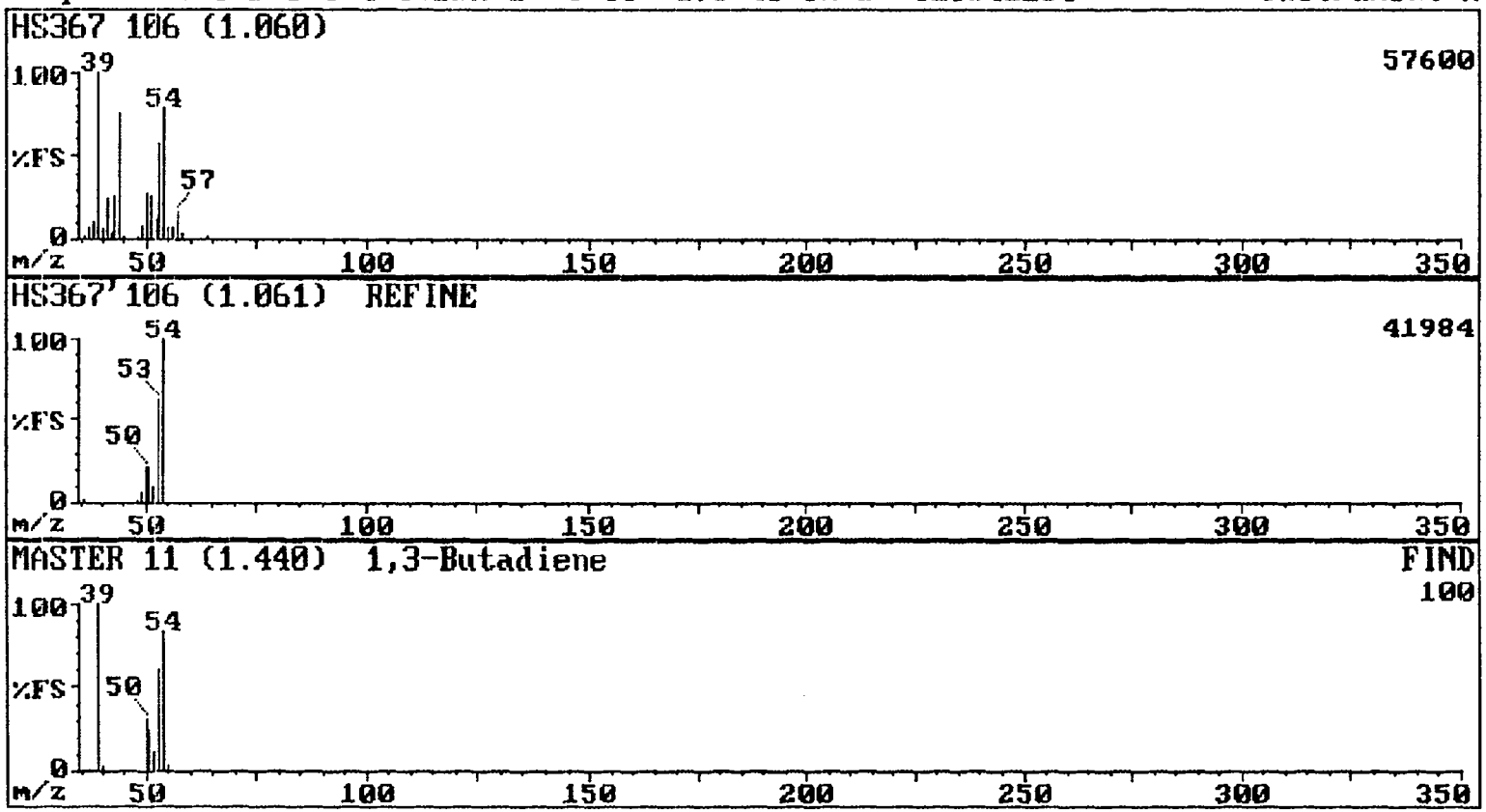

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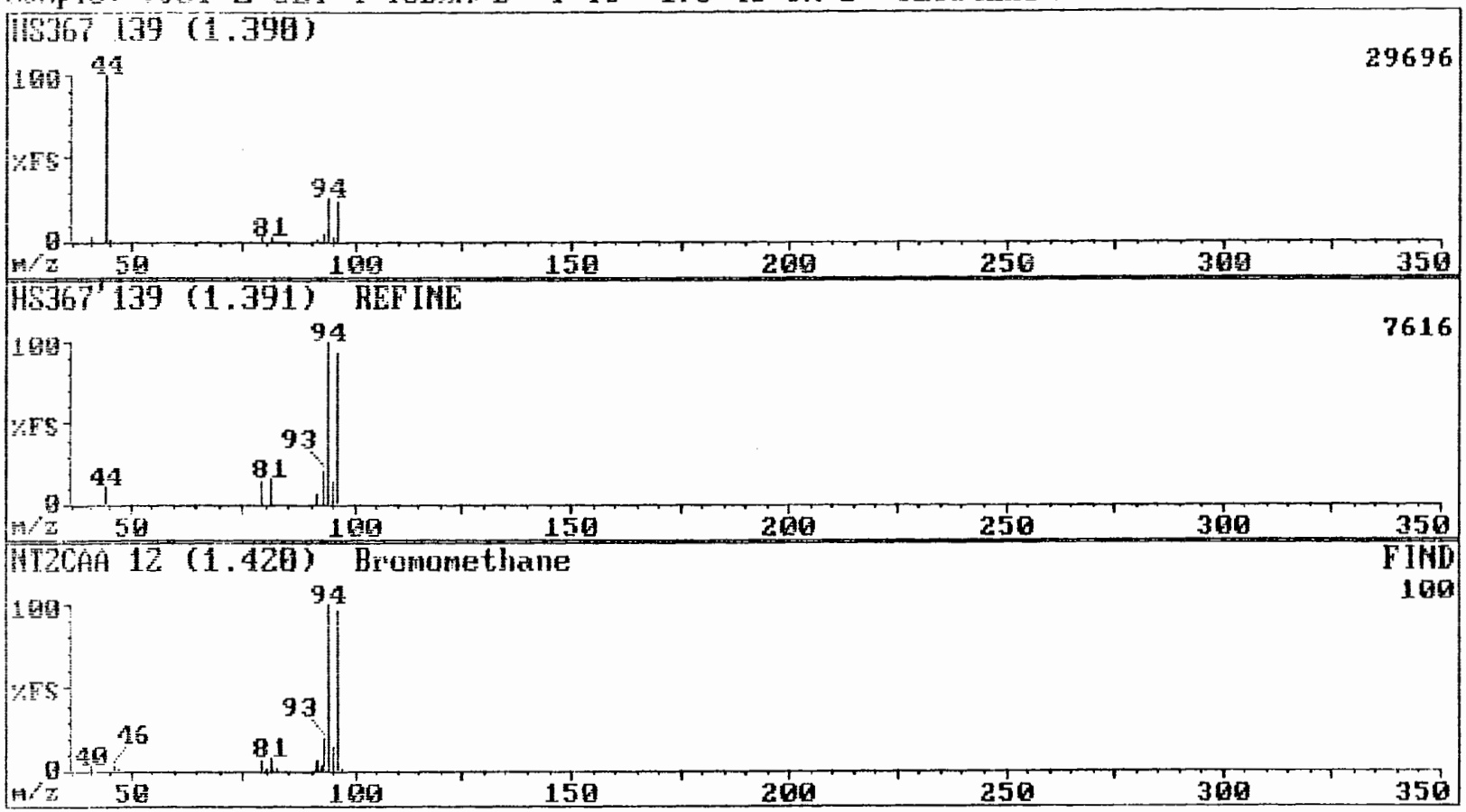
Sample: VOST-2 SET 4 TUBEA/B T/TC 173-46-9A/B TL1#42284 Instrument H



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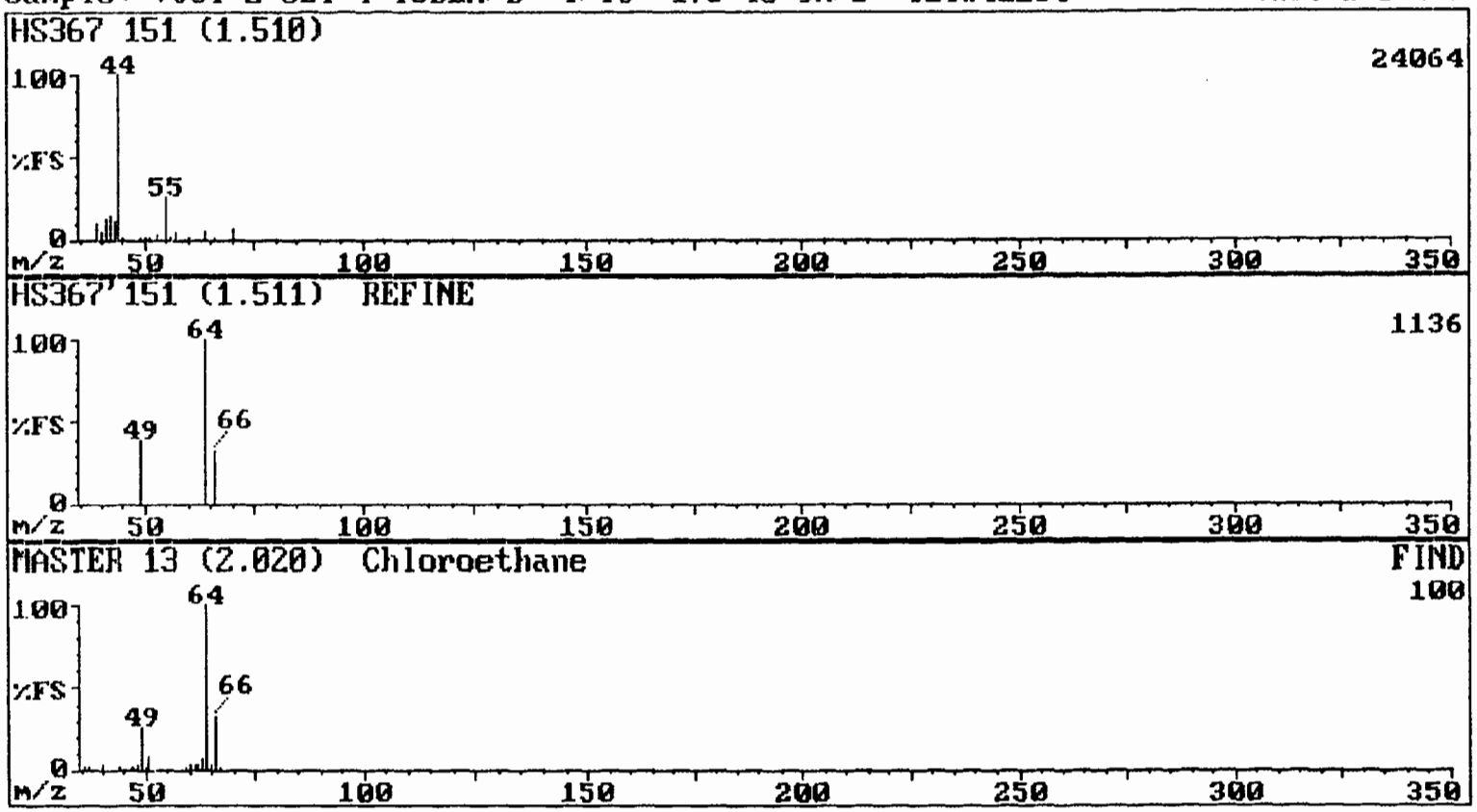
Sample: VOST-2 SET 4 TUBEA/B T/TC 173-46-9A/B TLI#42284 Instrument H



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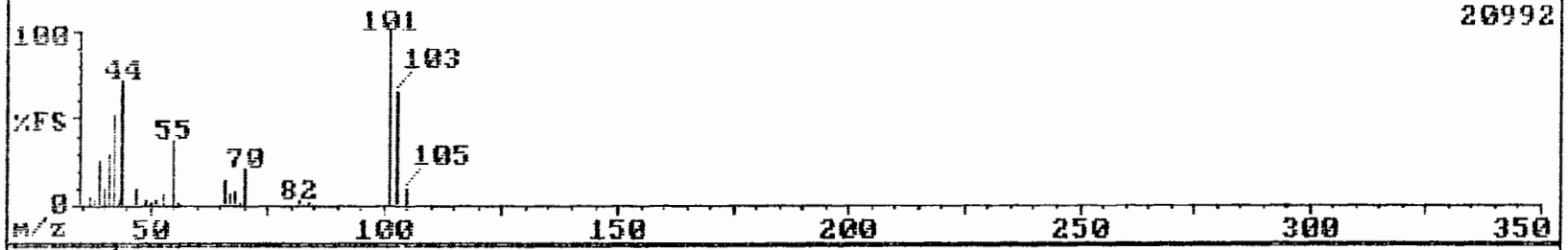
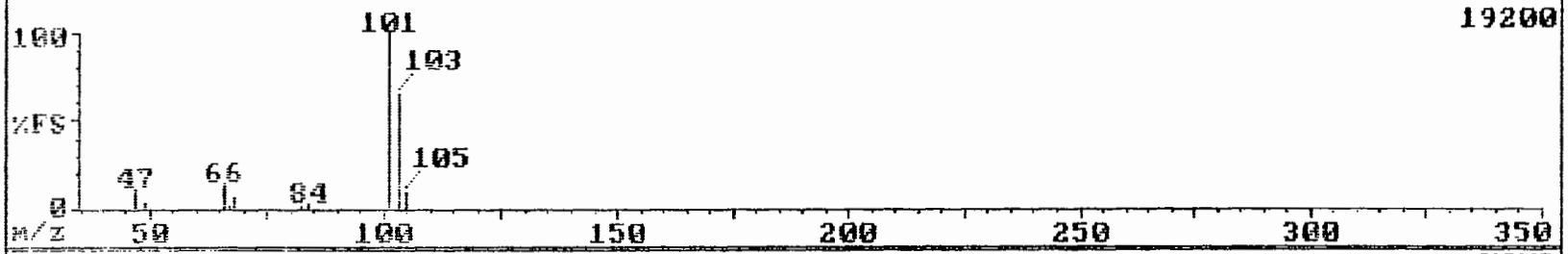
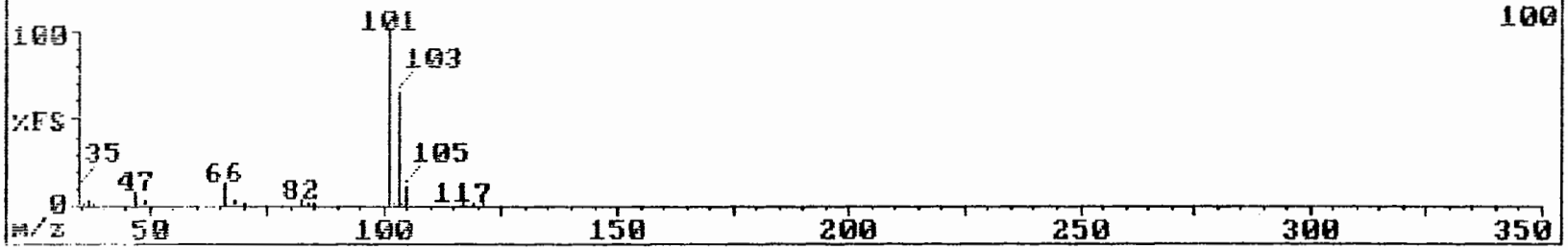
HS367 179 (1.790) 20992



HS367' 179 (1.791) REFINE 19200



NTZCAA 15 (1.840) Trichlorofluoromethane FIND 100



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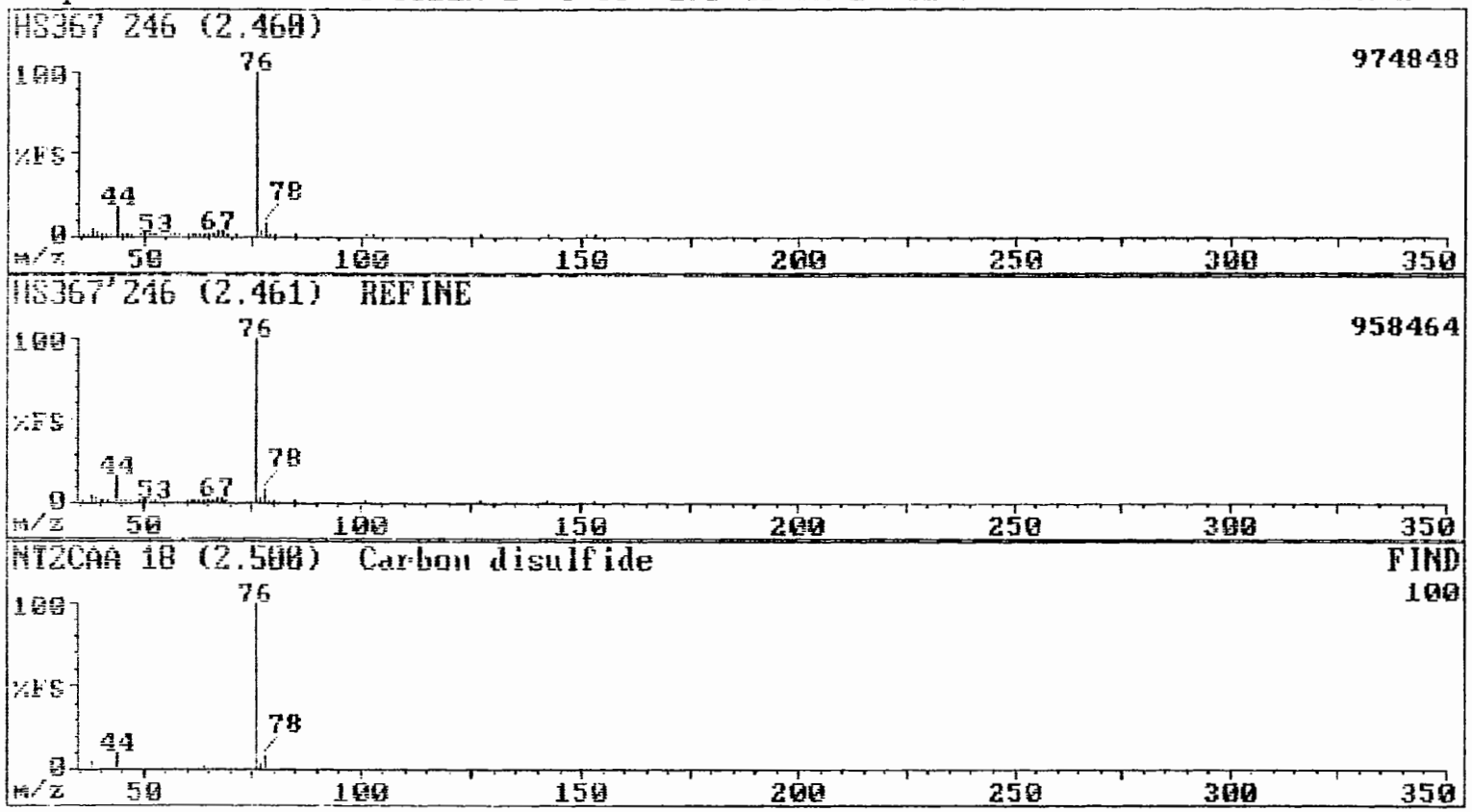

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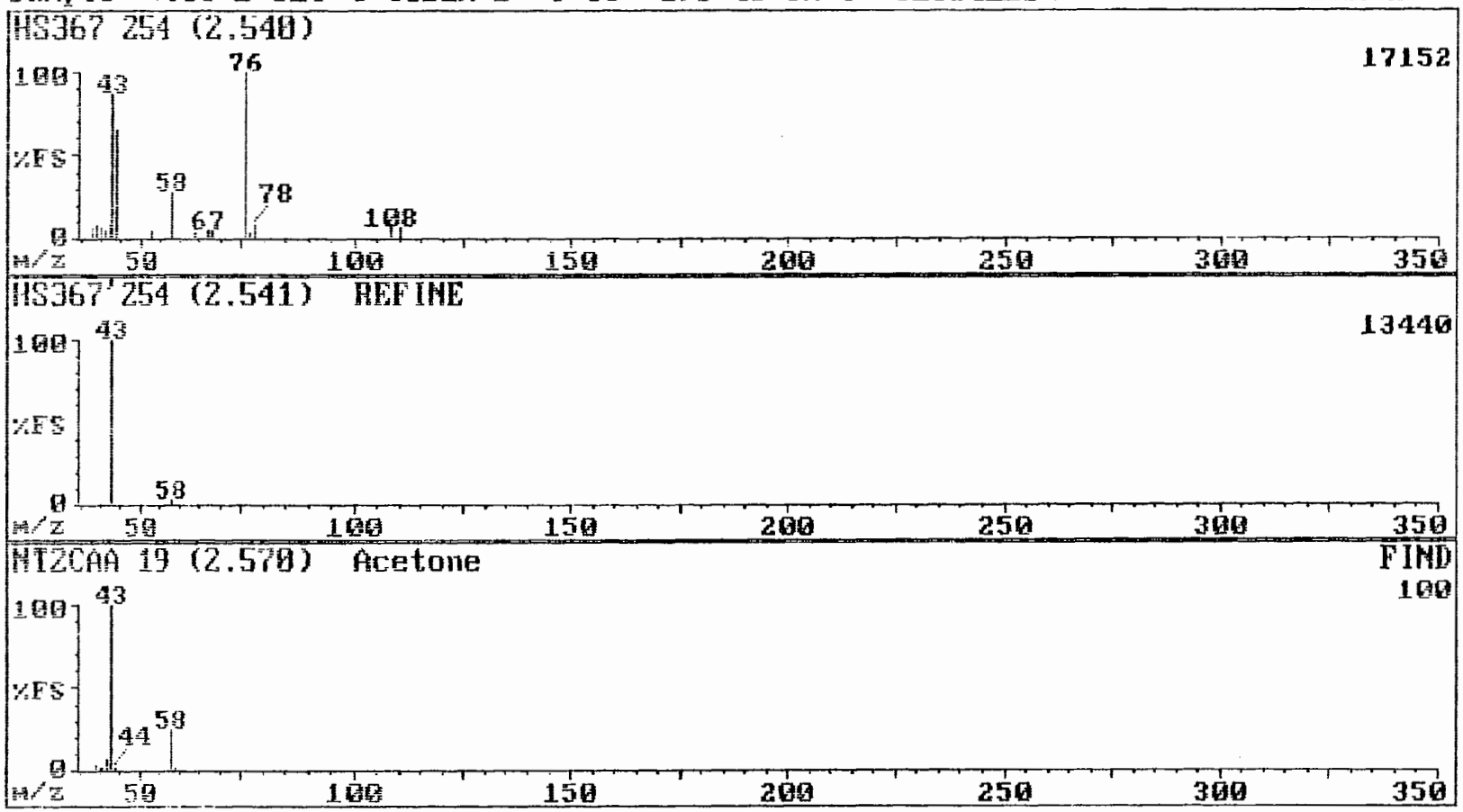

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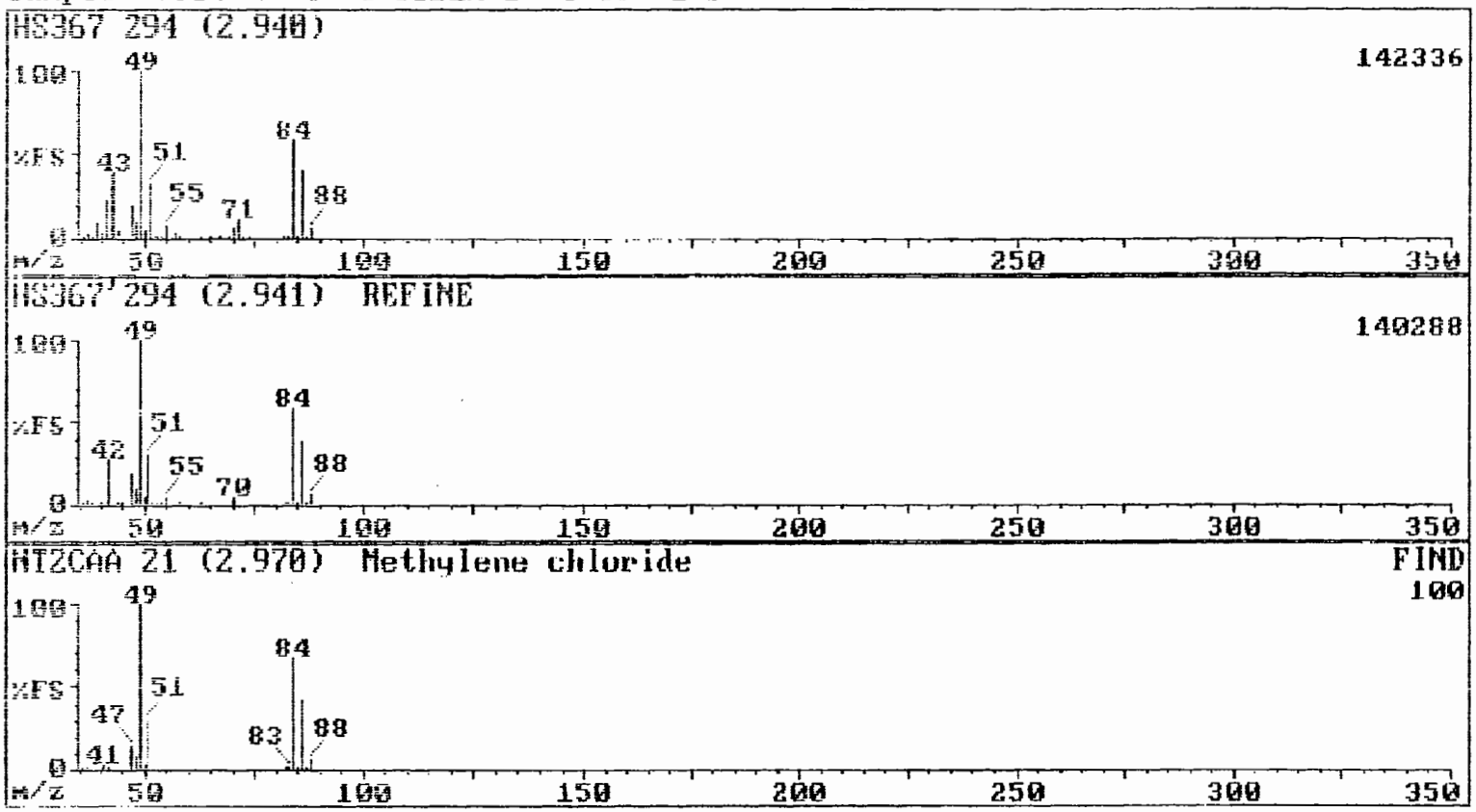

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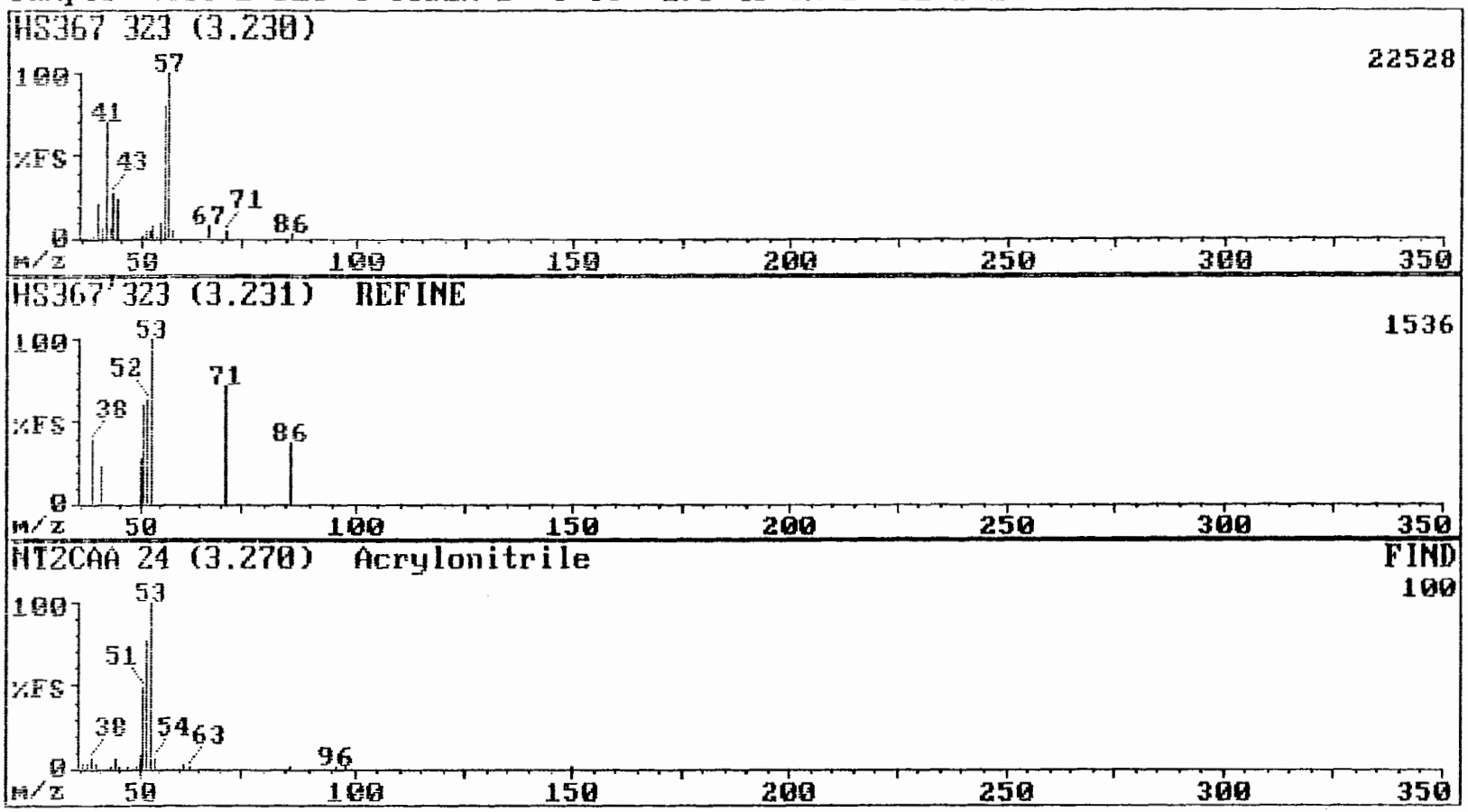

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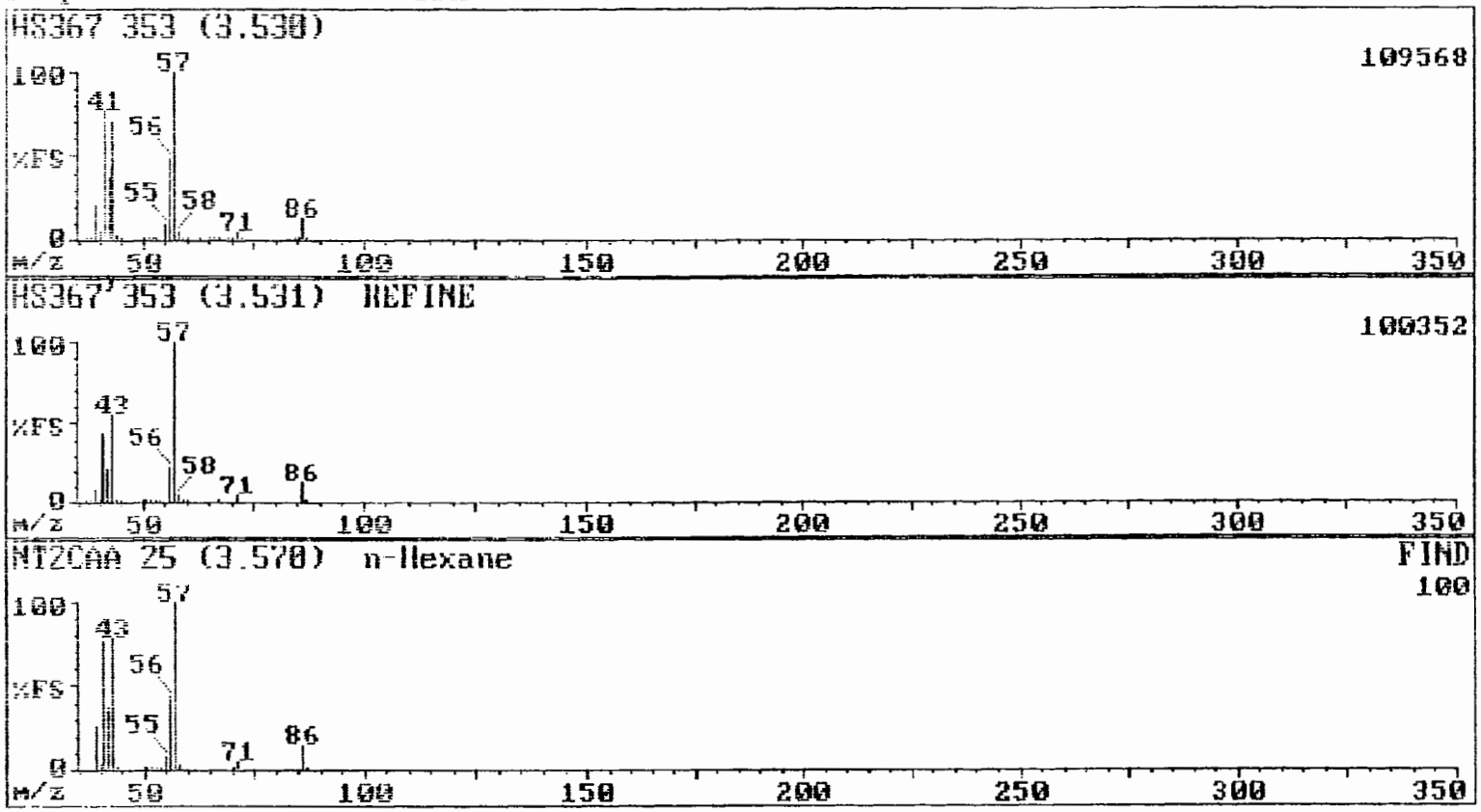

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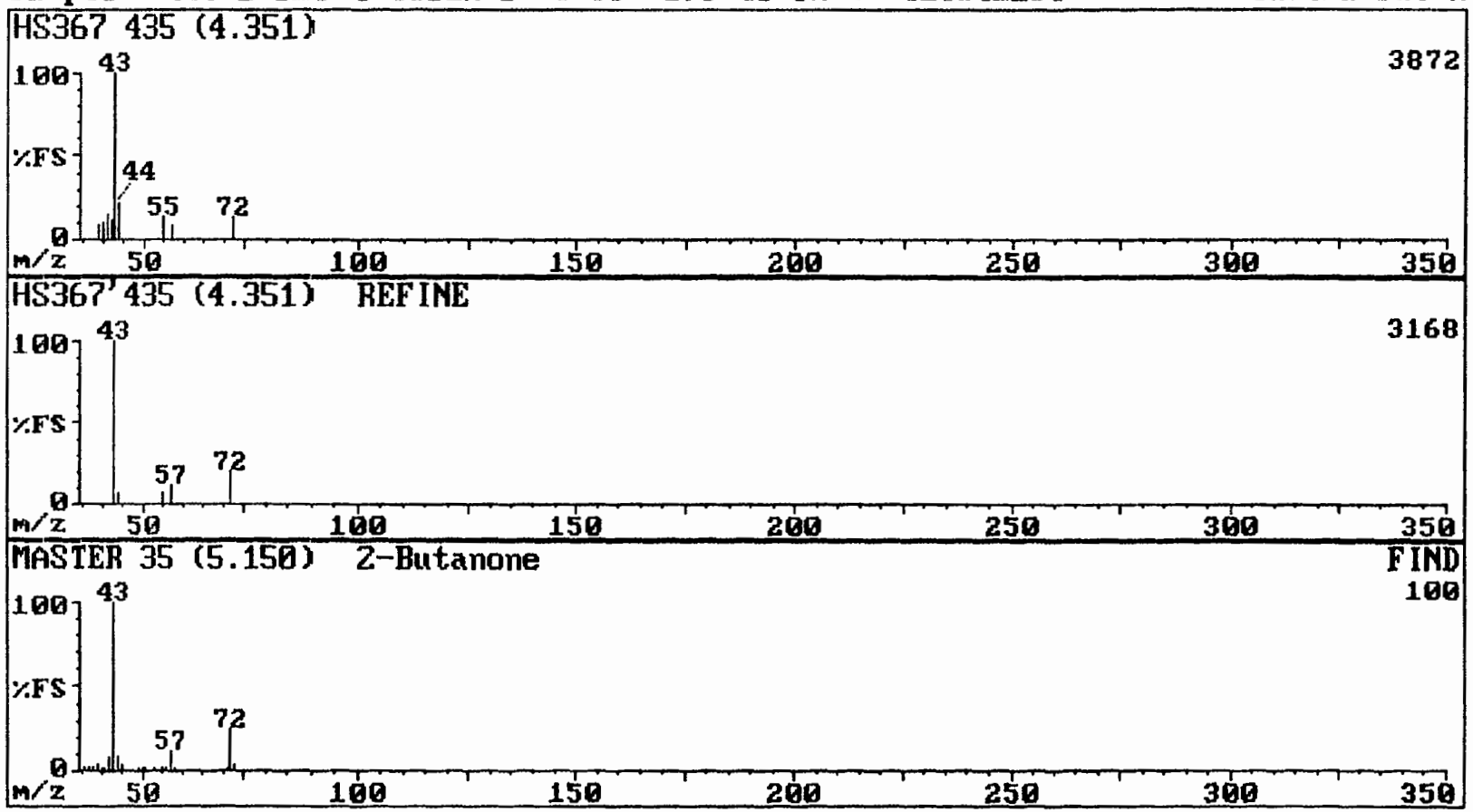

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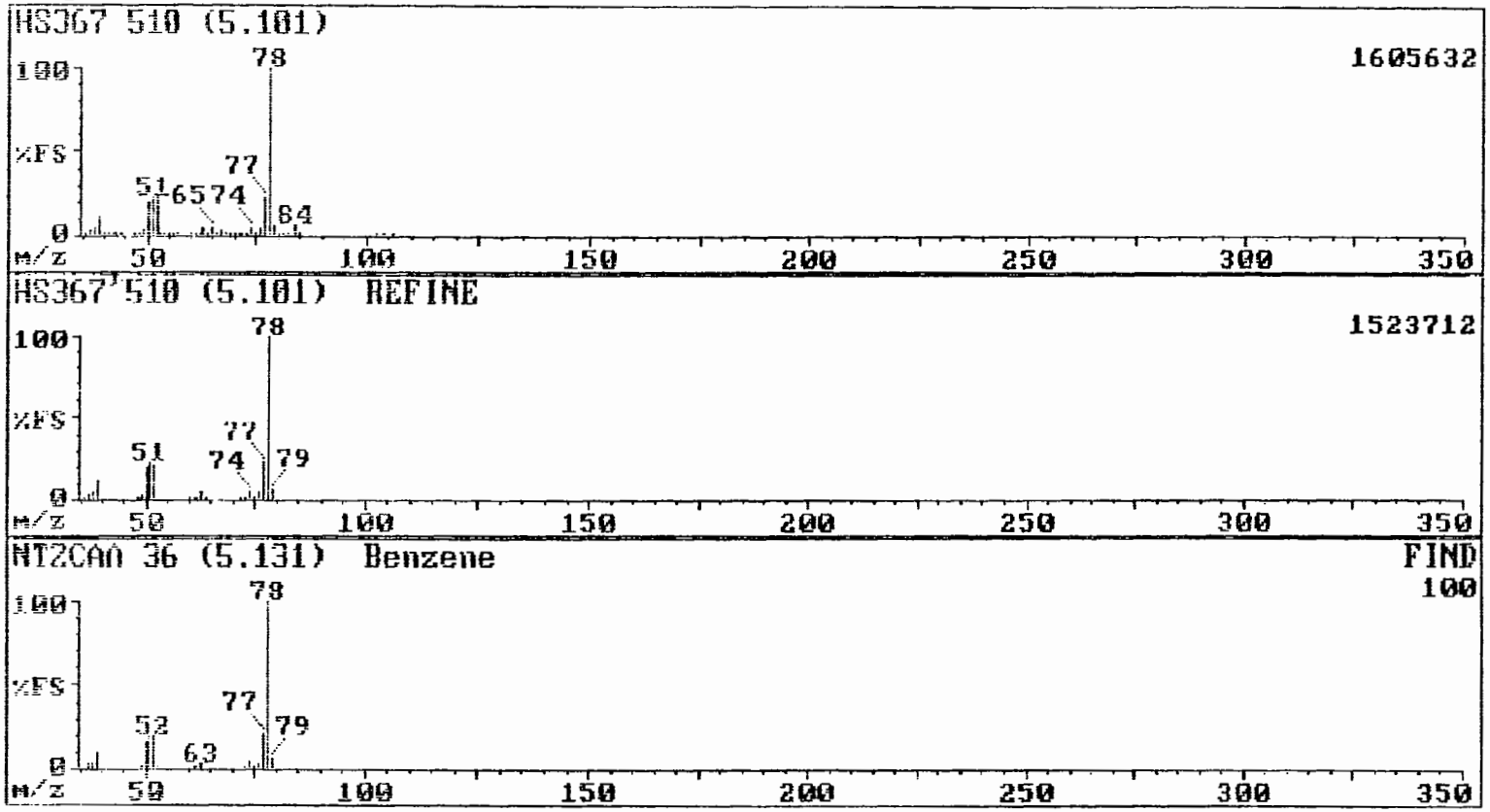

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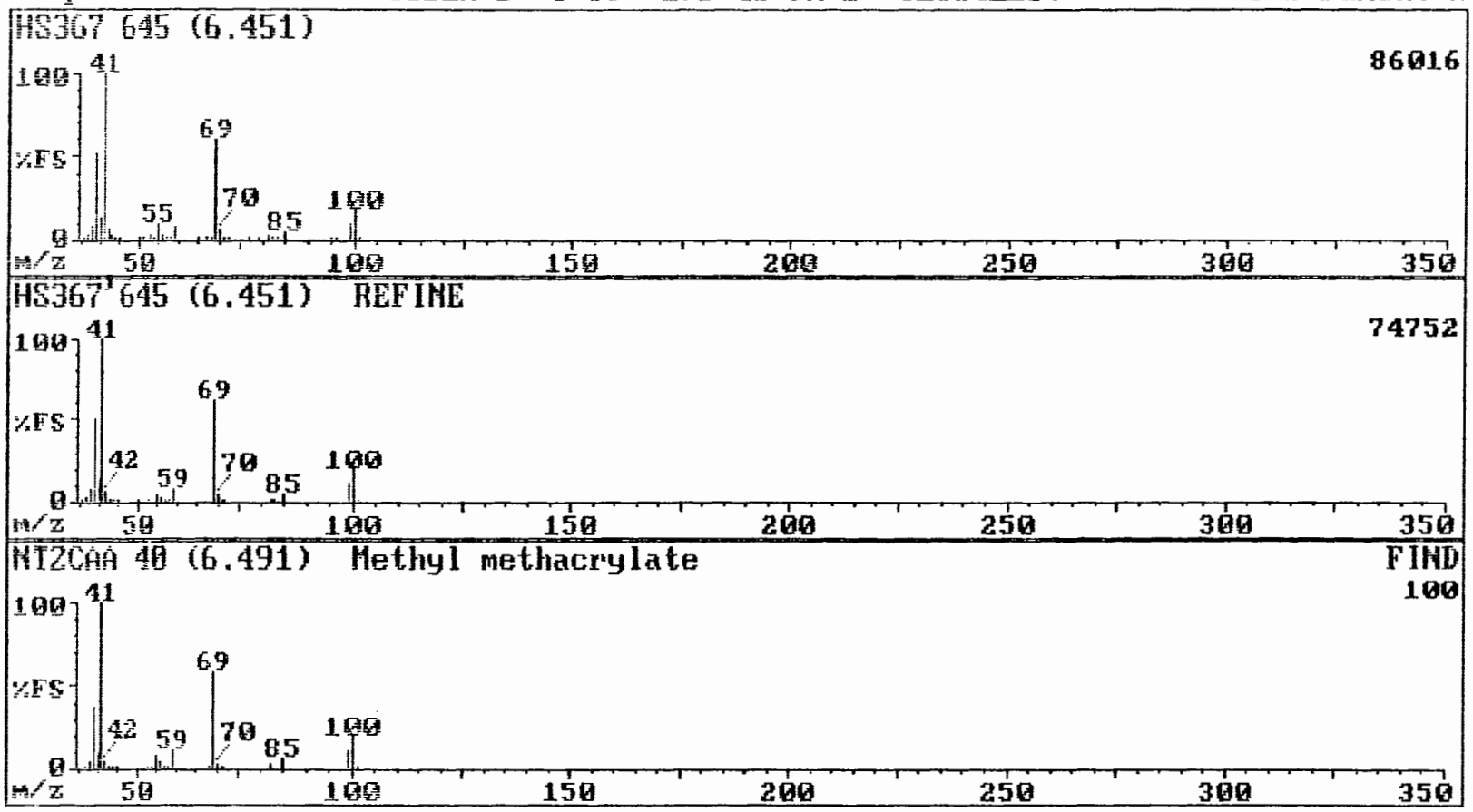

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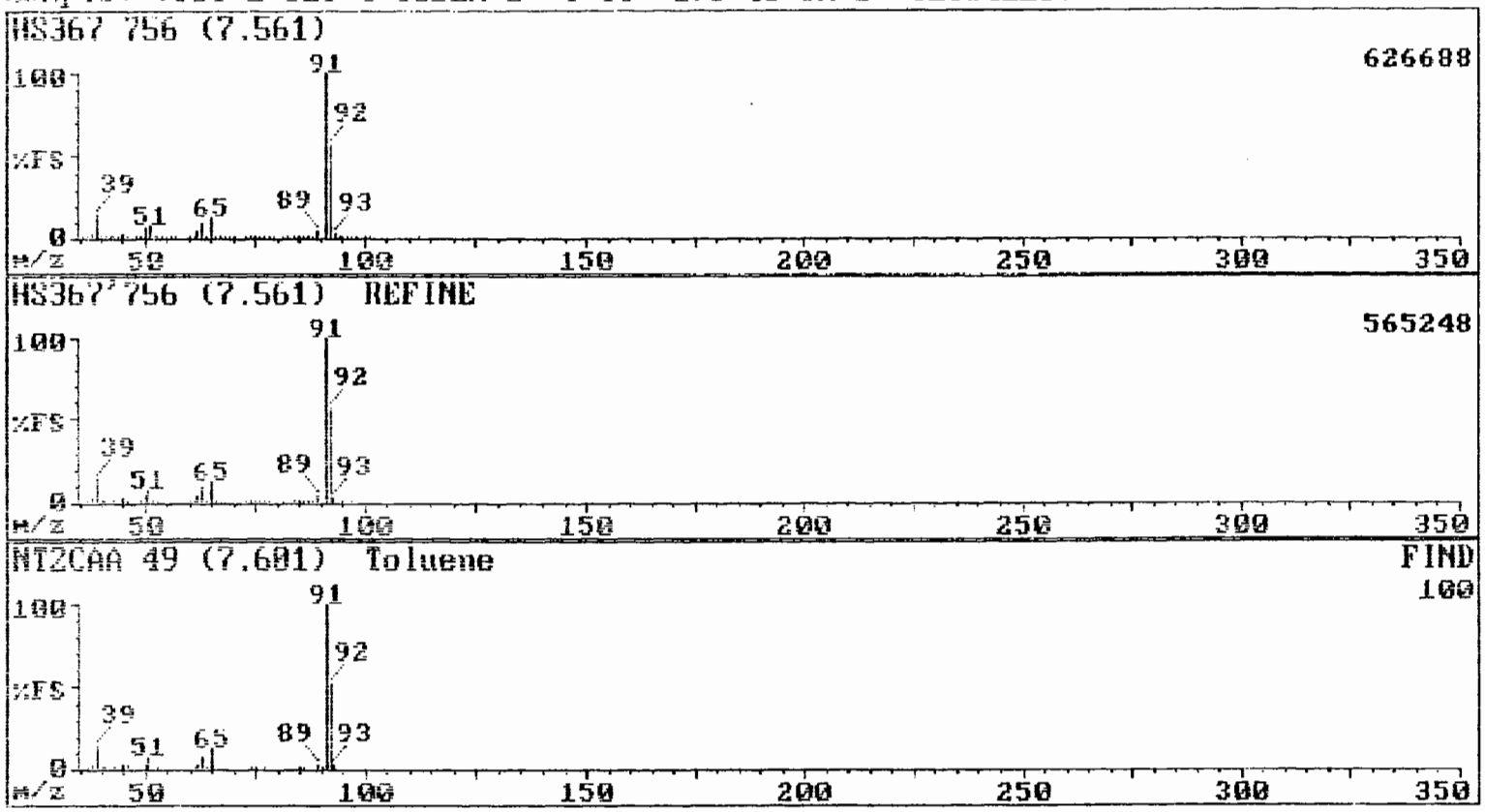

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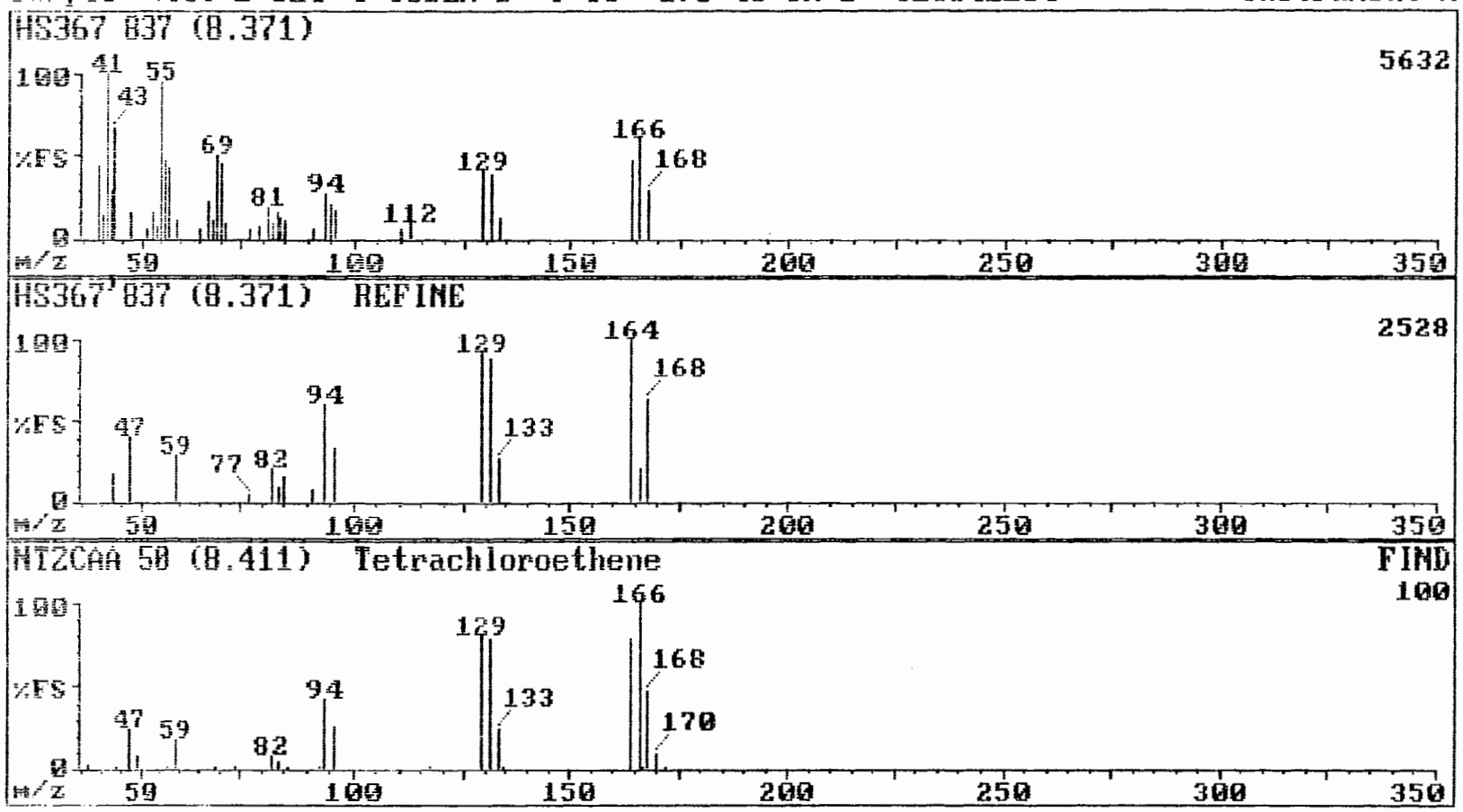

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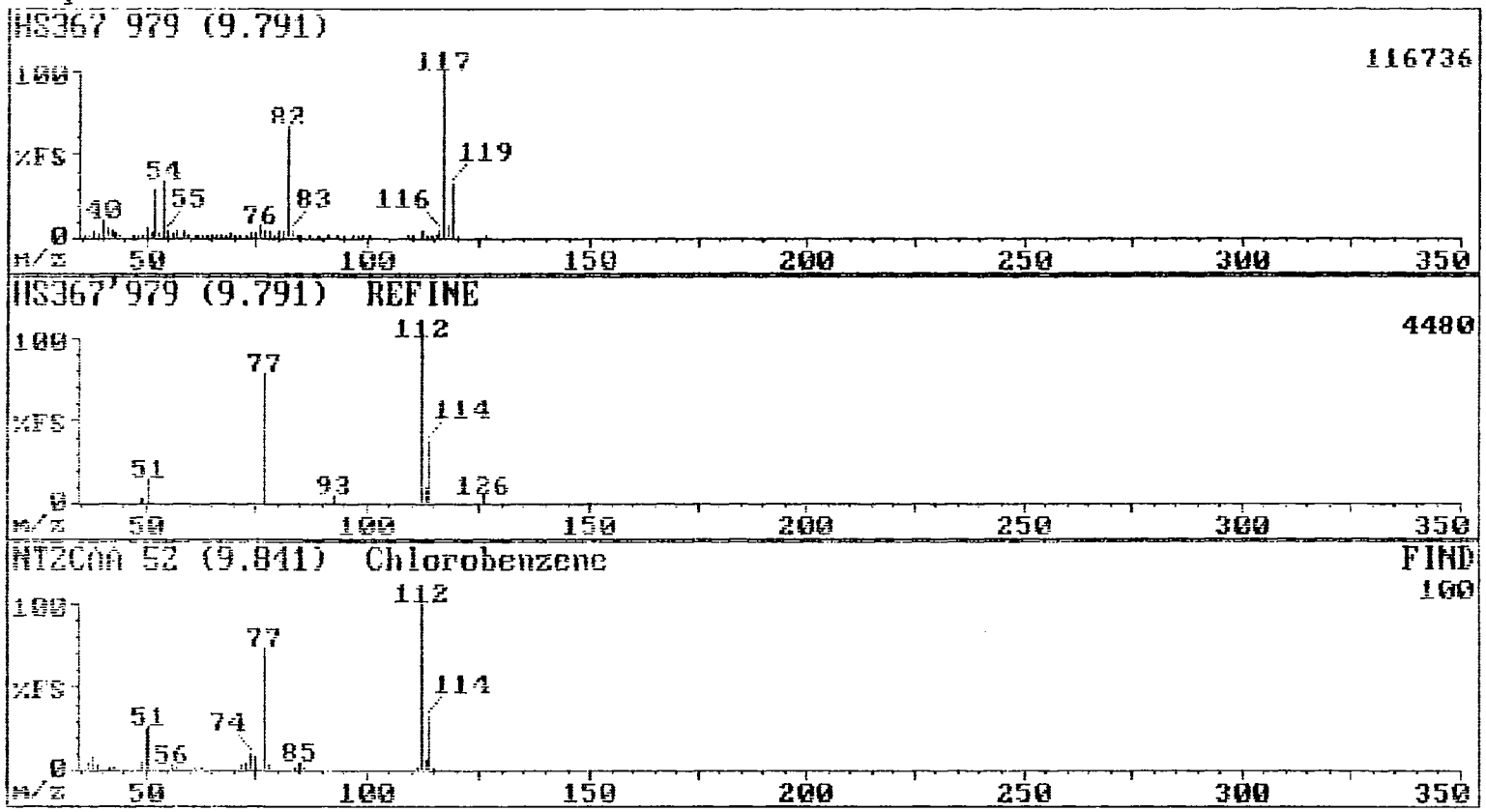
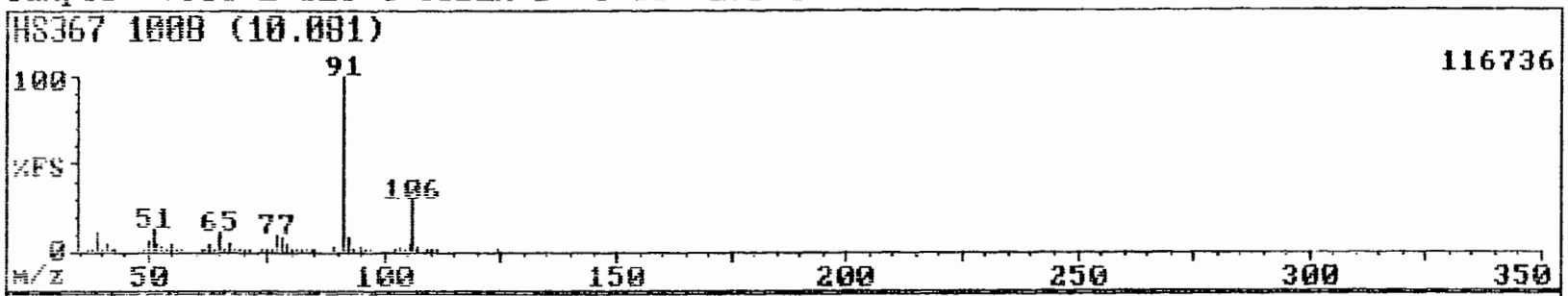
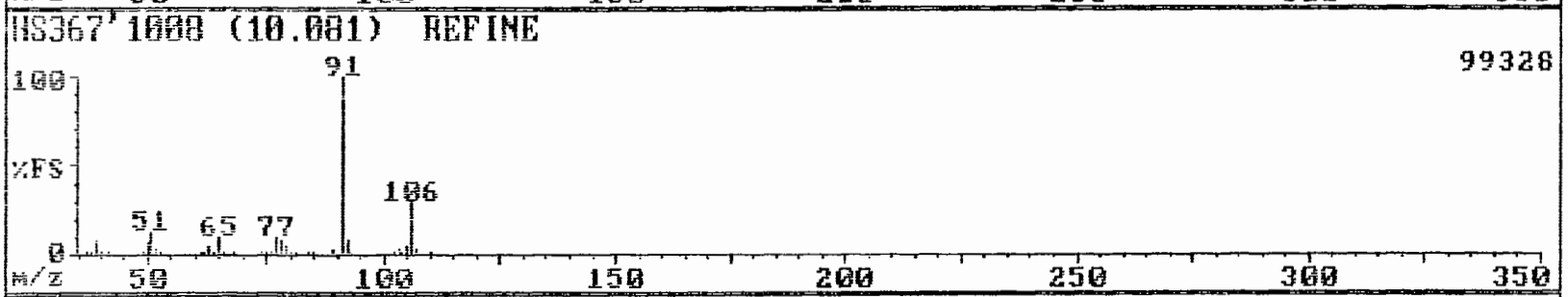
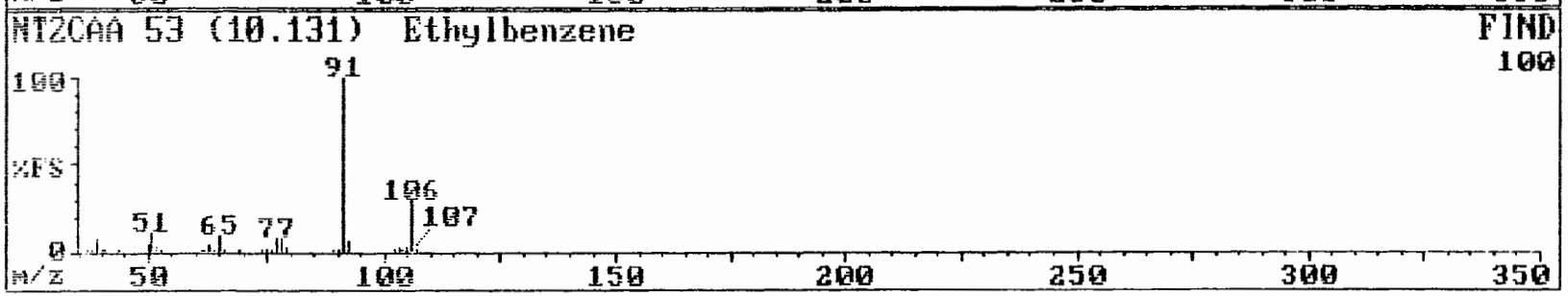


07-09-97 14:12 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 4 TUBEA/B T/TC 173-46-9A/B TLI#42284 Instrument H

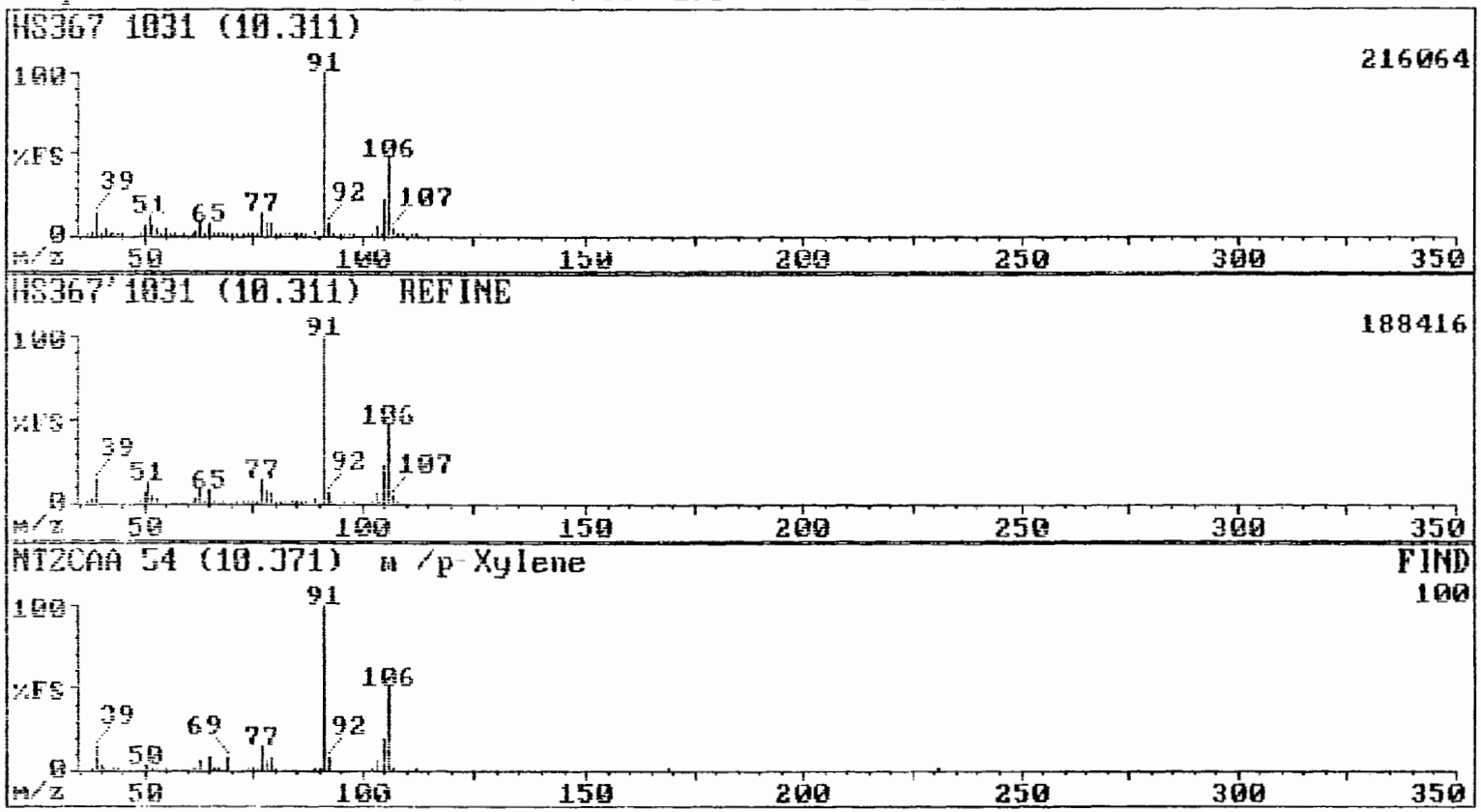






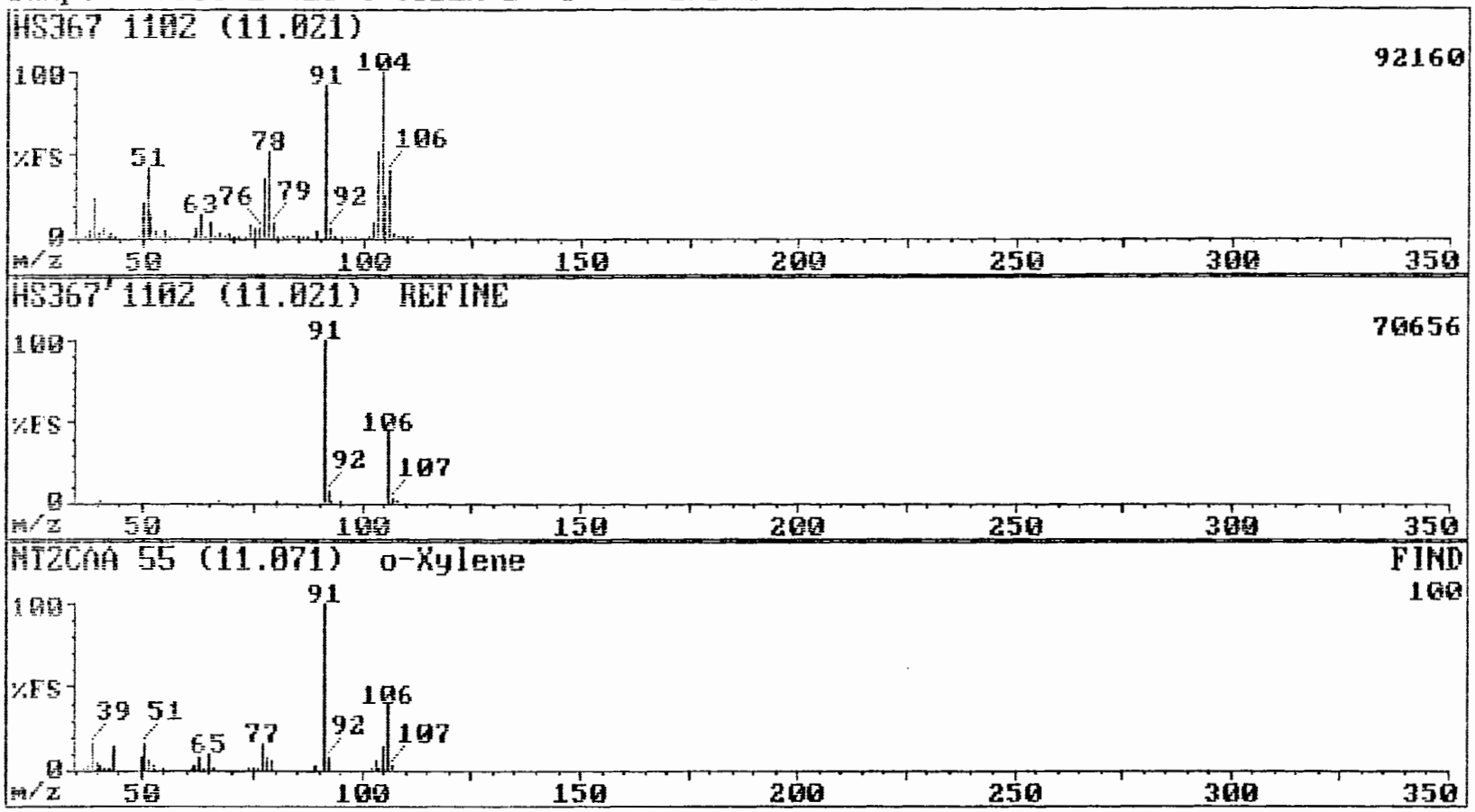
07-09-97 14:12 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 4 TUBEA/B T/TC 173-46-9A/B TLI#42284 Instrument H



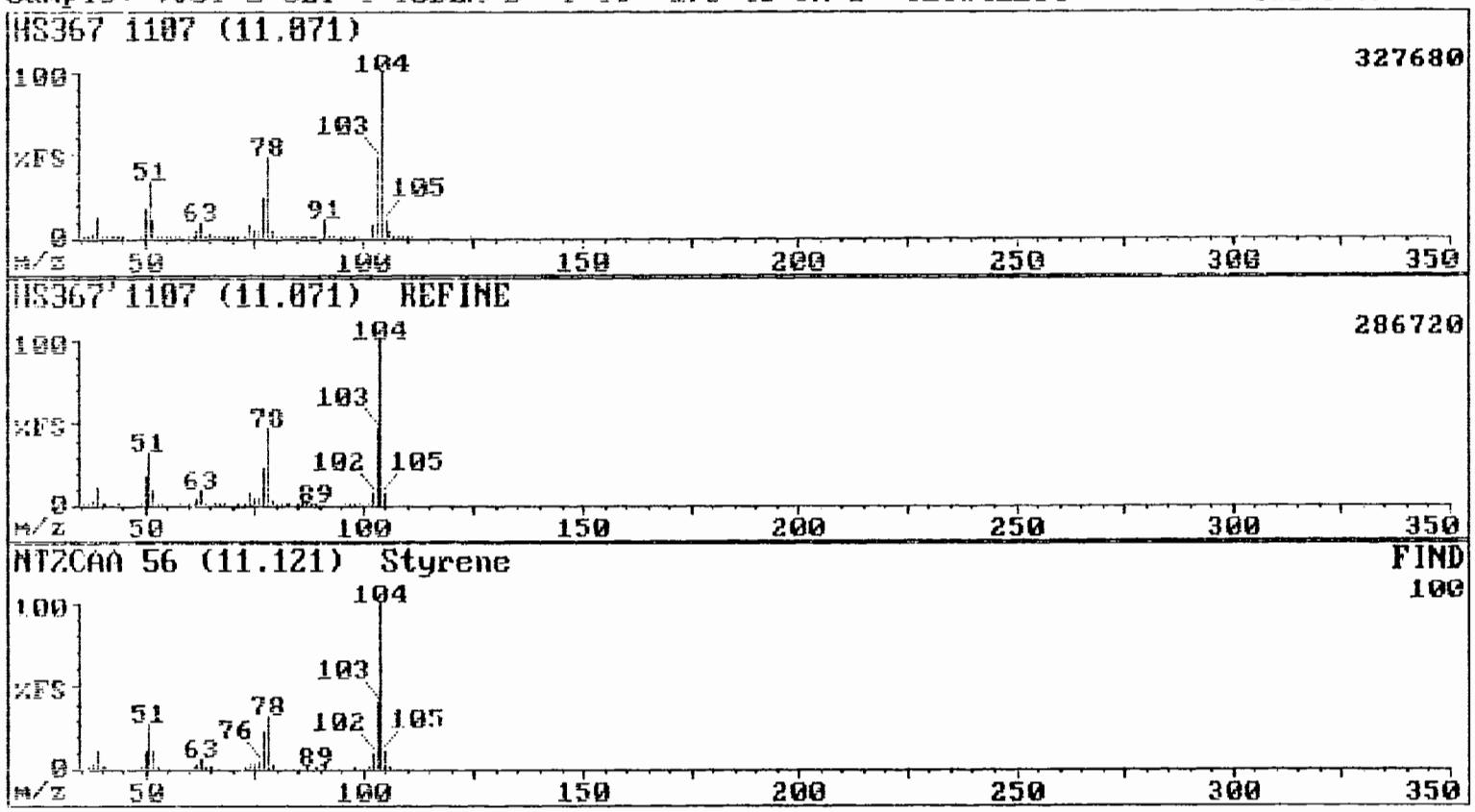
07-09-97 14:12 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 4 TUBEA/B T/TC 173-46-9A/B TLI#42284 Instrument H



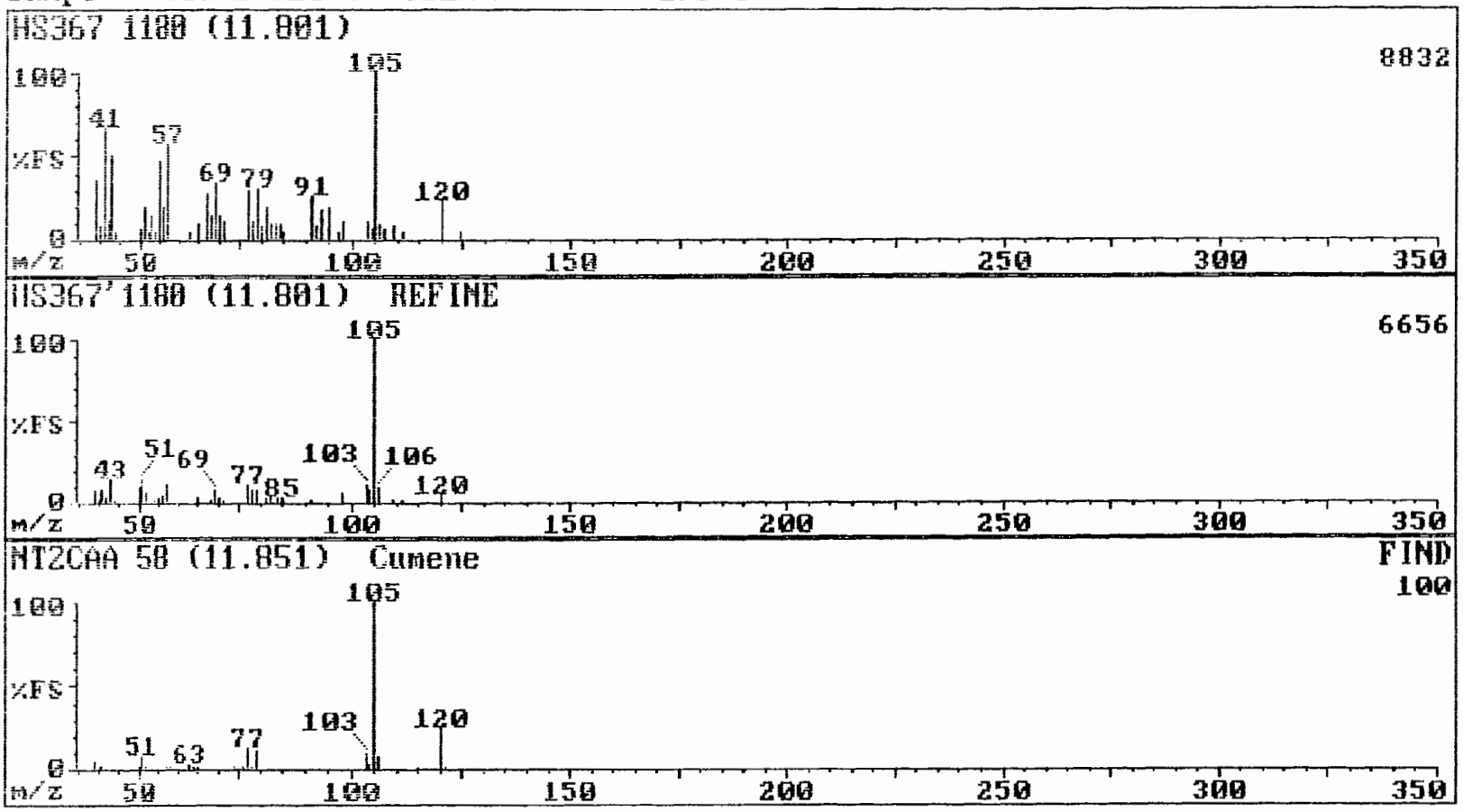
07-09-97 14:12 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 4 TUBEA/B T/TC 173-46-9A/B TLI#42284 Instrument H

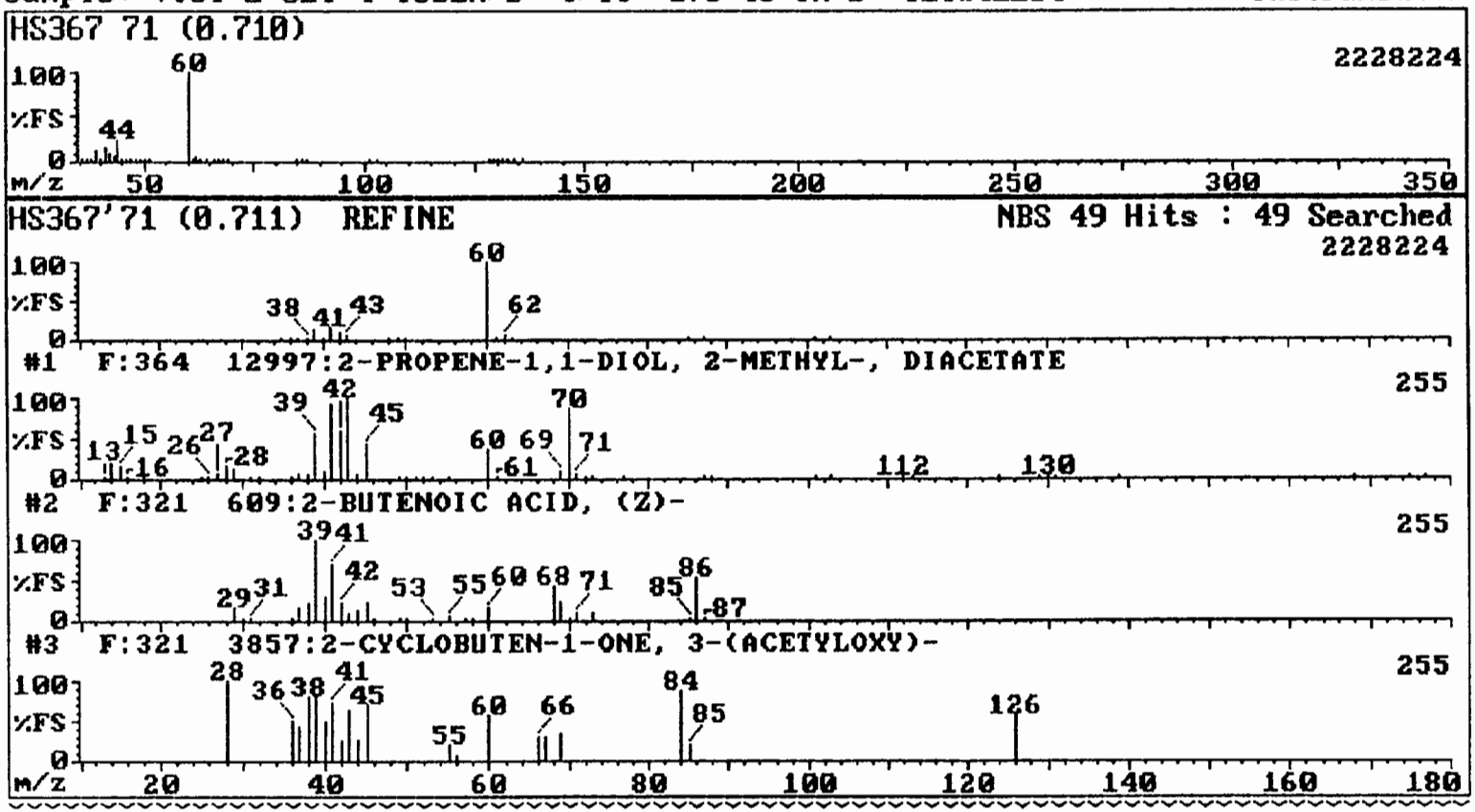


07-09-97 14:12 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 4 TUBEA/B T/TC 173-46-9A/B TLI#42284 Instrument H



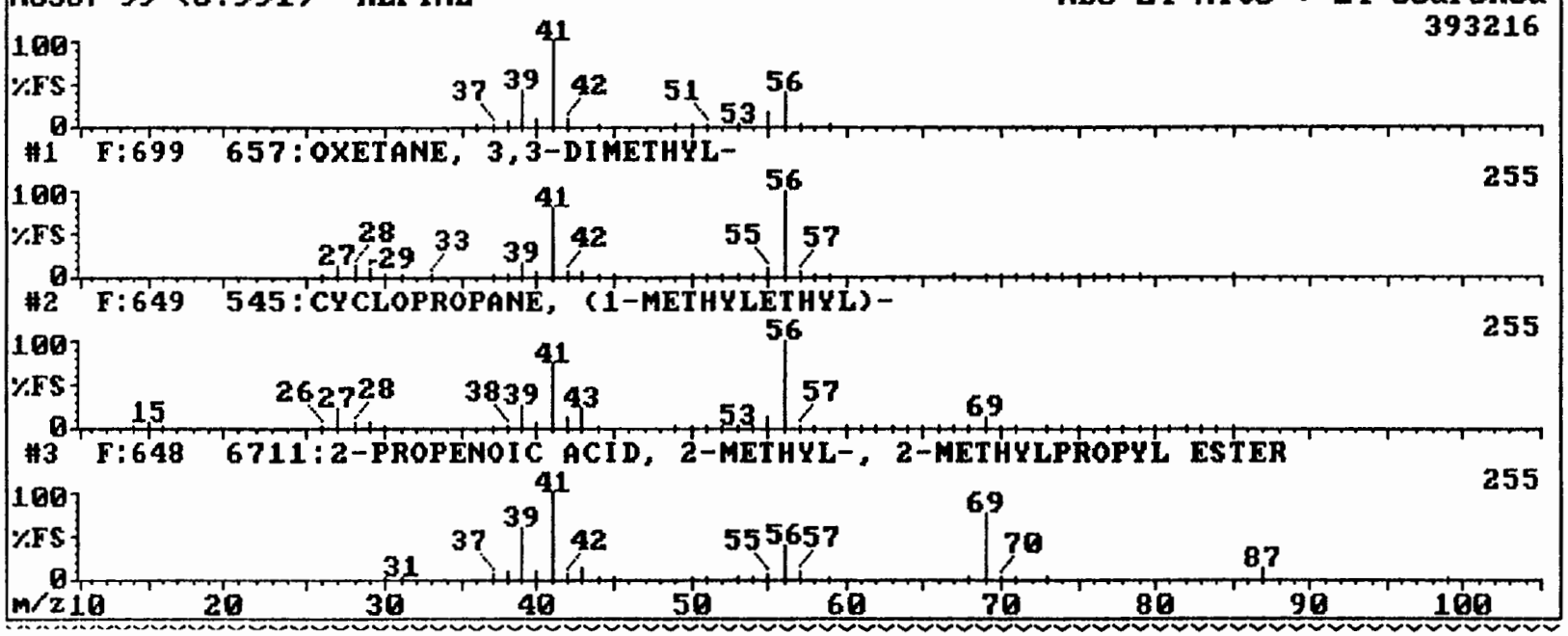
09-Jul-97 14:12 Triangle Laboratories of RTP, Inc. (919) 544-5729
Sample: VOST-2 SET 4 TUBEA/B T/TC 173-46-9A/B TLI#42284 Instrument H



09-Jul-97 14:12 Triangle Laboratories of RTP, Inc. (919) 544-5729
Sample: VOST-2 SET 4 TUBEA/B T/TC 173-46-9A/B TLI#42284 Instrument H

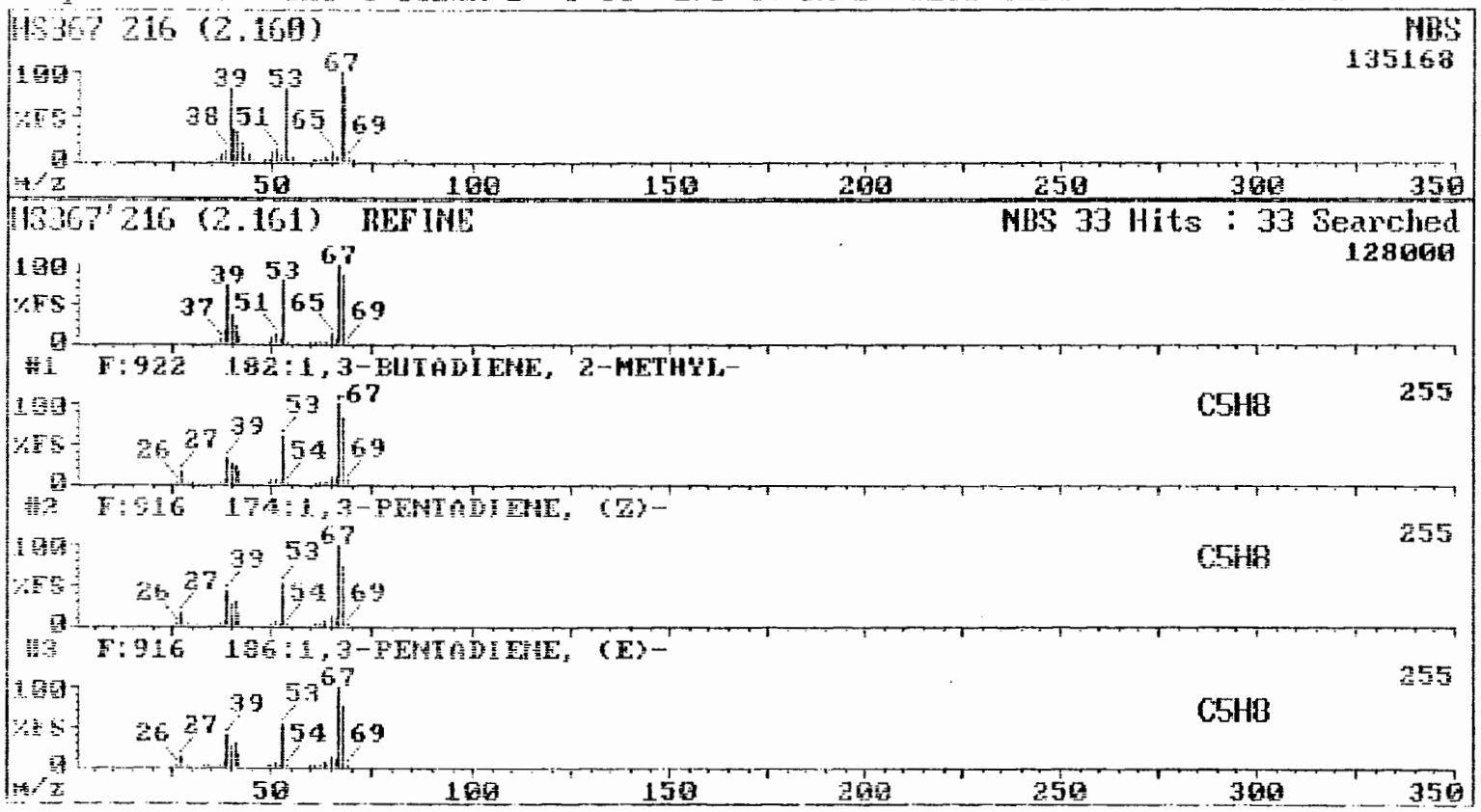
HS367 99 (0.990) 401408

HS367'99 (0.991) REFINE NBS 24 Hits : 24 Searched



07/09/97 14:12 Triangle Laboratories of RTP, Inc. (919) 544-5729

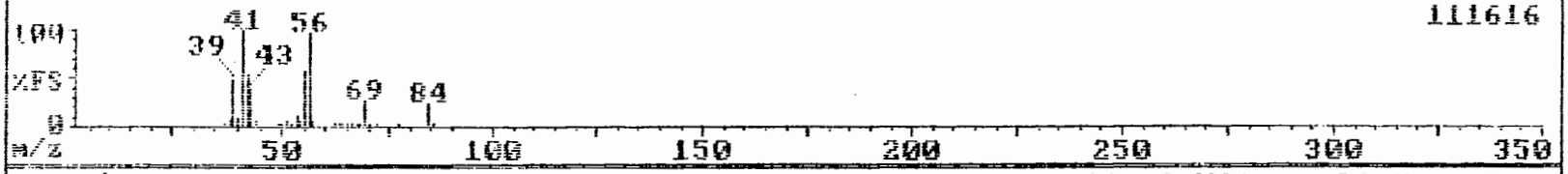
Sample: VOST-2 SET 4 TUBEA/B T/TC 173-46-90/B TL1#42284 Instrument: H



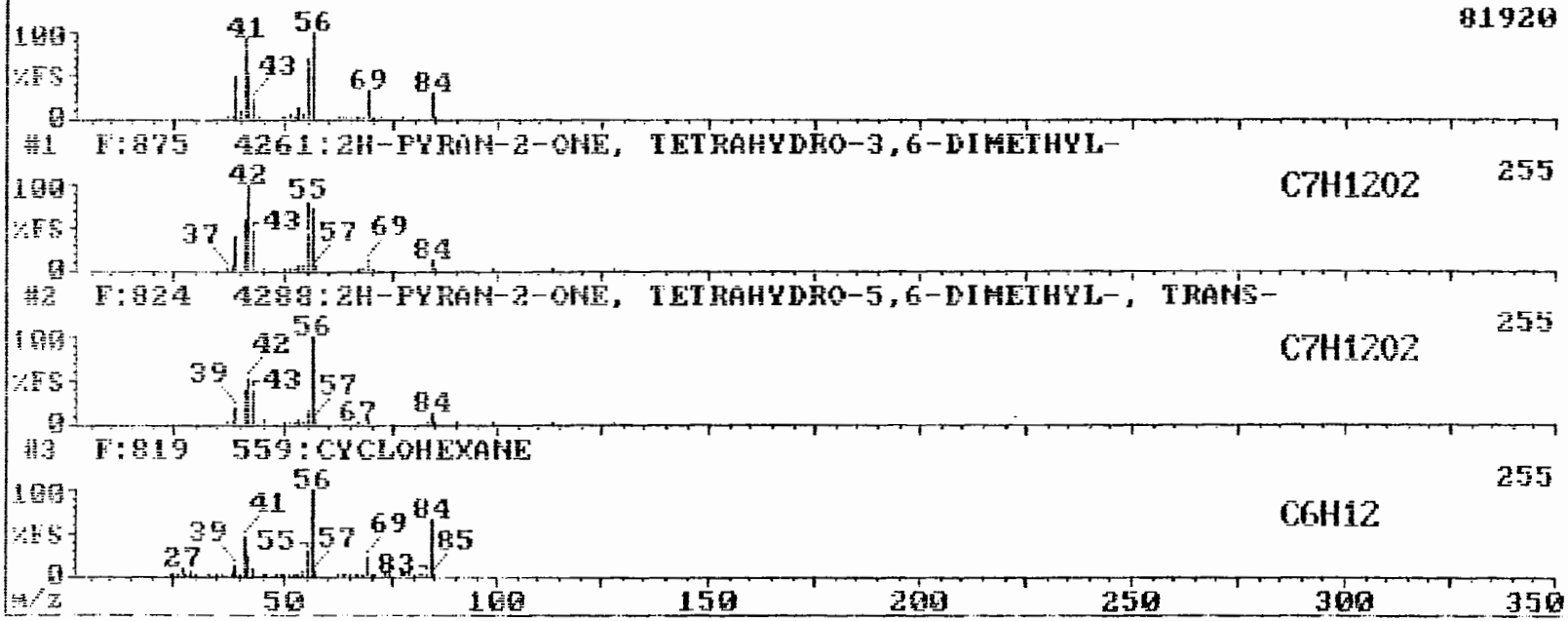
07/09/97 14:12 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 4 TUBEA/B T/TC 173-46-9A/B TLI#42284 Instrument: H

HS367 343 (3.430) NBS 111616

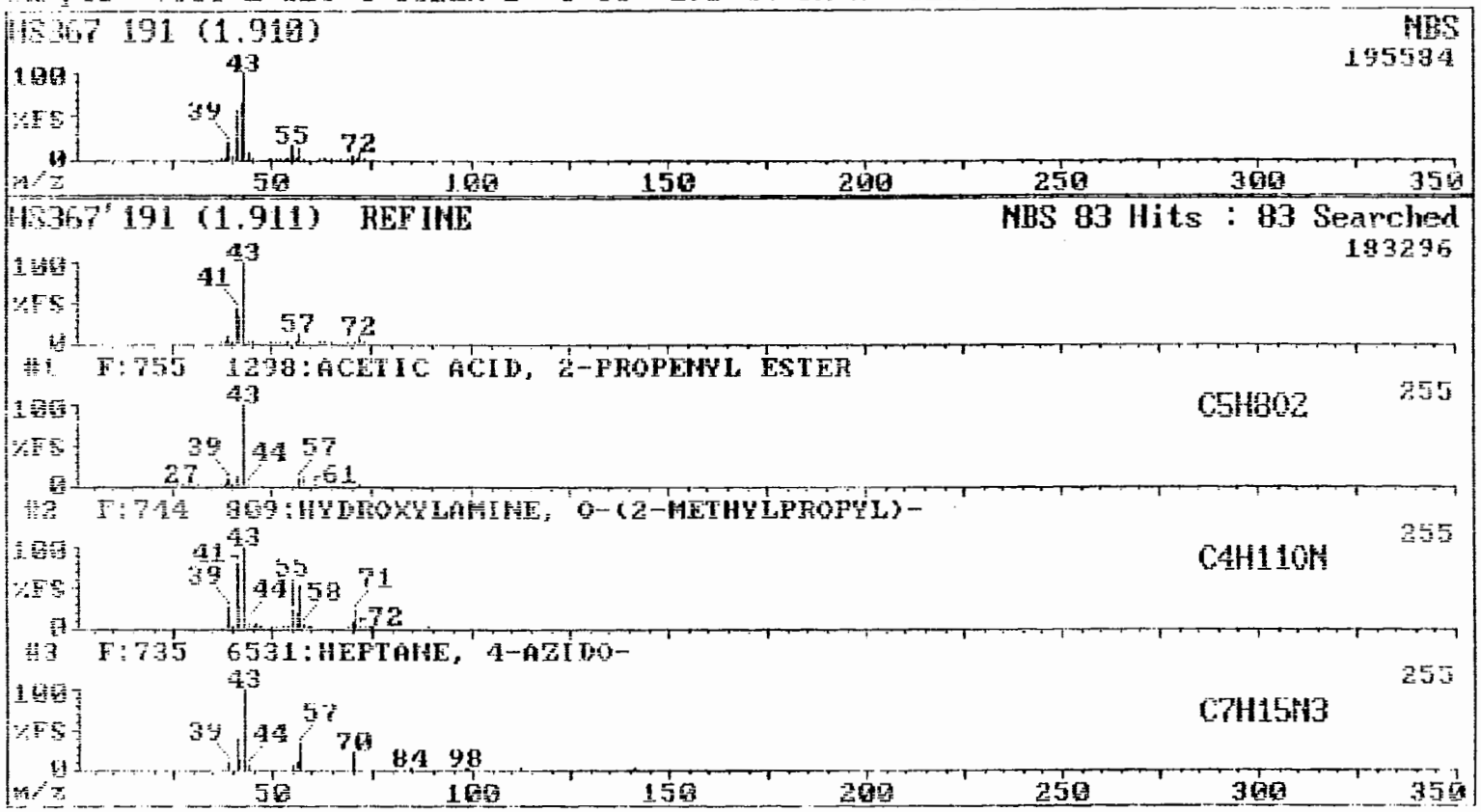


HS367'343 (3.431) REFINE NBS 61 Hits : 61 Searched 81920



07/07/97 14:12 Triangle Laboratories of RTP, Inc. (919) 544-5729

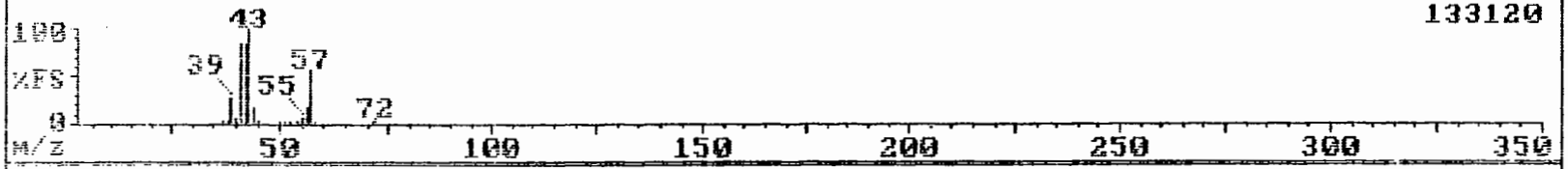
Sample: VOST-2 SET 4 TUBEA/B T/TC 173-46-9A/B TLI#42284 Instrument: H



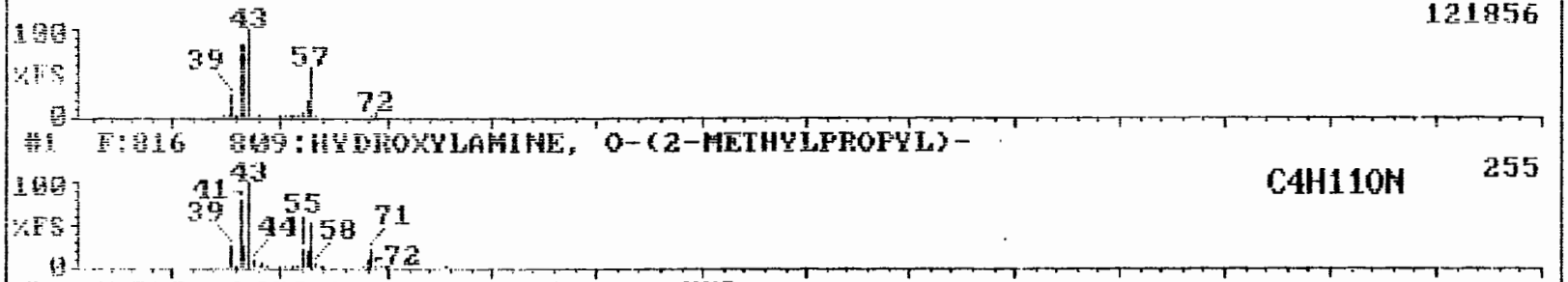
07/09/97 14:12 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 4 TUBEA/B T/TC 173-46-9A/B TLI#42284 Instrument: H

HS367 160 (1.600) NBS 133120

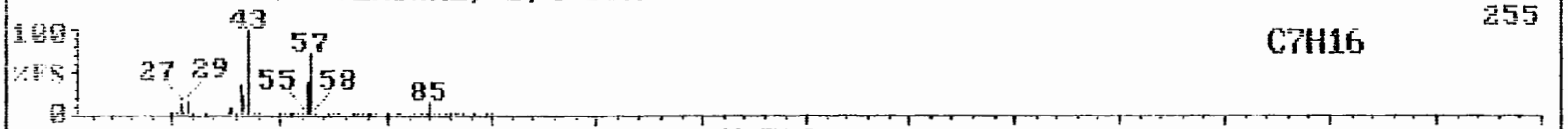


HS367 160 (1.601) REFINE NBS 242 Hits : 242 Searched 121856

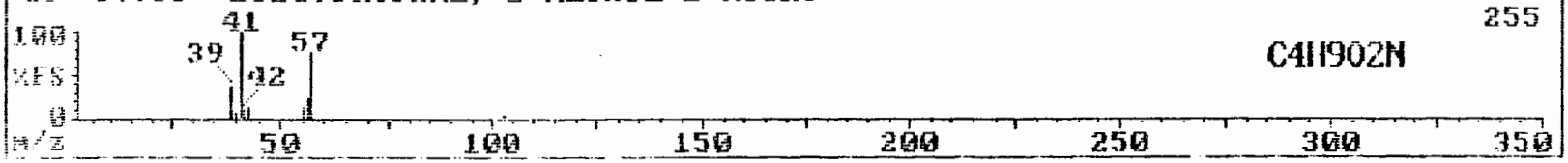


#1 F:816 809:HYDROXYLAMINE, O-(2-METHYLPROPYL)- C4H11ON 255

#2 F:738 1429:PENTANE, 2,4-DIMETHYL- C7H16 255

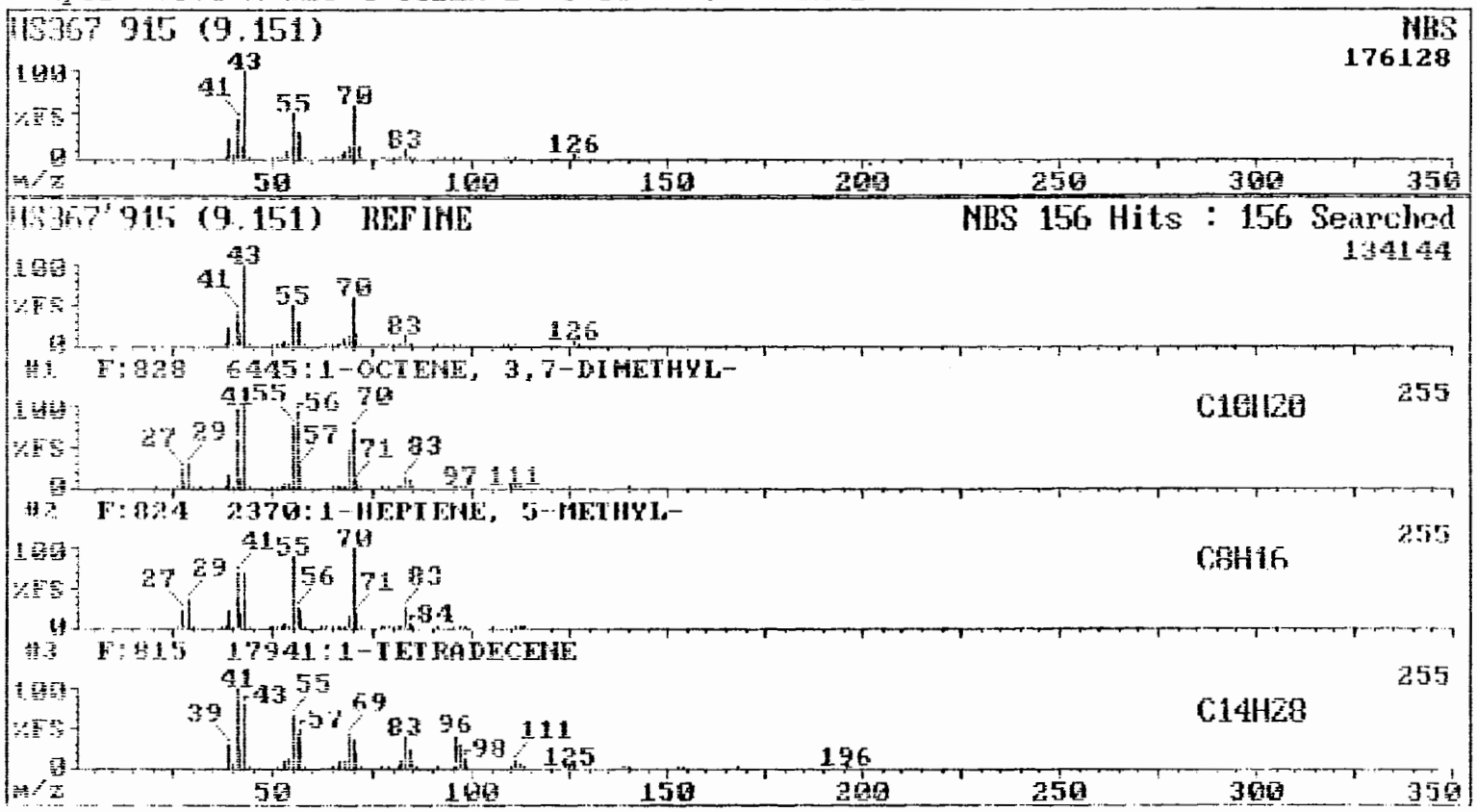


#3 F:738 1620:PROPANE, 2-METHYL-1-NITRO- C4H9O2N 255



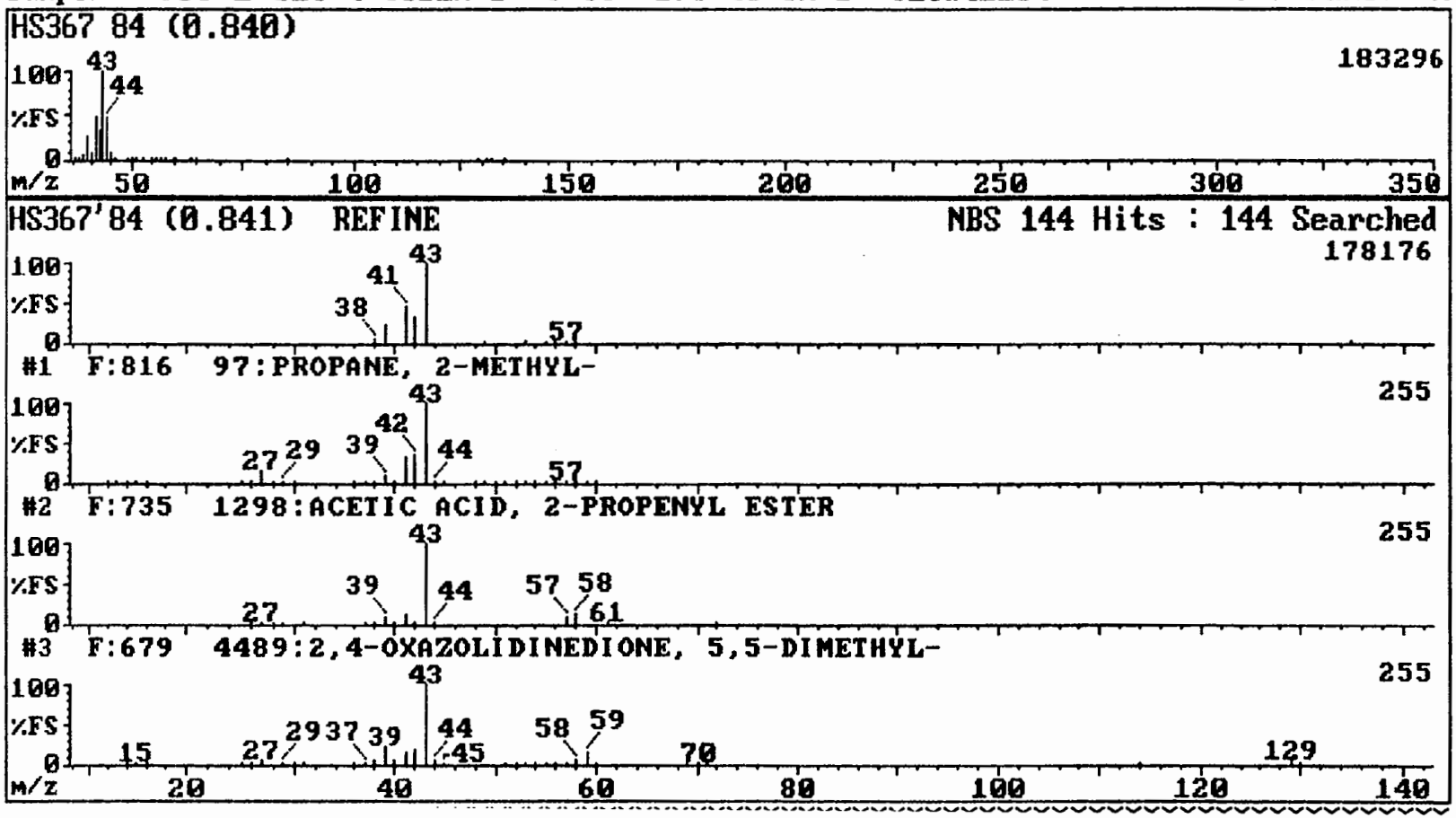
07/09/97 14:12 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 4 TUBEA/B T/TC 173-46-9A/B TLI#42204 Instrument: H



09-Jul-97 14:12 Triangle Laboratories of RTP, Inc. (919) 544-5729

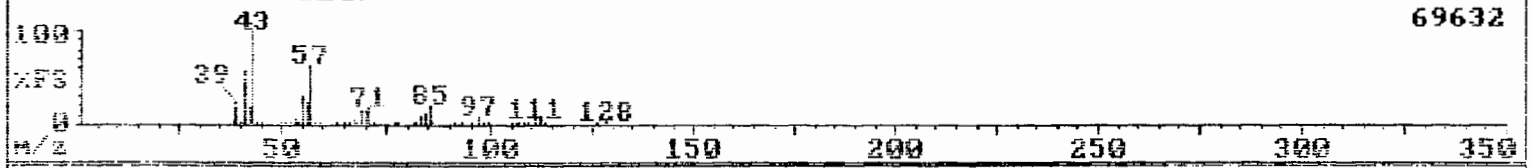
Sample: VOST-2 SET 4 TUBEA/B T/TC 173-46-9A/B TLI#42284 Instrument H



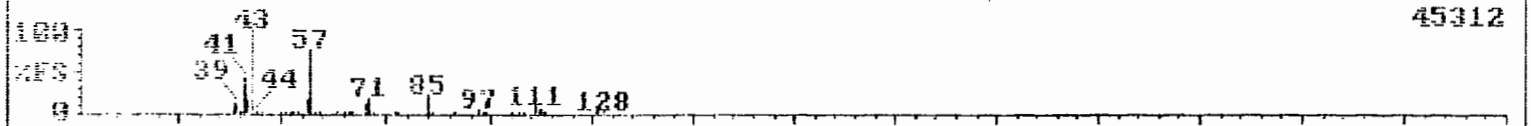
07/09/97 14:12 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 4 TUBE0/B T/TC 173-46-90/B TL1#42284 Instrument: H

HS367 1062 (10.621) NBS 69632



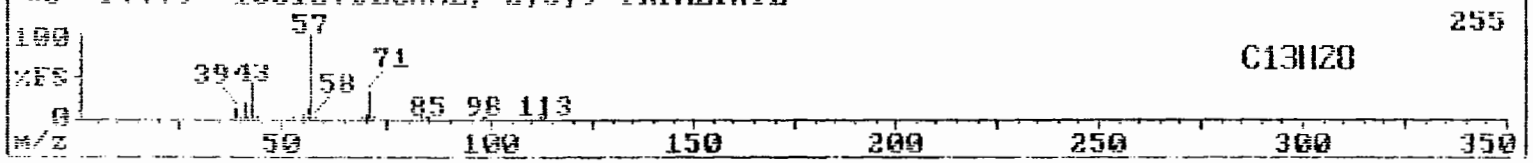
HS367 1062 (10.621) REFINE NBS 193 Hits : 193 Searched 45312



#1 F:789 15627:DECANE, 2,4,6-TRIMETHYL- C13H28 255

#2 F:782 15625:DECANE, 2,6,8-TRIMETHYL- C13H28 255

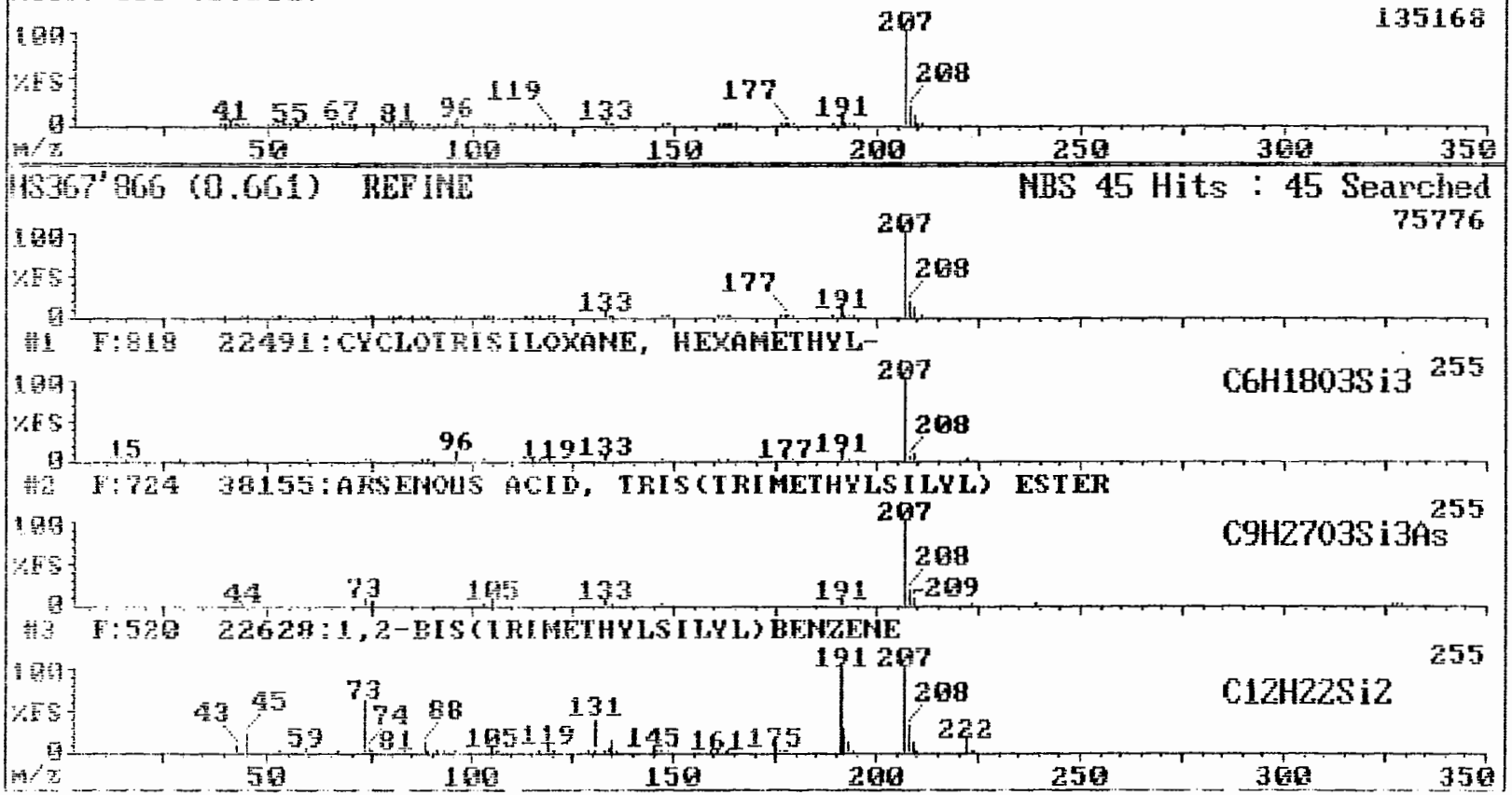
#3 F:779 15612:DECANE, 2,5,9-TRIMETHYL- C13H28 255



07/09/97 14:12 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-2 SET 4 TUBEA/B T/TC 173-46-9A/B TLI#42284 Instrument: H

MS367 866 (8.661) NBS 135168



Pacific Environmental Services

Project Number: 42284 | **Method 8240A VOST**
Sample File: HS368 | **Sample ID: VOST-3 SET 1 TUBEA/B T/TC**

Client Project: S407-003 | **Date Received: 06/30/97** | **Response File: ICALH708**
TLI ID: 173-46-10A,B
Date Analyzed : 07/09/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
Bromochloromethane		IS 1	4.44		
Chloromethane	0.161		0.88		0.05
Vinyl Chloride		U		0.001	0.05
1,3-Butadiene	0.182		1.01		0.05
Bromomethane	0.028	J	1.34		0.05
Chloroethane		U		0.001	0.05
Vinyl bromide		U		0.001	0.05
Trichlorofluoromethane	0.125		1.74		0.05
1,1-Dichloroethene		U		0.001	0.05
Iodomethane		U		0.001	0.05
Carbon disulfide	0.434		2.41		0.05
Acetone	0.127	B	2.48		0.05
Allyl chloride		U		0.001	0.05
Methylene chloride	3.024	BE	2.88		0.05
trans-1,2-Dichloroethene		U		0.001	0.05
tert-Butyl methyl ether		U		0.001	0.05
Acrylonitrile	0.525		3.18		0.05
n-Hexane	1.755	E	3.48		0.05
1,1-Dichloroethane		U		0.001	0.05
1,2-Epoxybutane		U		0.003	0.05
cis-1,2-Dichloroethene		U		0.001	0.05
Chloroform		U		0.001	0.05
1,2-Dichloroethane		U		0.001	0.05
Isooctane	0.077		5.24		0.05
1,4-Difluorobenzene		IS 2	5.61		
Vinyl acetate		U		0.001	0.05

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

Triangle Laboratories of RTP, Inc.
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Savar v3.5
Printed: 15:03 07/22/1997

Pacific Environmental Services

Project Number: 42284 | **Method 8240A VOST**
Sample File: HS368 | **Sample ID: VOST-3 SET 1 TUBEA/B T/TC**

Client Project: S407-003 | **Date Received: 06/30/97** | **Response File: ICALH708**
TLI ID: 173-46-10A,B
Date Analyzed : 07/09/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
2-Butanone	0.019	J	4.32		0.05
1,1,1-Trichloroethane	0.005	J	4.68		0.05
Carbon tetrachloride	0.011	J	4.86		0.05
Benzene	0.772	B	5.07		0.05
Trichloroethene		U		0.001	0.05
1,2-Dichloropropane		U		0.001	0.05
Ethyl acrylate		U		0.001	0.05
Methyl methacrylate	0.011	J	6.44		0.05
Bromodichloromethane		U		0.001	0.05
cis-1,3-Dichloropropene		U		0.001	0.05
trans-1,3-Dichloropropene		U		0.001	0.05
1,1,2-Trichloroethane		U		0.001	0.05
Dibromochloromethane		U		0.001	0.05
Ethylene dibromide		U		0.001	0.05
Bromoform		U		0.001	0.05
Chlorobenzene-d_5		IS 3	9.74		
4-Methyl-2-pentanone		U		0.001	0.05
Toluene	0.343	B	7.55		0.05
Tetrachloroethene		U		0.001	0.05
2-Hexanone		U		0.001	0.05
Chlorobenzene	0.011	J	9.79		0.05
Ethylbenzene	0.043	J	10.08		0.05
m-/p-Xylene	0.135		10.31		0.10
o-Xylene	0.046	J	11.01		0.05
Styrene	0.106		11.06		0.05
1,1,2,2-Tetrachloroethane		U		0.001	0.05

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

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Pacific Environmental Services

Project Number: 42284
Sample File: HS368

Method 8240A VOST
Sample ID: VOST-3 SET 1 TUBEA/B T/TC

Client Project: S407-003
TLI ID: 173-46-10A,B

Date Received: 06/30/97
Date Analyzed : 07/09/97

Response File: ICALH708

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
Cumene	0.004	J	11.79		0.05

Surrogate Summary	Amount (ug)	RT	IS Ref	%REC
1,2-Dichloroethane-d_4	0.246	5.05	1	98
Benzene-d_6	0.277	5.03	2	111
Toluene-d_8	0.296	7.46	3	118

Reviewed by TW Date 7/22/97

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit

IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

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Printed: 15:03 07/22/1997

Pacific Environmental Services

Project Number: 42284 Method 8240A
Sample File: HS368 Sample ID: VOST-3 SET 1 TUBEA/B T/TC

Client Project:	S407-003	Date Received:	06/30/97
TLI ID:	173-46-10A,B	Date Analyzed:	07/09/97
	Dilution Factor:	1.00	

Tentatively Identified Compounds

Name	RT	Area	IS RT	IS Area	Amount, ug
Methylbutane Isomer	1.530	41272228	4.451	4899559	2.106
Unknown	0.701	29335470	4.451	4899559	1.497
Hexamethylcyclotrisiloxane	8.651	21759164	9.741	10471731	0.519
Halogenated Hydrocarbon	2.070	9109668	4.451	4899559	0.465
C5H8 Isomer	0.951	8700915	4.451	4899559	0.444
Pentane	1.850	8230038	4.451	4899559	0.420
Methyl Propane Isomer	0.821	7240241	4.451	4899559	0.369
Tetrahydrodimethyl Pyranone Isomer	4.050	6209437	4.451	4899559	0.317
C8H16 isomer	7.781	5914977	9.741	10471731	0.141
C13H28 Isomer	10.611	5162709	9.741	10471731	0.123

Triangle Laboratories, Inc.
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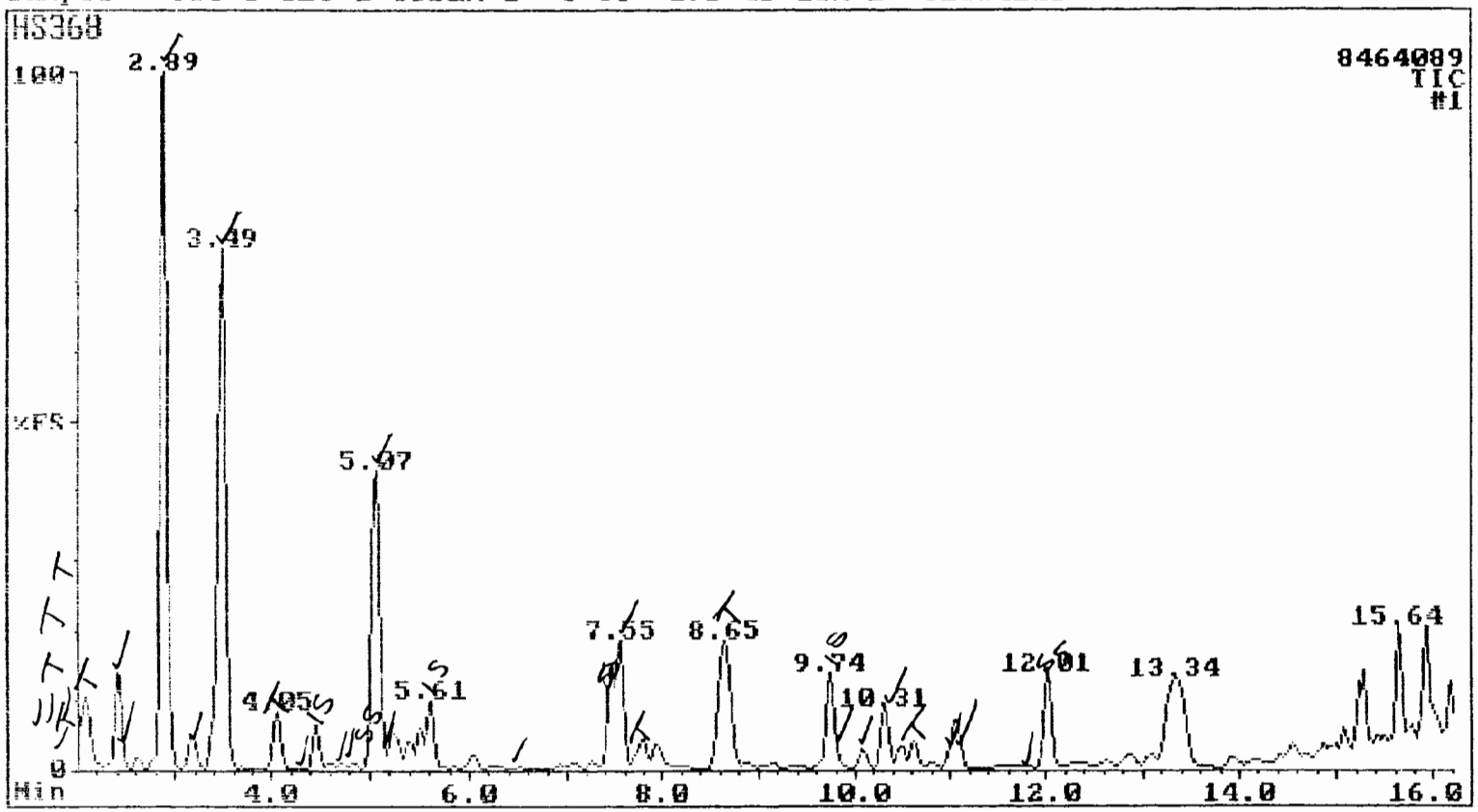
Phone: (919) 544-5729 * Fax: (919) 544-5491

Printed: 22:30 07/25/97

07-09-97 14:39 Triangle Laboratories of RTP, Inc. (919) 544-5729
Sample: VOST-3 SET 1 TUBEA/B T/TC 173-46-10A/B TLI#42284 Instrument H



Data Review: TW
Date: 7-30-97

JAN-DB : HS368 LAB-BASE QUAN 07-09-97 15:11

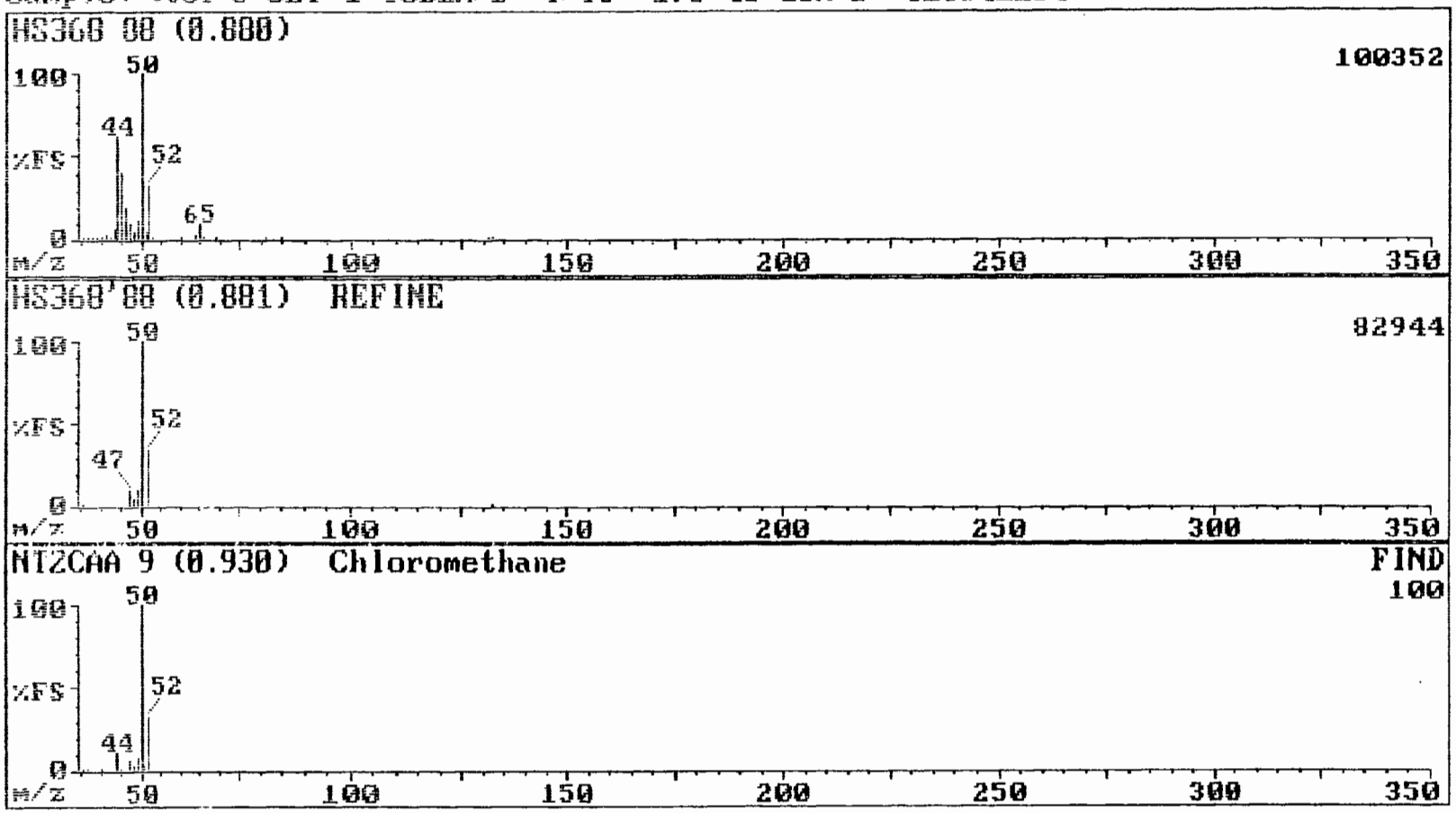
No.	MAT	FOR	REV	Delta	Area	P.Flags	RT	QM	Name
1	99	90	99	-7	370392	bb	4.44	128	Bromochloromethane
2	100	93	97	4	2150136	bb	5.61	114	1,4-Difluorobenzene
3	100	97	99	3	2658980	bv	9.74	117	Chlorobenzene-d5
4	53	21	67	3	980140	bv	5.05	65	1,2-Dichloroethane-d4
5	100	85	88	-2	2756652	bv	5.03	84	Benzene-d6
6	100	90	99	0	3570013	bv	7.46	98	Toluene-d8
~~7~~	~~24~~	~~10~~	~~31~~	~~-14~~	~~43650~~	~~A~~	~~12.33~~	98	o-Xylene-d10 FP TW
8	100	88	94	1	1732457	vv	12.01	95	4-Bromofluorobenzene
9	91	72	83	-4	501248	vv	0.88	50	Chloromethane
10	0	0	0	0	0		0.00	62	Vinyl Chloride
11	99	75	100	-6	~~1659558~~ 712689	~~A~~	~~0.95~~ 1.01	39	1,3-Butadiene MI TW
12	86	56	96	-6	91120	bb	1.34	94	Bromomethane
13	0	0	0	0	0		0.00	64	Chloroethane
14	0	0	0	0	0		0.00	106	Vinyl bromide
15	92	71	97	-7	531284	bb	1.74	101	Trichlorofluoromethane
~~16~~	~~24~~	~~11~~	~~56~~	~~-28~~	~~3856~~	~~A~~	~~2.06~~	96	1,1-Dichloroethene FP TW
17	0	0	0	0	0		0.00	142	Iodomethane
18	100	84	99	-5	4054180	bv	2.41	76	Carbon disulfide
19	86	61	85	-5	245528	vb	2.48	43	Acetone
~~20~~	~~63~~	~~44~~	~~65~~	~~-5~~	~~9704~~	~~A~~	~~2.74~~	76	Allyl chloride FP TW
21	100	85	95	-4	8824752	bv	2.88	84	Methylene chloride
22	0	0	0	0	0		0.00	96	trans-1,2-Dichloroethene
~~23~~	~~82~~	~~65~~	~~70~~	~~-2~~	~~29092~~	~~bb~~	~~3.24~~	73	tert-Butyl methyl ether FP TW
~~24~~	~~69~~	~~36~~	~~83~~	~~4~~	~~535430~~	~~bv~~	~~3.18~~	53	Acrylonitrile Keeping TW
25	100	99	100	-4	12161260	vv	3.48	57	n-Hexane
26	0	0	0	0	0		0.00	63	1,1-Dichloroethane
~~27~~	~~55~~	~~44~~	~~53~~	~~6~~	~~447122~~	~~vv~~	~~4.05~~	42	1,2-Epoxybutane FP TW
28	0	0	0	0	0		0.00	96	cis-1,2-Dichloroethene
29	0	0	0	0	0		0.00	83	Chloroform
30	0	0	0	0	0		0.00	62	1,2-Dichloroethane
31	100	84	96	3	1817840	bv	5.24	57	Isooctane
~~32~~	~~29~~	~~31~~	~~62~~	~~32~~	~~8862600~~	~~vv~~	~~3.49~~	43	Vinyl acetate FP TW
33	96	76	82	-2	6692	bb	4.32	72	2-Butanone
34	39	15	50	-3	22704	bb	4.68	97	1,1,1-Trichloroethane
35	52	22	62	-1	40780	bb	4.86	117	Carbon tetrachloride
36	100	92	99	-2	8416231	bv	5.07	78	Benzene
~~37~~	~~40~~	~~11~~	~~53~~	~~0~~	~~6368~~	~~bb~~	~~5.85~~	130	Trichloroethene
~~38~~	~~23~~	~~16~~	~~41~~	~~23~~	~~416~~	~~bb~~	~~5.86~~	63	1,2-Dichloropropane
~~39~~	~~40~~	~~31~~	~~62~~	~~-13~~	~~272820~~	~~vv~~	~~6.03~~	55	Ethyl acrylate FP TW
40	88	66	75	1	23566	A	6.44	69	Methyl methacrylate
41	0	0	0	0	0		0.00	83	Bromodichloromethane
42	0	0	0	0	0		0.00	75	cis-1,3-Dichloropropene
43	0	0	0	0	0		0.00	75	trans-1,3-Dichloropropen
44	0	0	0	0	0		0.00	97	1,1,2-Trichloroethane
45	0	0	0	0	0		0.00	129	Dibromochloromethane
46	0	0	0	0	0		0.00	107	Ethylene dibromide
47	0	0	0	0	0		0.00	173	Bromoform
~~48~~	~~56~~	~~5~~	~~87~~	~~1~~	~~68032~~	~~A~~	~~7.46~~	43	4-Methyl-2-pentanone FP TW
49	100	94	99	0	2702268	bv	7.55	92	Toluene
~~50~~	~~39~~	~~13~~	~~50~~	~~1~~	~~5352~~	~~A~~	~~8.37~~	164	Tetrachloroethene FP TW

Data Review: TW
Date: 7-20-97

No.	MAT	FOR	REV	Delta	Area	P.Flags	RT	QM	Name
~~51~~	~~42~~	~~17~~	~~65~~	~~-2~~	~~30907~~	~~n~~	~~9.69~~	43	2-Hexanone
52	65	30	79	1	116996	bb	9.79	112	Chlorobenzene
53	100	88	98	1	233832	bv	10.08	106	Ethylbenzene
54	100	87	94	0	917876	vb	10.31	106	m-/p-Xylene
55	100	84	90	1	295512	bv	11.01	106	o-Xylene
56	100	88	95	1	1138244	bv	11.06	104	Styrene
~~57~~	~~27~~	~~6~~	~~49~~	~~-8~~	~~11720~~	~~n~~	~~12.39~~	83	1,1,2,2-Tetrachloroethan
58	63	35	70	1	88721	bv	11.79	105	Cumene

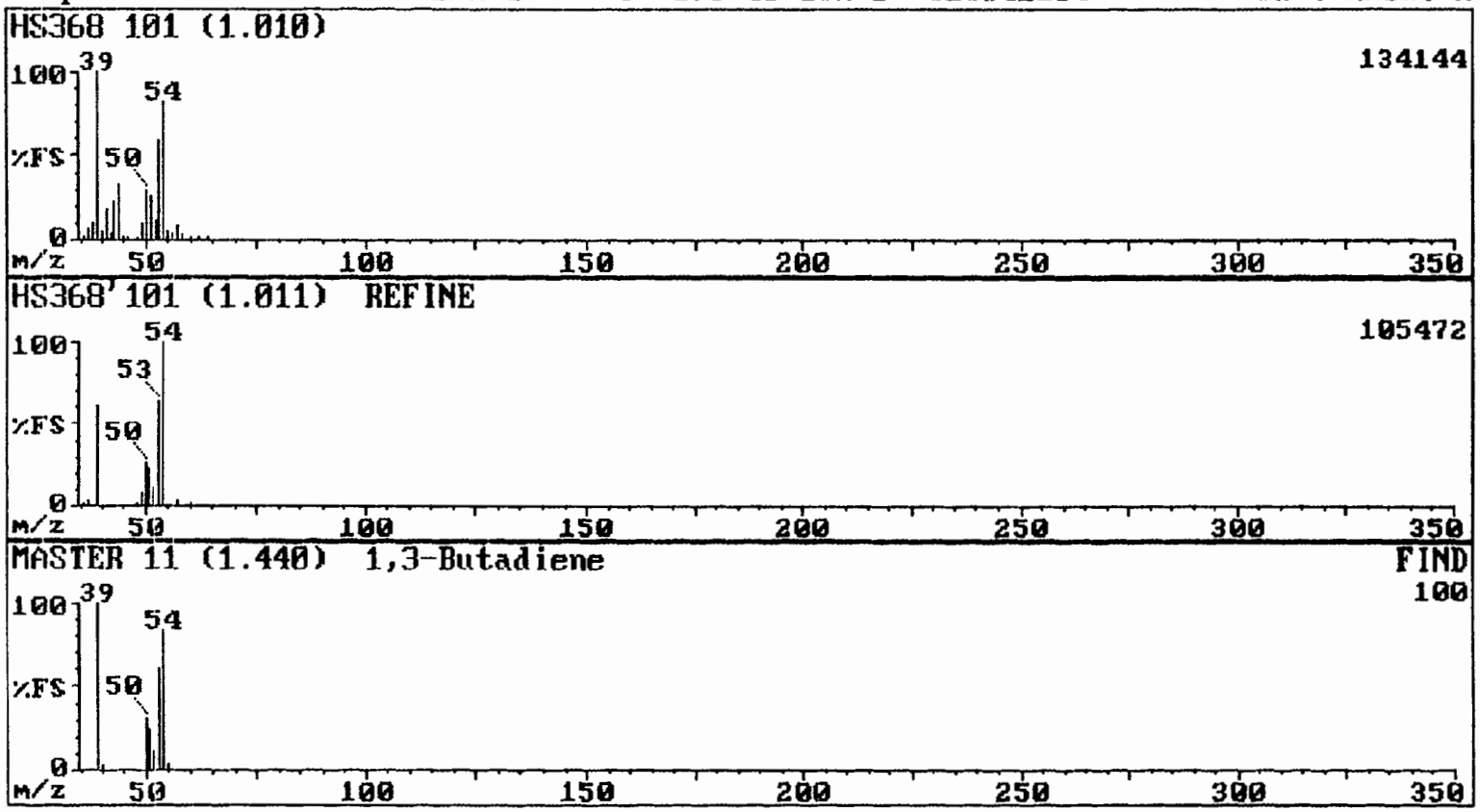
07-09-97 14:39 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 1 TUBEA/B T/TC 173-46-10A/B TLI#42284 Instrument H



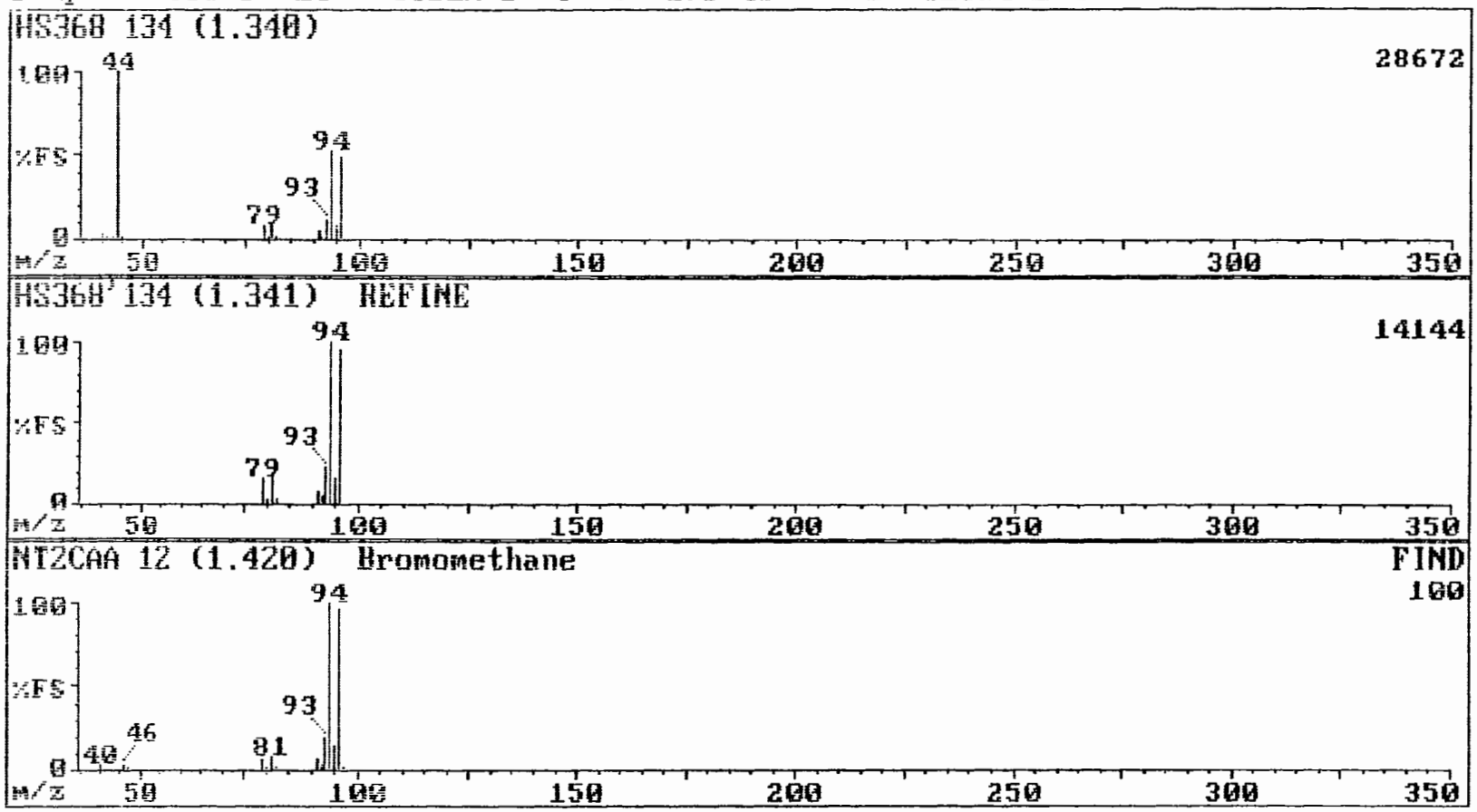
09-Jul-97 14:39 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 1 TUBEA/B T/TC 173-46-10A/B TLI#42284 Instrument H



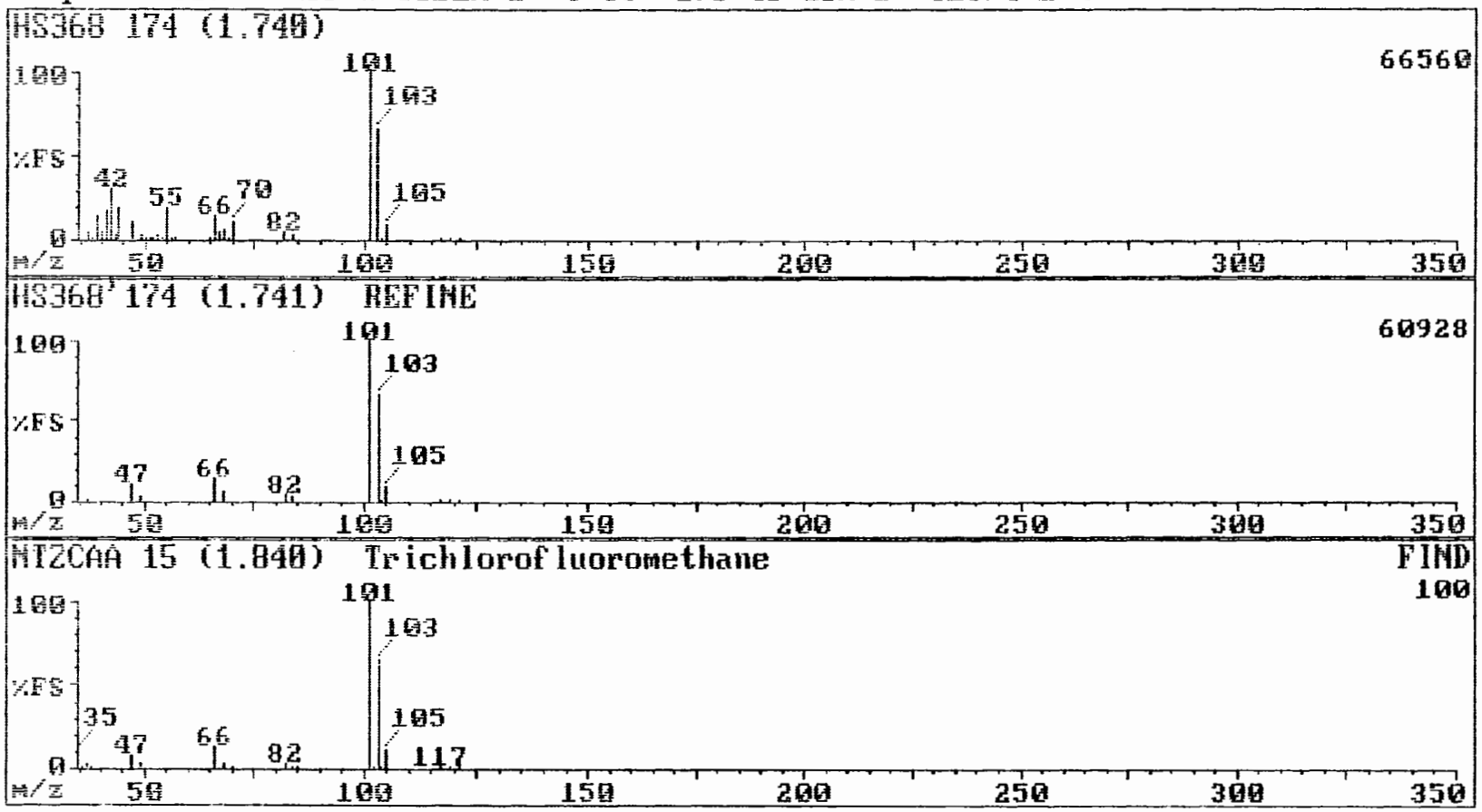
07-09-97 14:39 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 1 TUBEA/B T/TC 173-46-10A/B TLI#42284 Instrument H



07-09-97 14:39 Triangle Laboratories of RTP, Inc. (919) 544-5729

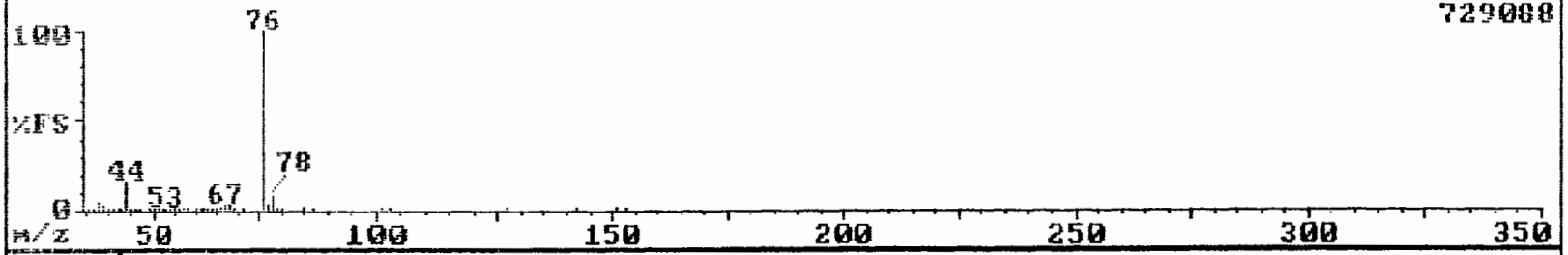
Sample: VOST-3 SET 1 TUBEA/B T/TC 173-46-10A/B TLI#42284 Instrument H



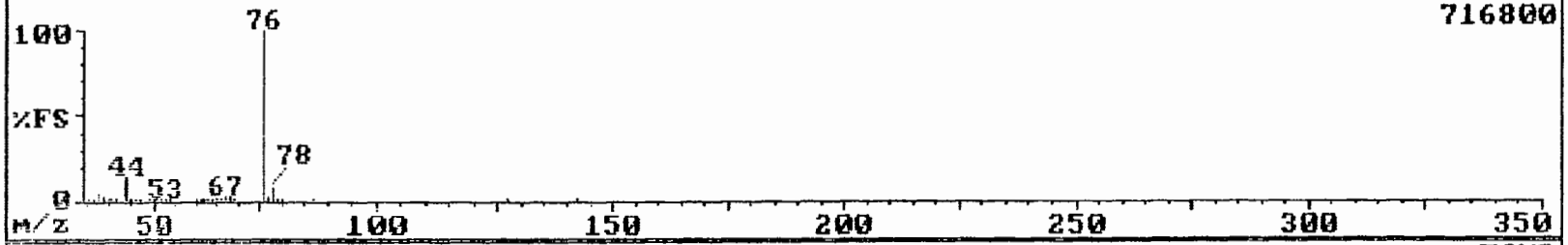
07-09-97 14:39 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 1 TUBEA/B T/TC 173-46-10A/B TLI#42284 Instrument H

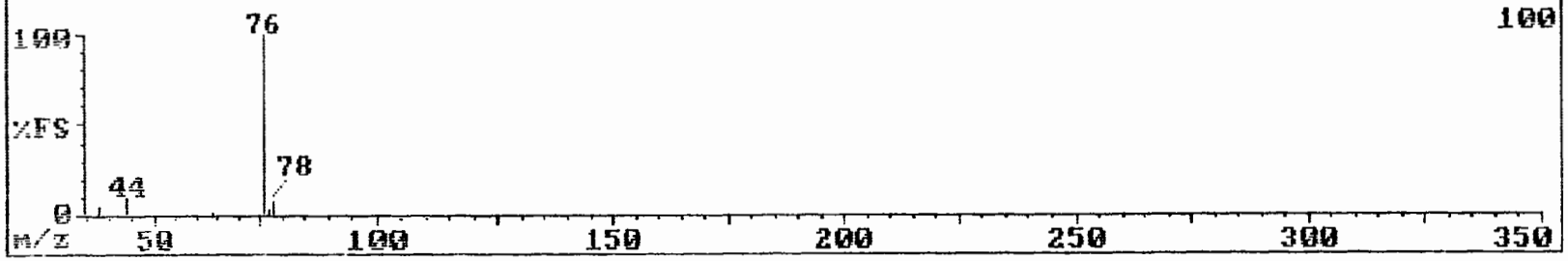
HS360 241 (2.410) 729088



HS360'241 (2.411) REFINE 716800

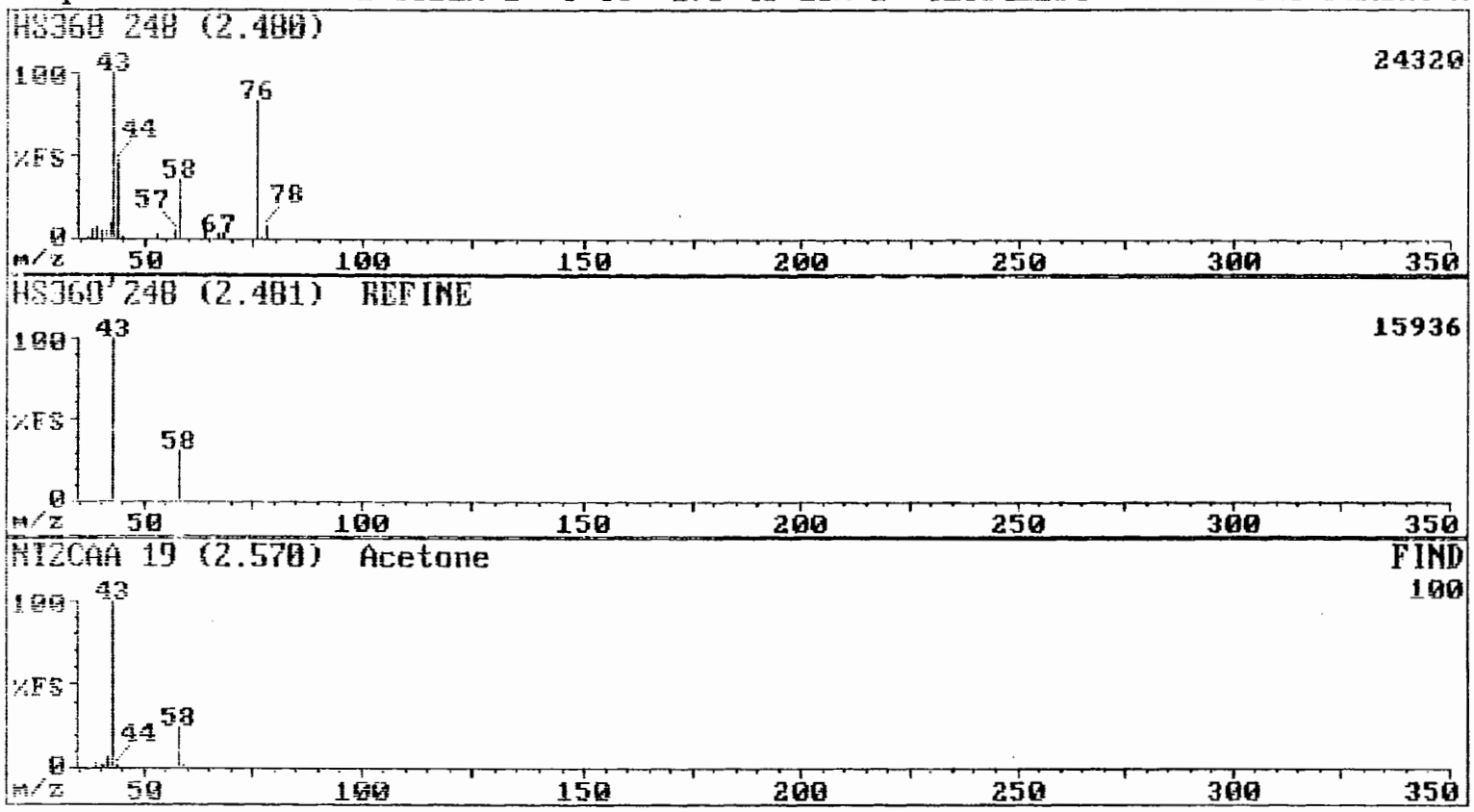


NTZCAA 18 (2.500) Carbon disulfide FIND 100



07-09-97 14:39 Triangle Laboratories of RTP, Inc. (919) 544-5729

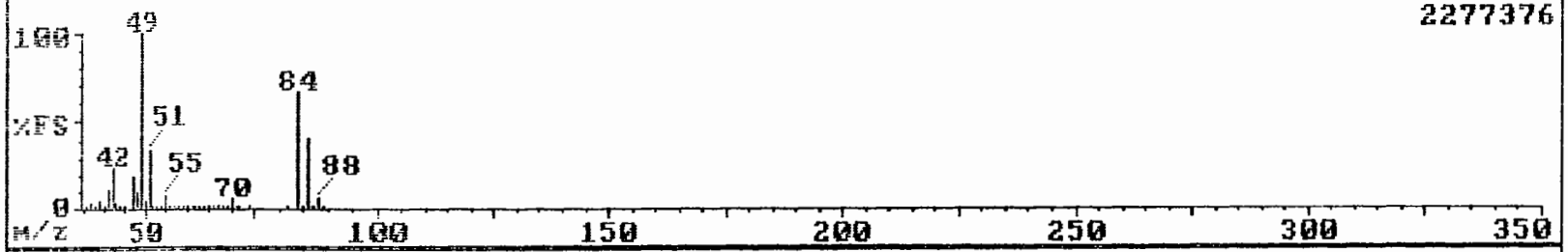
Sample: VOST-3 SET 1 TUBEA/B T/TC 173-46-18A/B TLI#42284 Instrument H



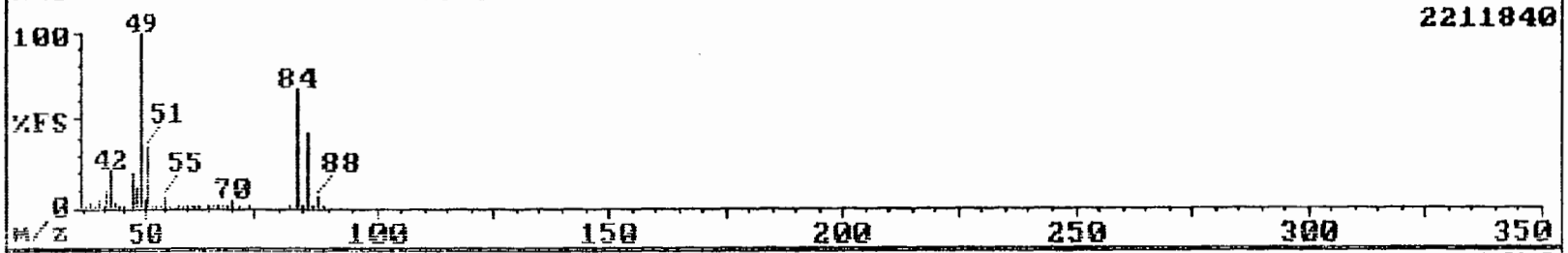
07-09-97 14:39 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 1 TUBEA/B T/TC 173-46-10A/B TLI#42284 Instrument H

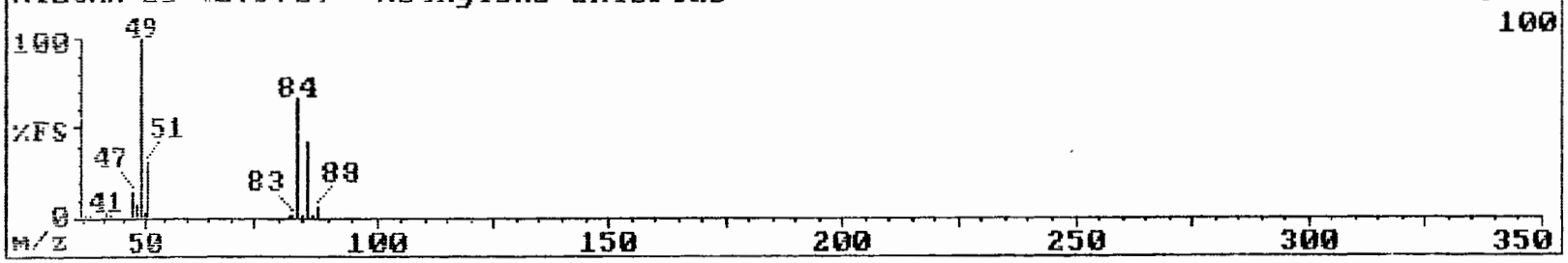
HS368 288 (2.880) 2277376



HS368'288 (2.881) REFINE 2211840

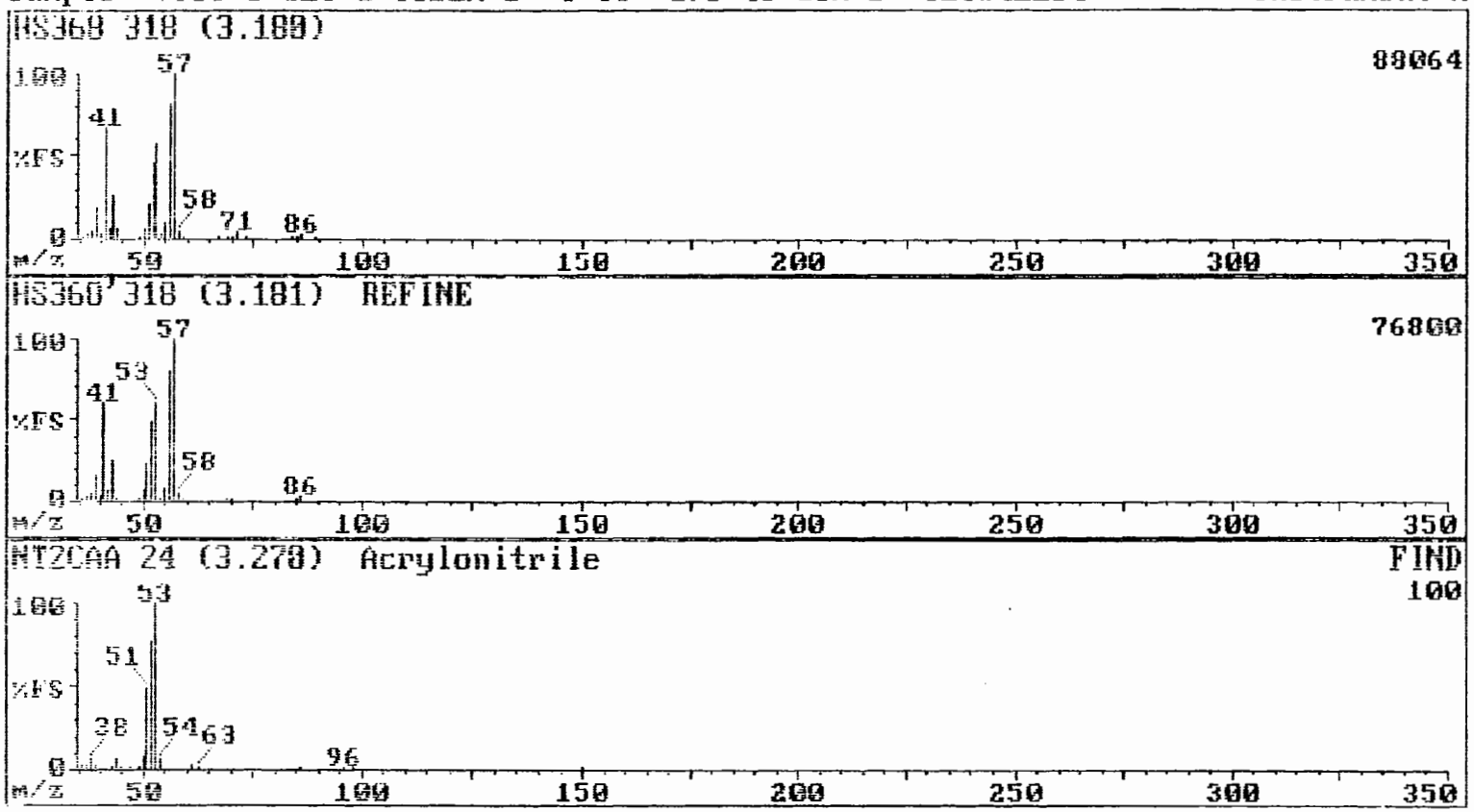


NTZCAA 21 (2.970) Methylene chloride FIND 100



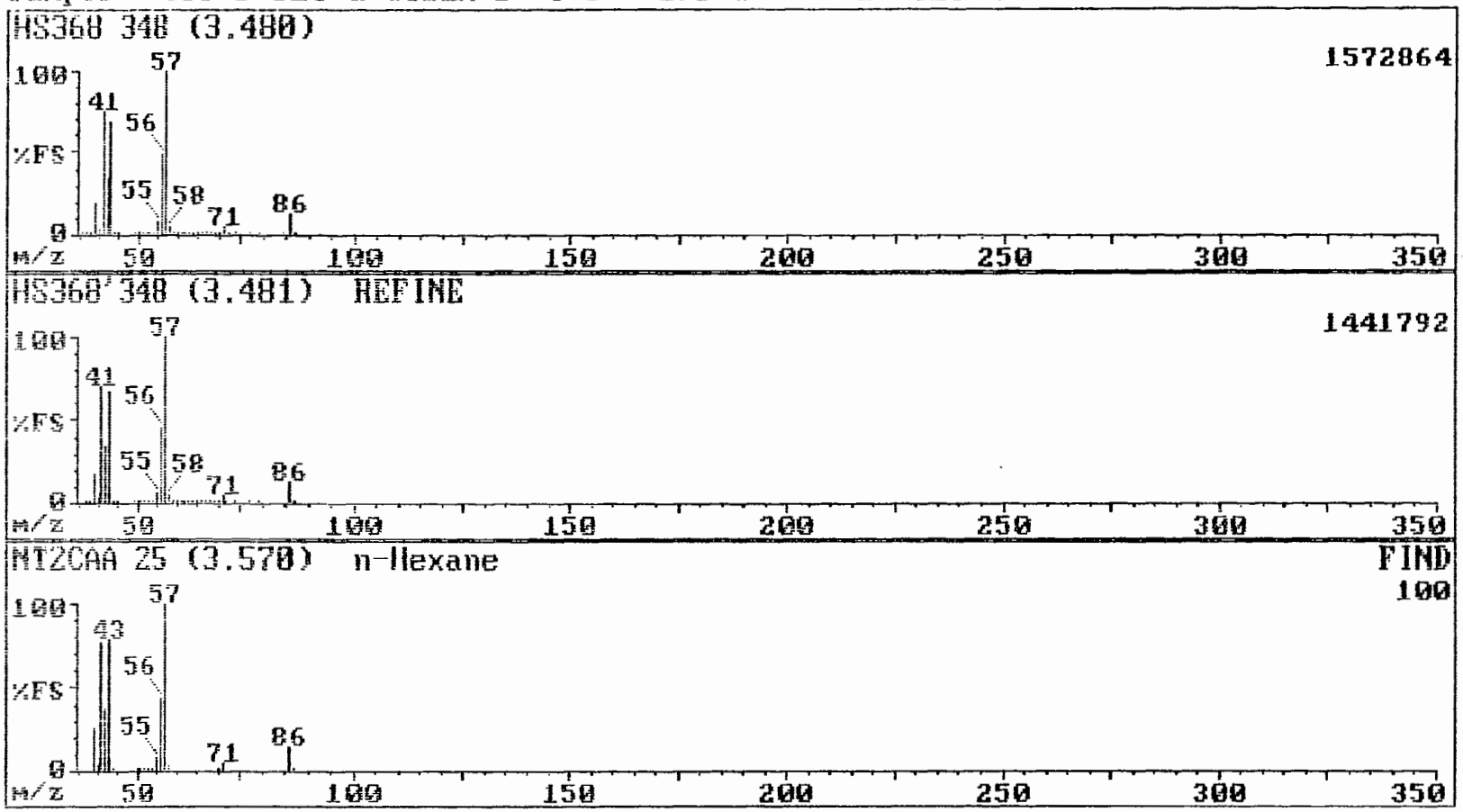
07-09-97 14:39 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 1 TUBEA/B T/TC 173-46-10A/B TLI#42284 Instrument H



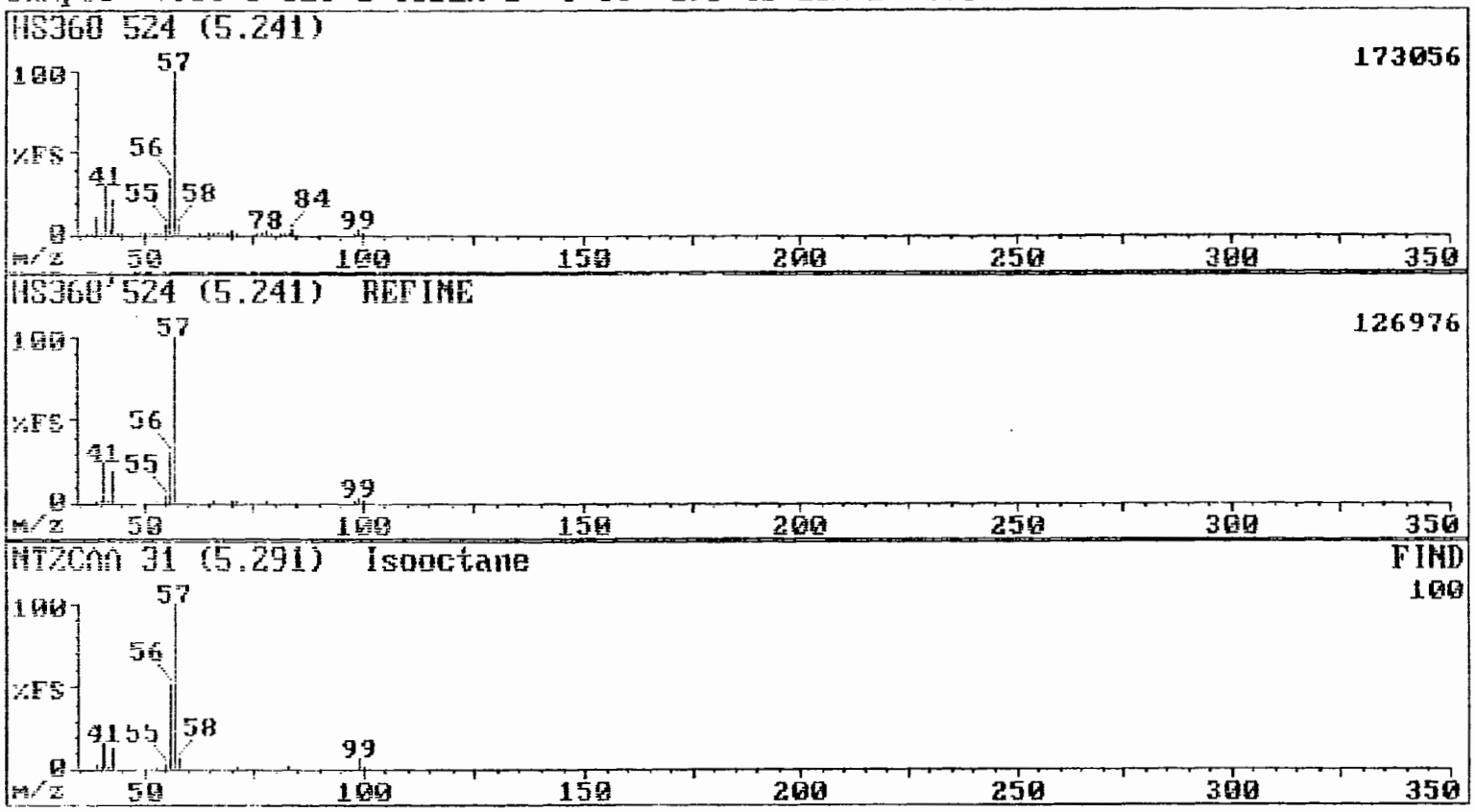
07-09-97 14:39 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 1 TUBEA/B T/TC 173-46-10A/B TLI#42284 Instrument H



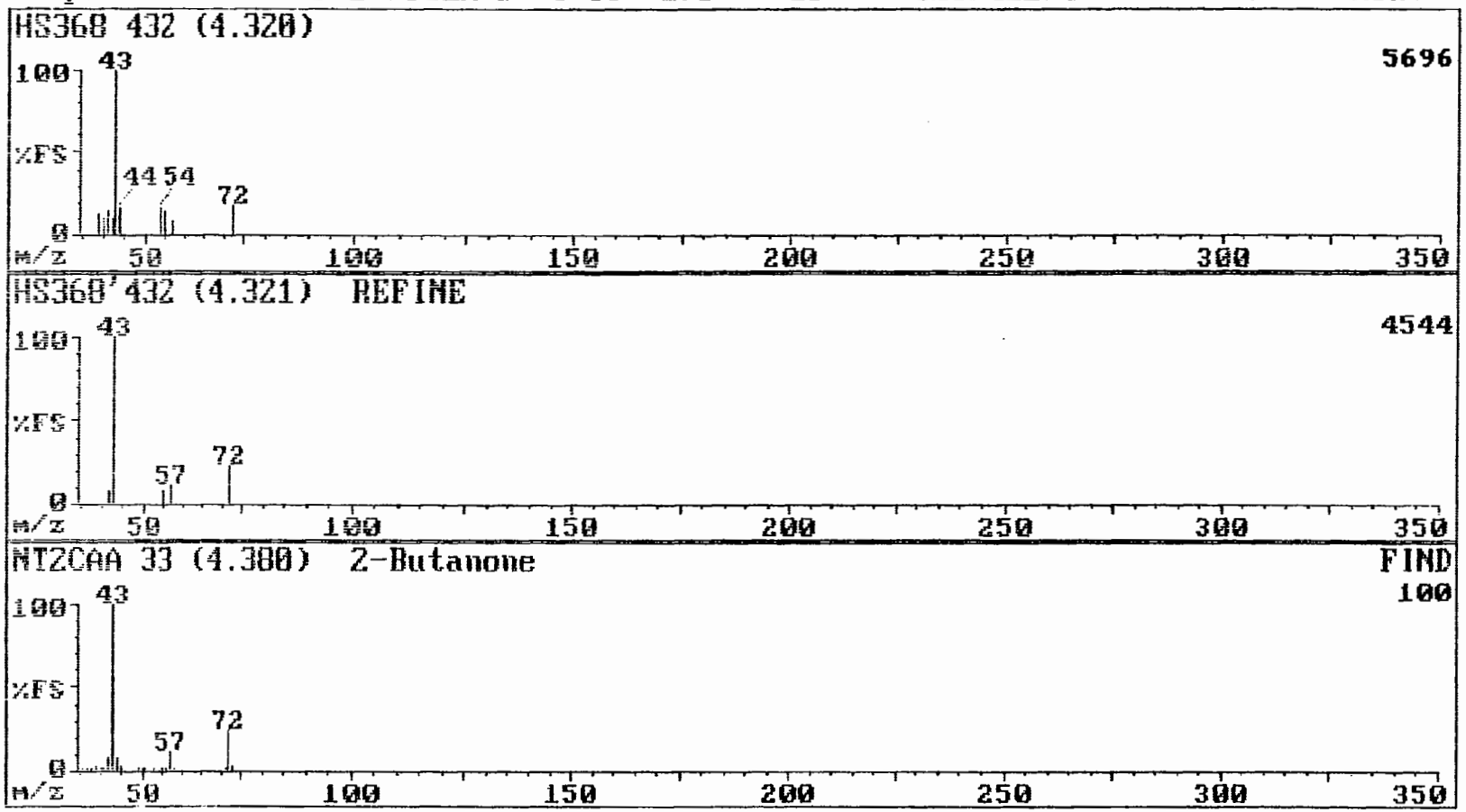
07-09-97 14:39 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 1 TUBEA/B T/TC 173-46-10A/B TLI#42284 Instrument H



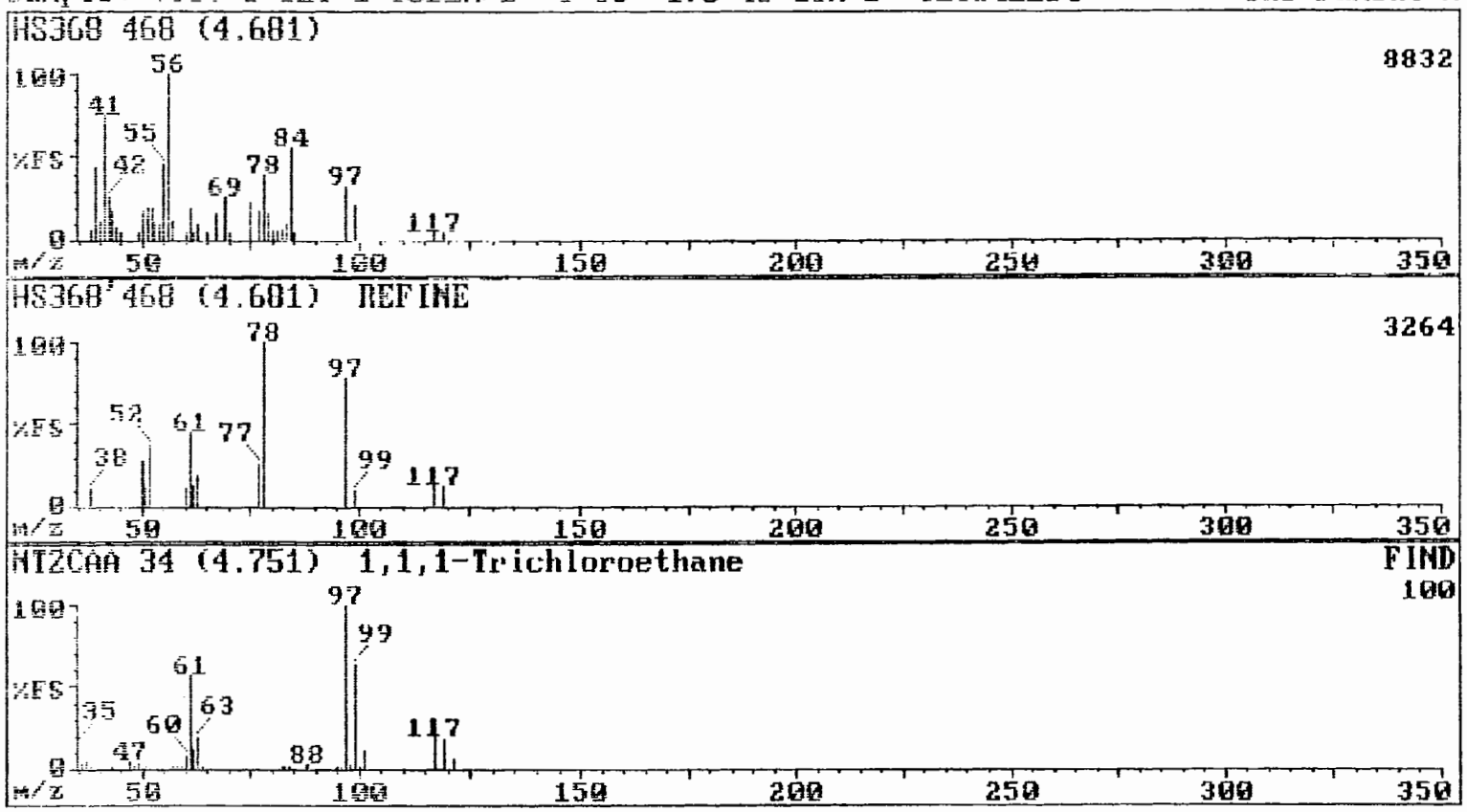
07-09-97 14:39 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 1 TUBEA/B T/TC 173-46-10A/B TLI#42284 Instrument H



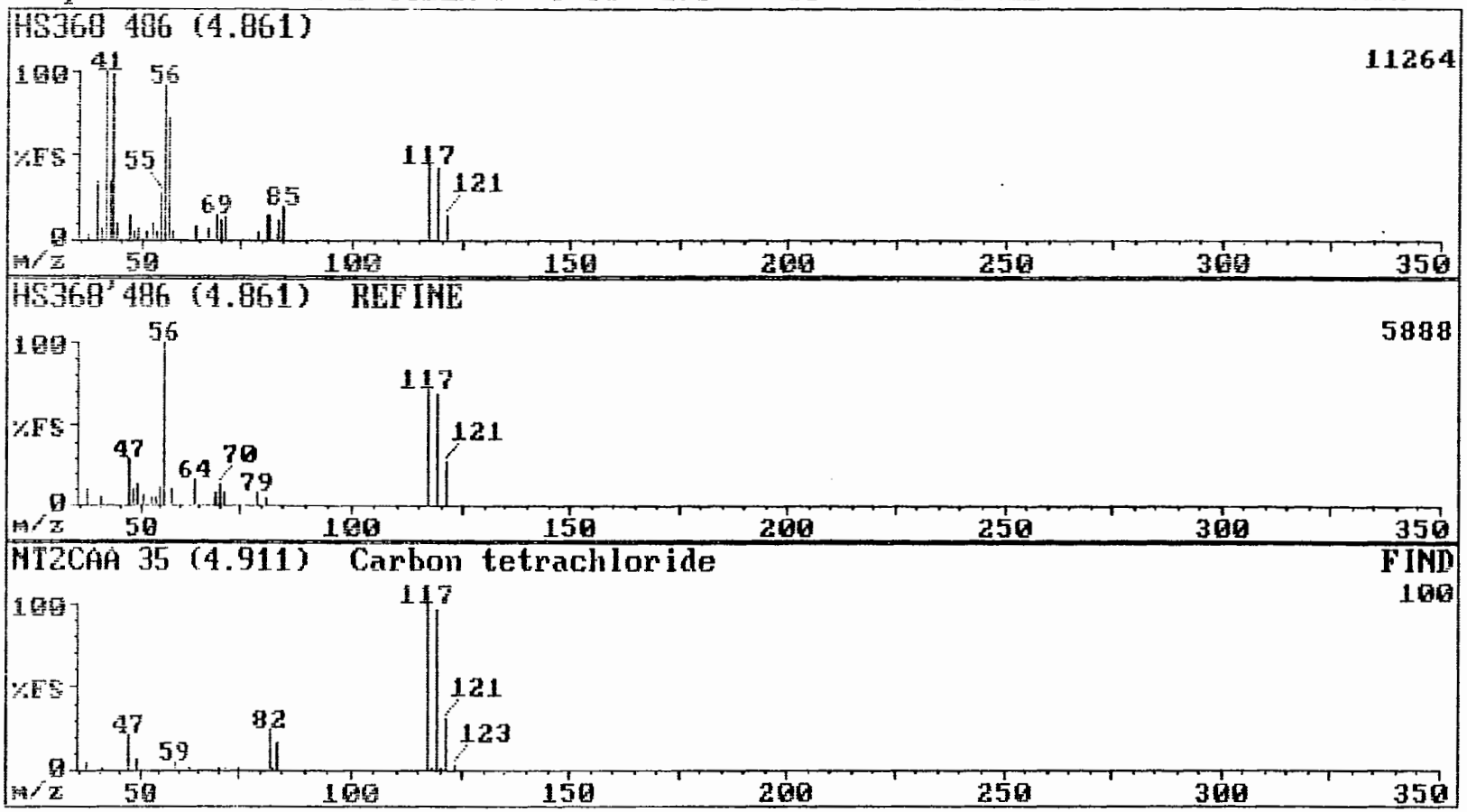
07 09 97 14:39 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 1 TUBEA/B T/TC 173-46-10A/B TLI#42284 Instrument H



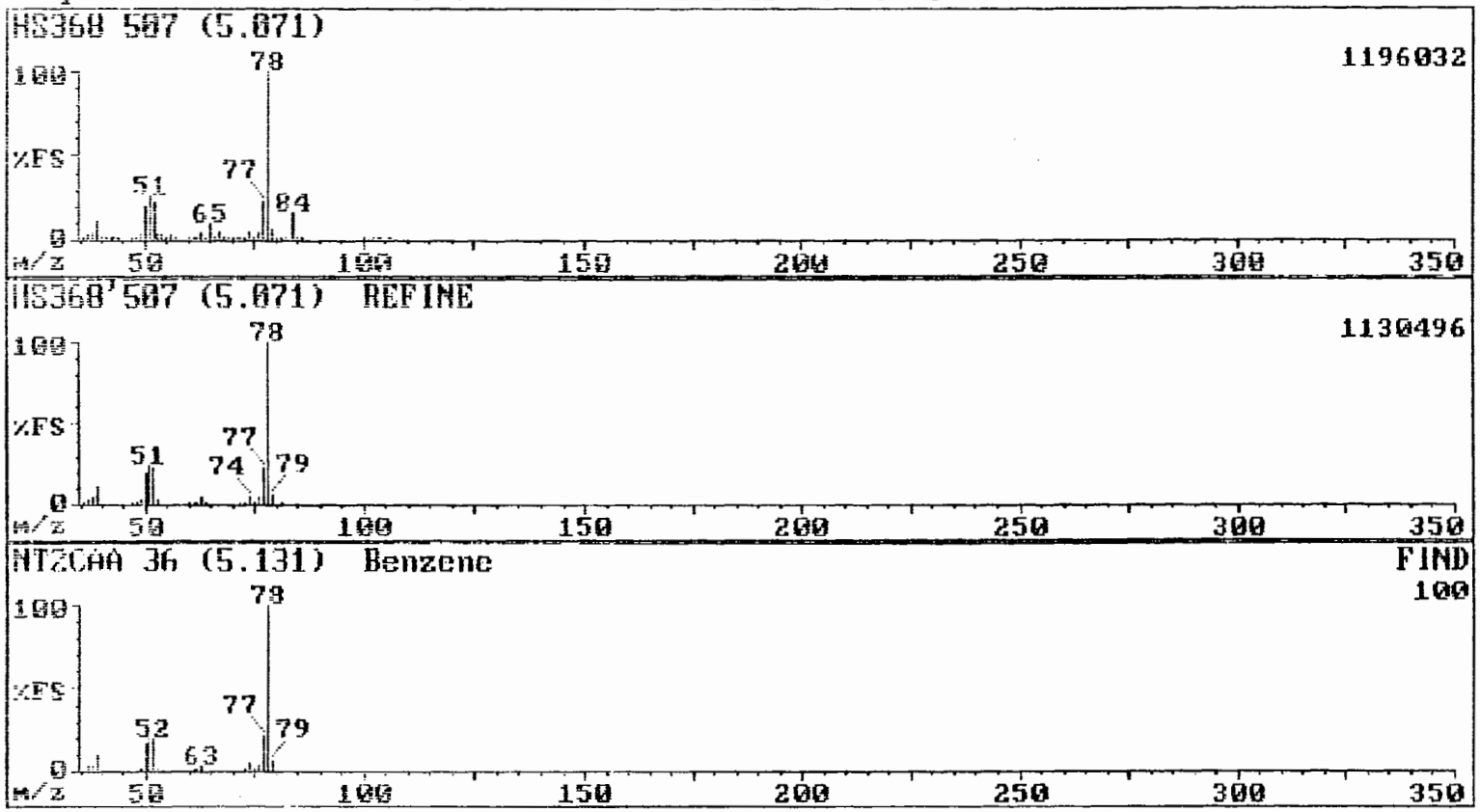
07-09-97 14:39 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 1 TUBEA/B T/TC 173-46-10A/B TLI#42284 Instrument H



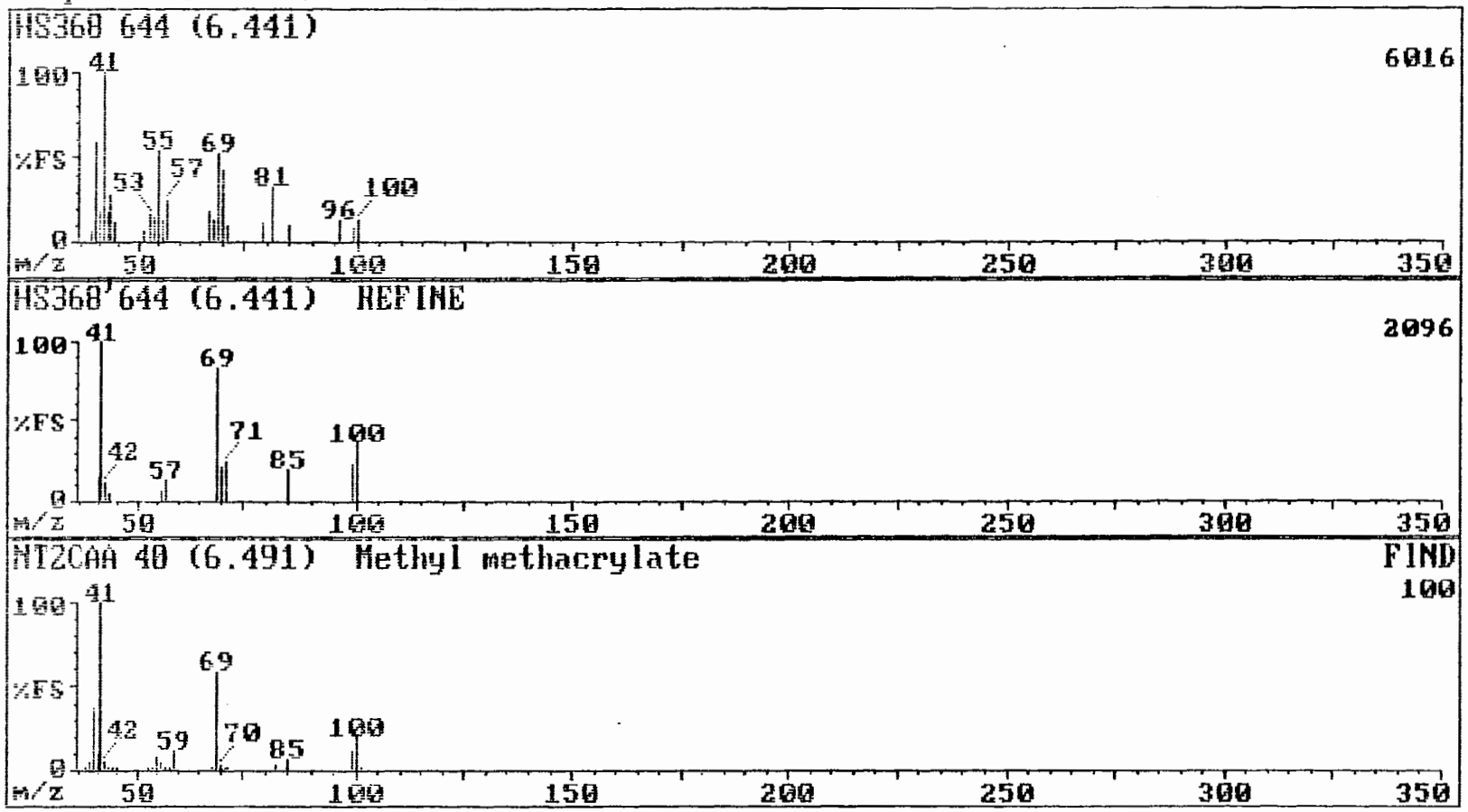
07-09-97 14:39 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 1 TUBEA/B T/TC 173-46-10A/B TLI#42284 Instrument H



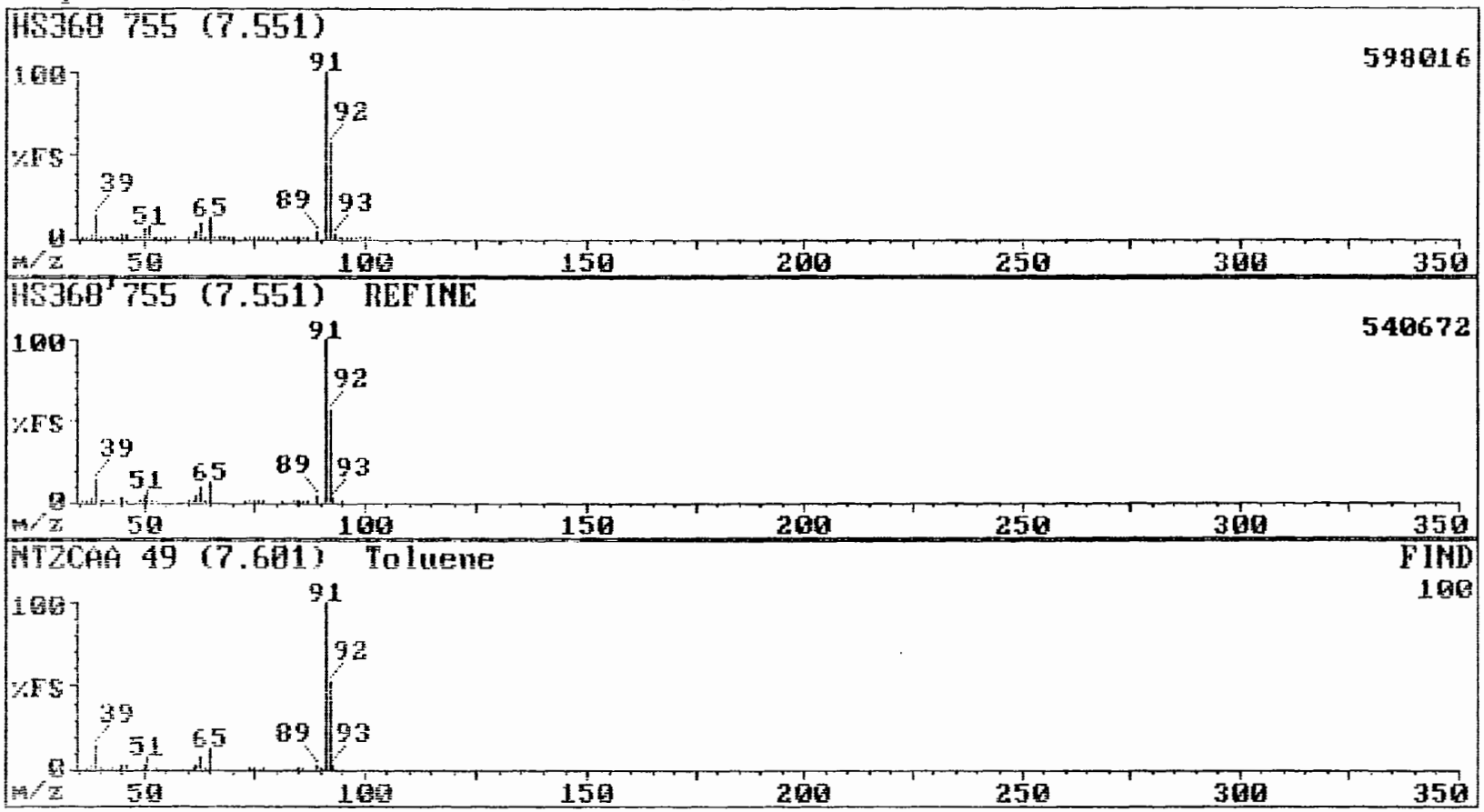
07-09-97 14:39 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 1 TUBEA/B T/TC 173-46-10A/B TLI#42284 Instrument H



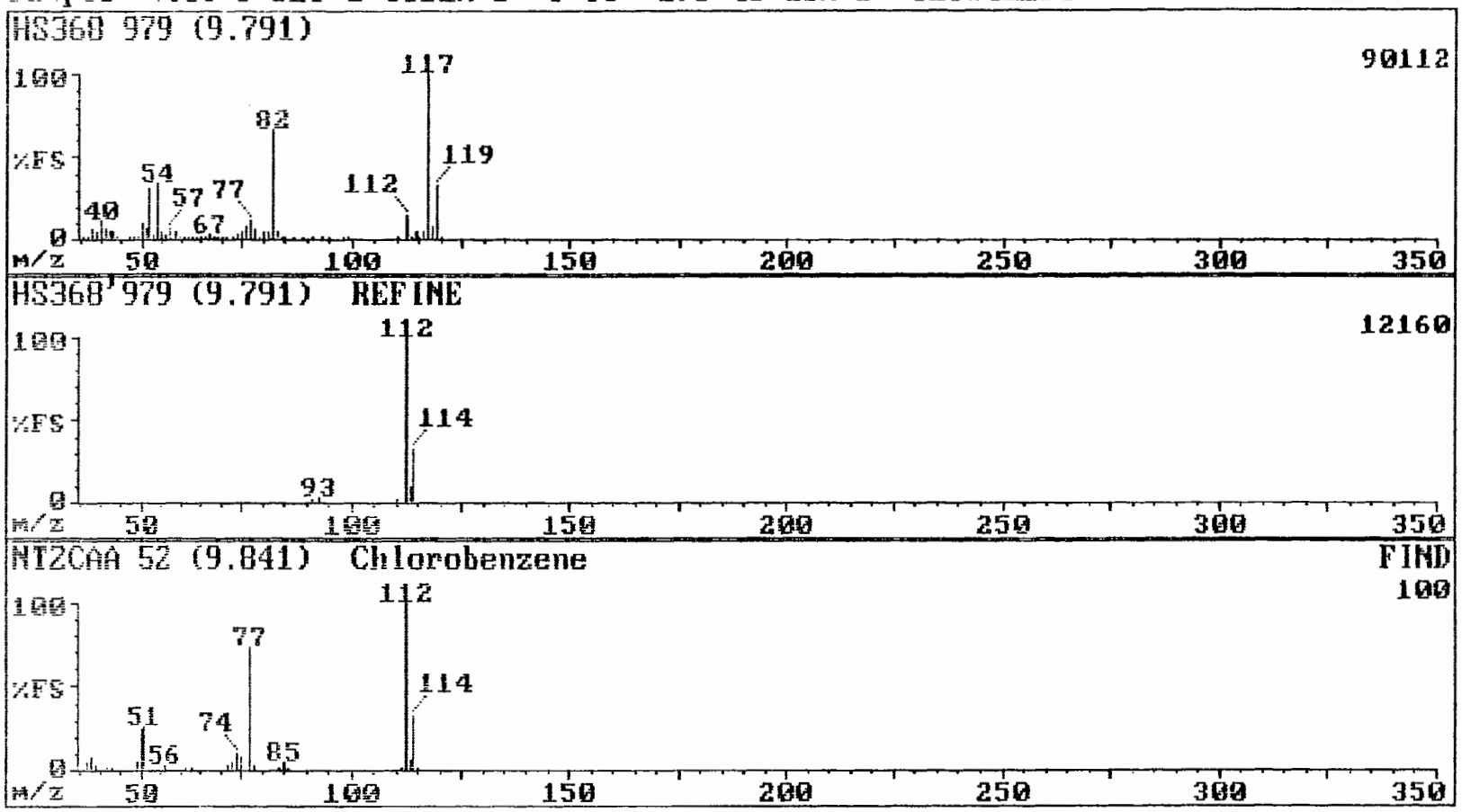
07-09-97 14:39 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 1 TUBEA/B T/TC 173-46-10A/B TLI#42284 Instrument H



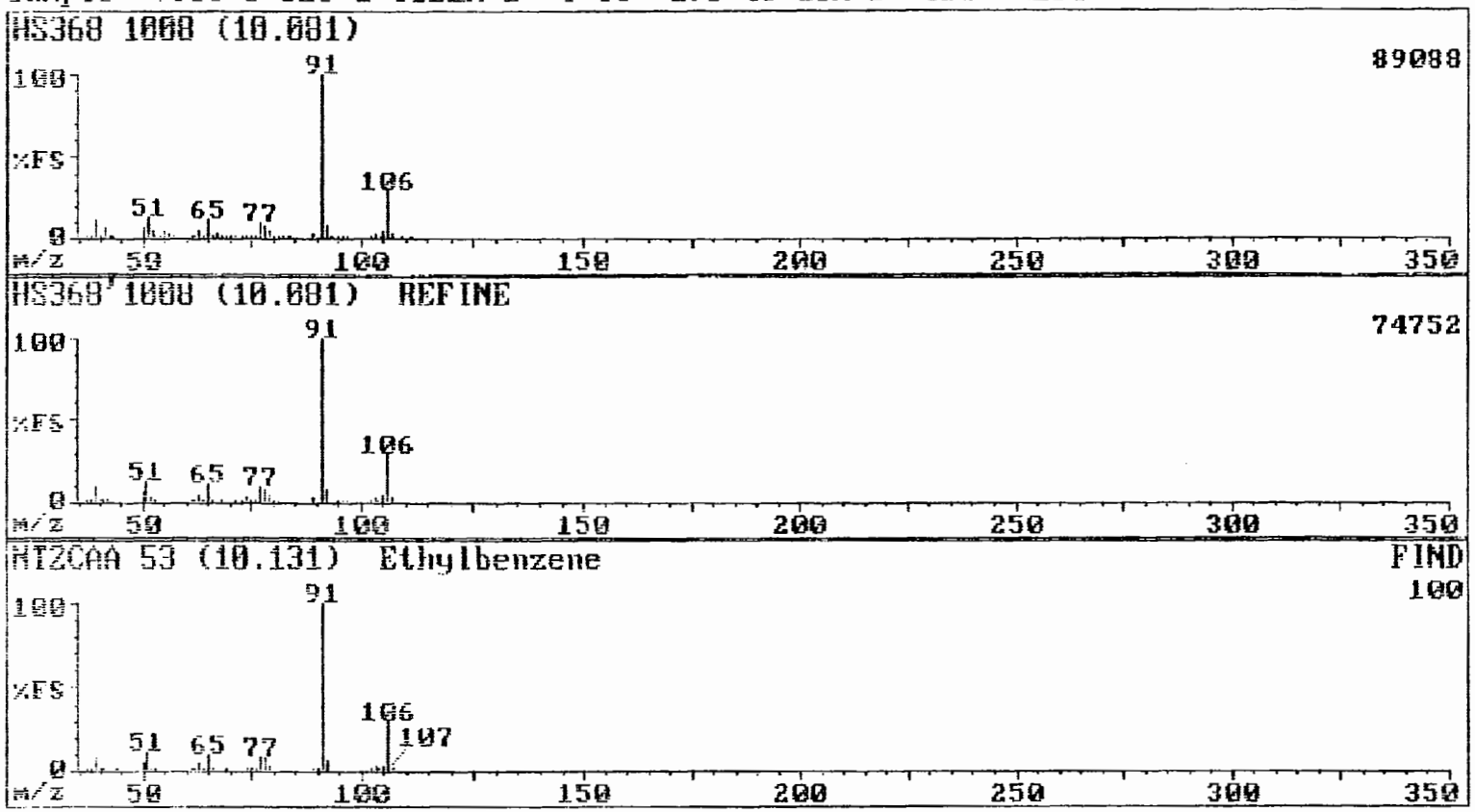
07-09-97 14:39 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 1 TUBEA/B T/TC 173-46-10A/B TLI#42284 Instrument H



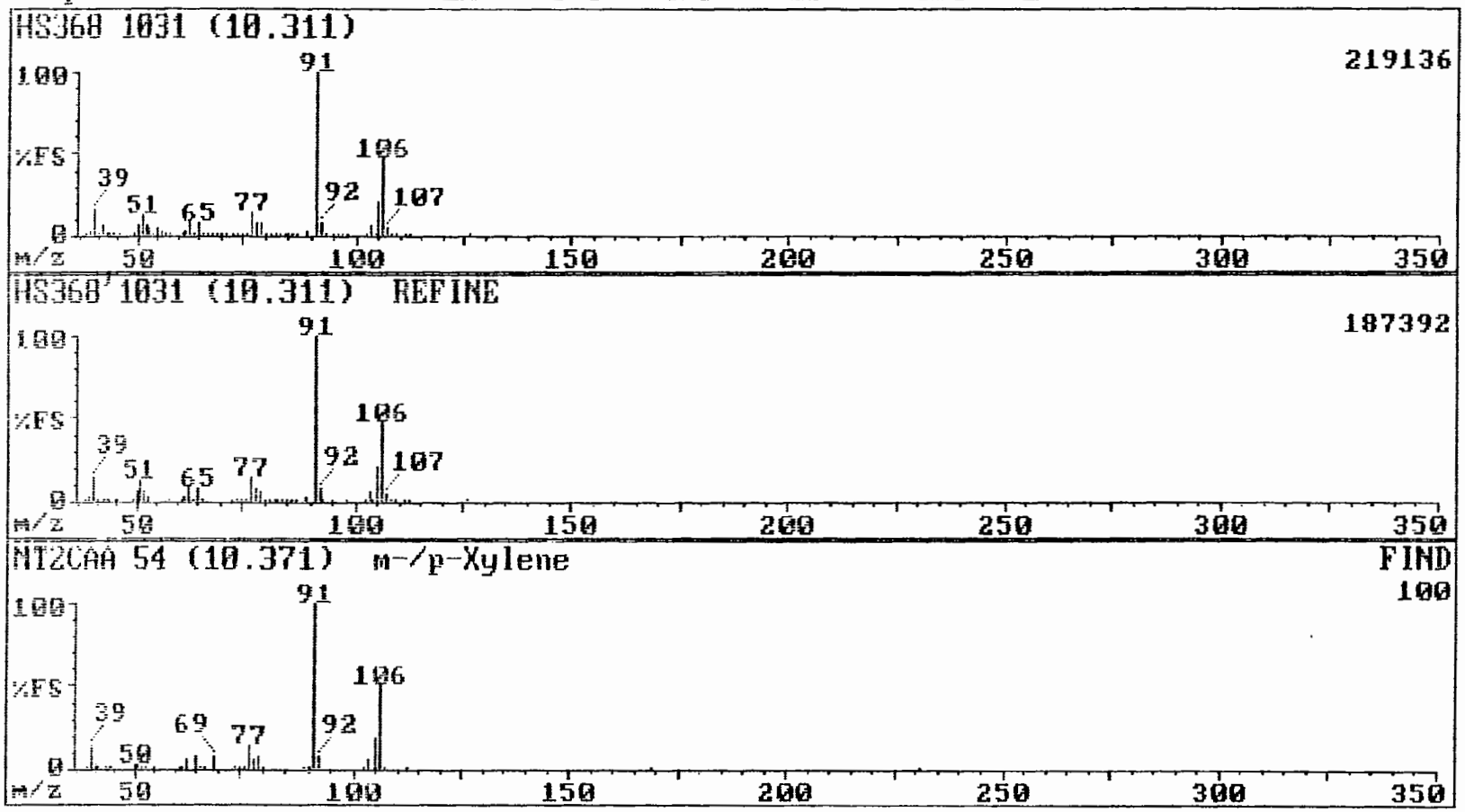
07-09-97 14:39 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 1 TUBEA/B T/TC 173-46-10A/B TLI#42284 Instrument H



07-09-97 14:39 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 1 TUBEA/B T/TC 173-46-10A/B TLI#42284 Instrument H



07-09-97 14:39 Triangle Laboratories of RTP, Inc. (919) 544-5729

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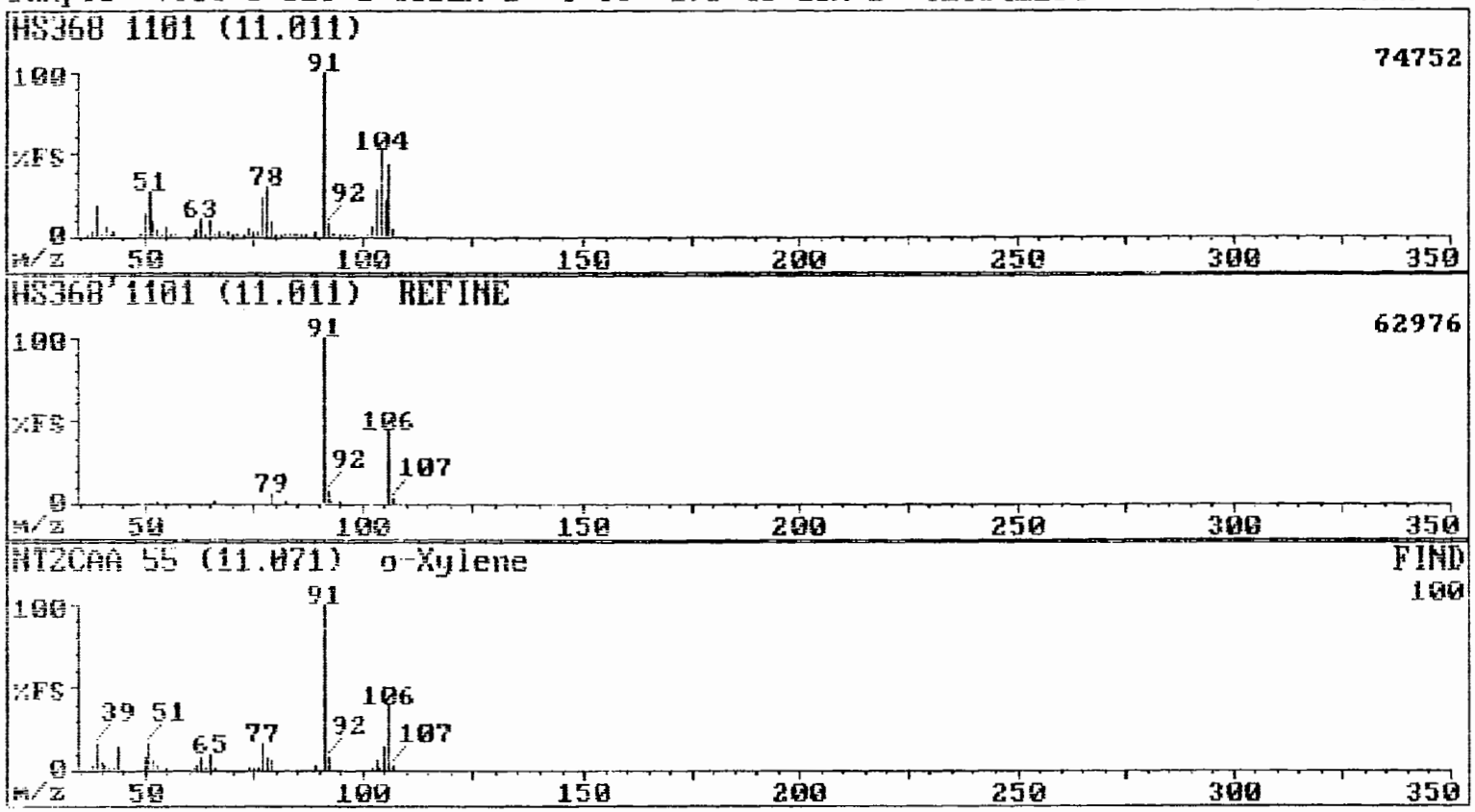
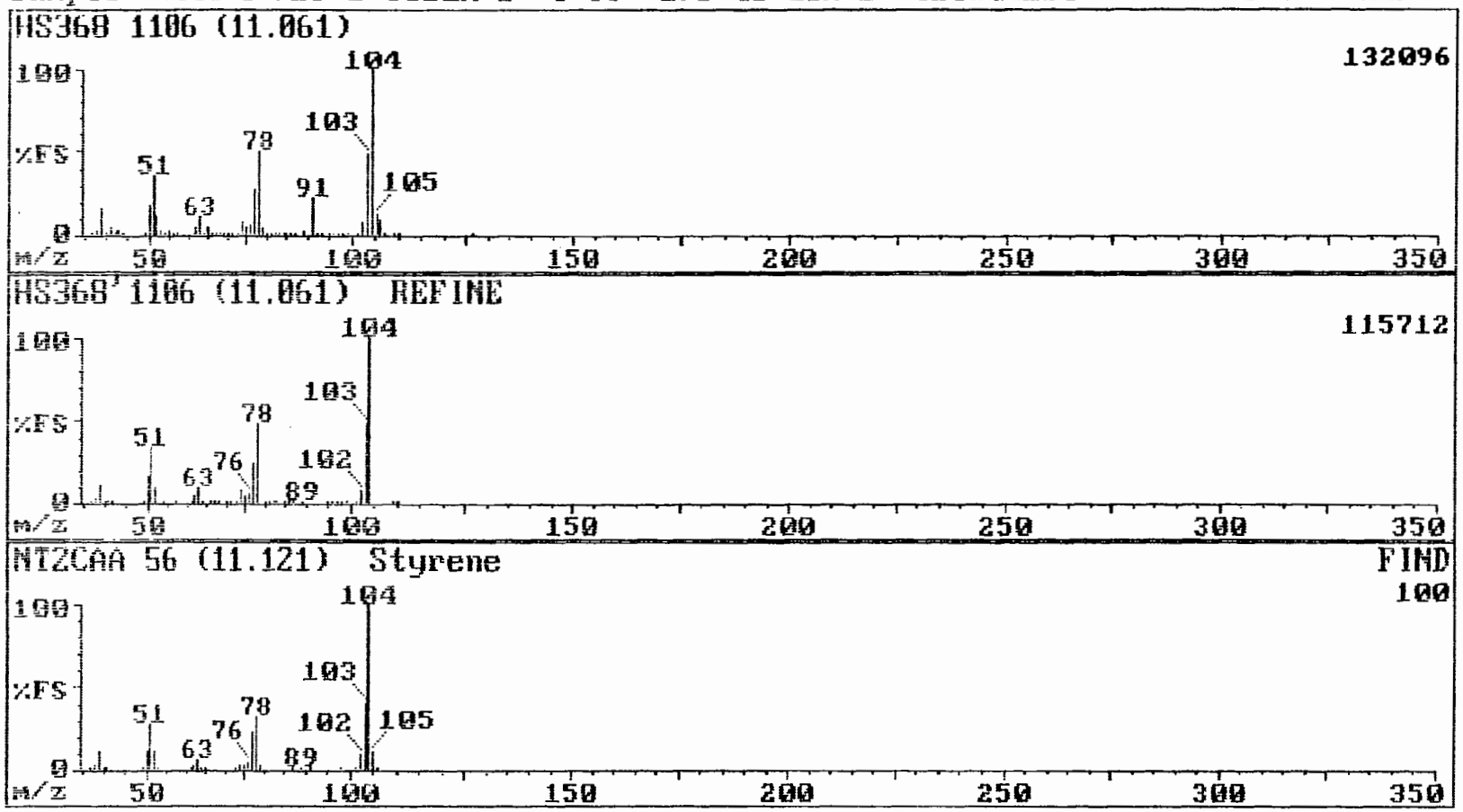


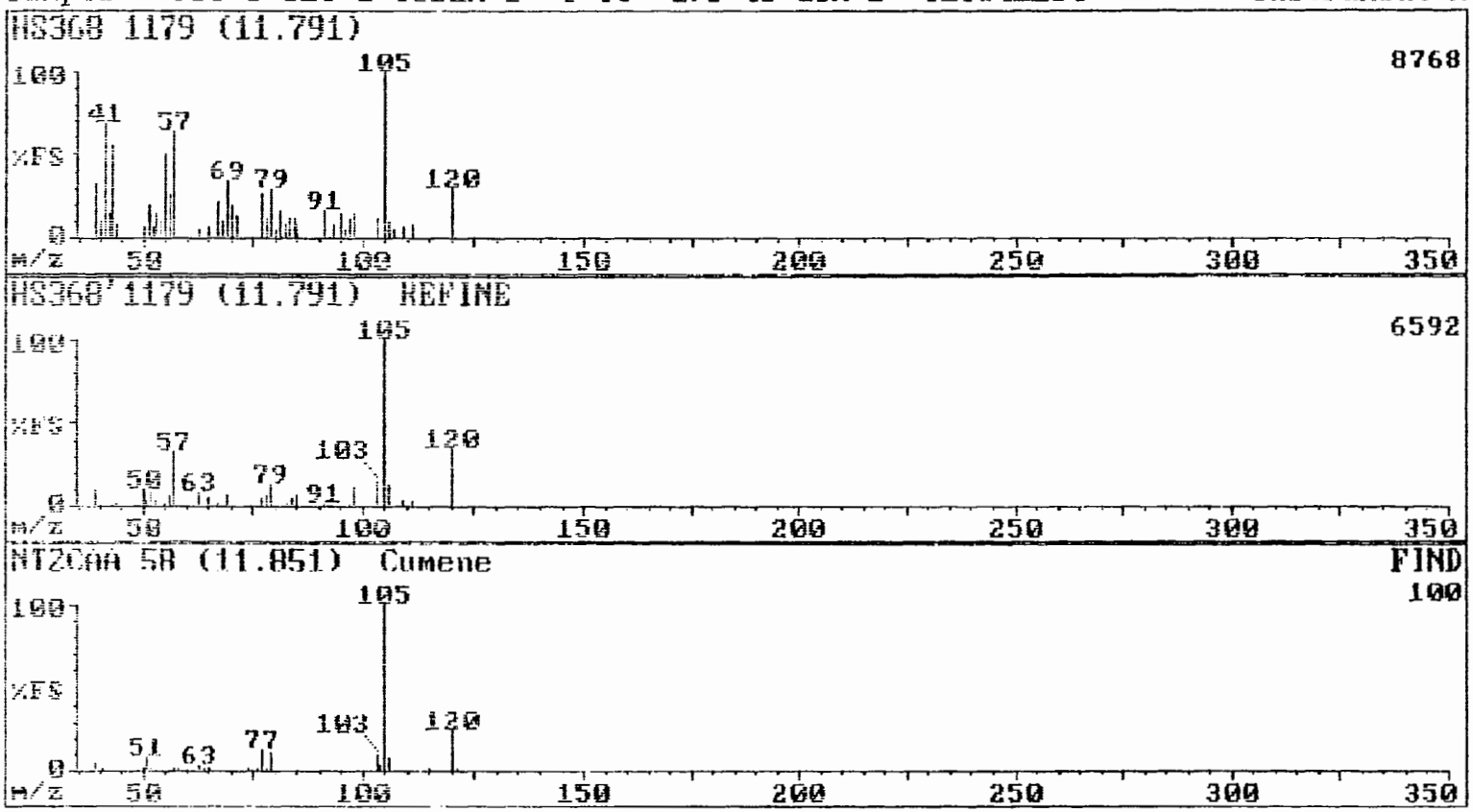
07-09-97 14:39 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 1 TUBEA/B T/TC 173-46-10A/B TLI#42284 Instrument H



07-09-97 14:39 Triangle Laboratories of RTP, Inc. (919) 544-5729

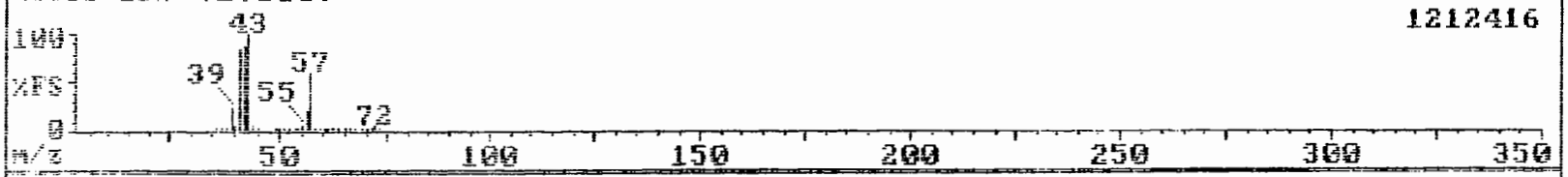
Sample: VOST-3 SET 1 TUBEA/B T/TC 173-46-10A/B TL1#42284 Instrument H



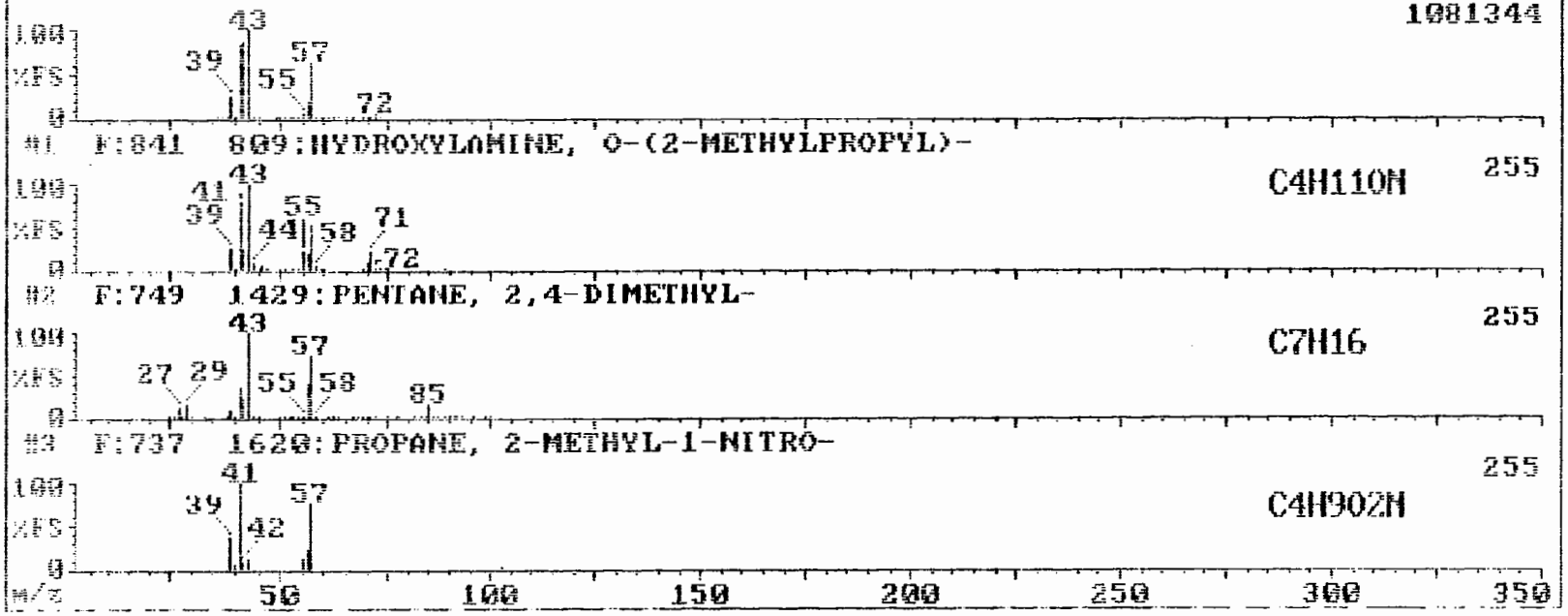
07/09/97 14:39 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 1 TUBEA/B T/TC 173-46-10A/B TLI#42284 Instrument: H

HS368 153 (1.530) NBS 1212416

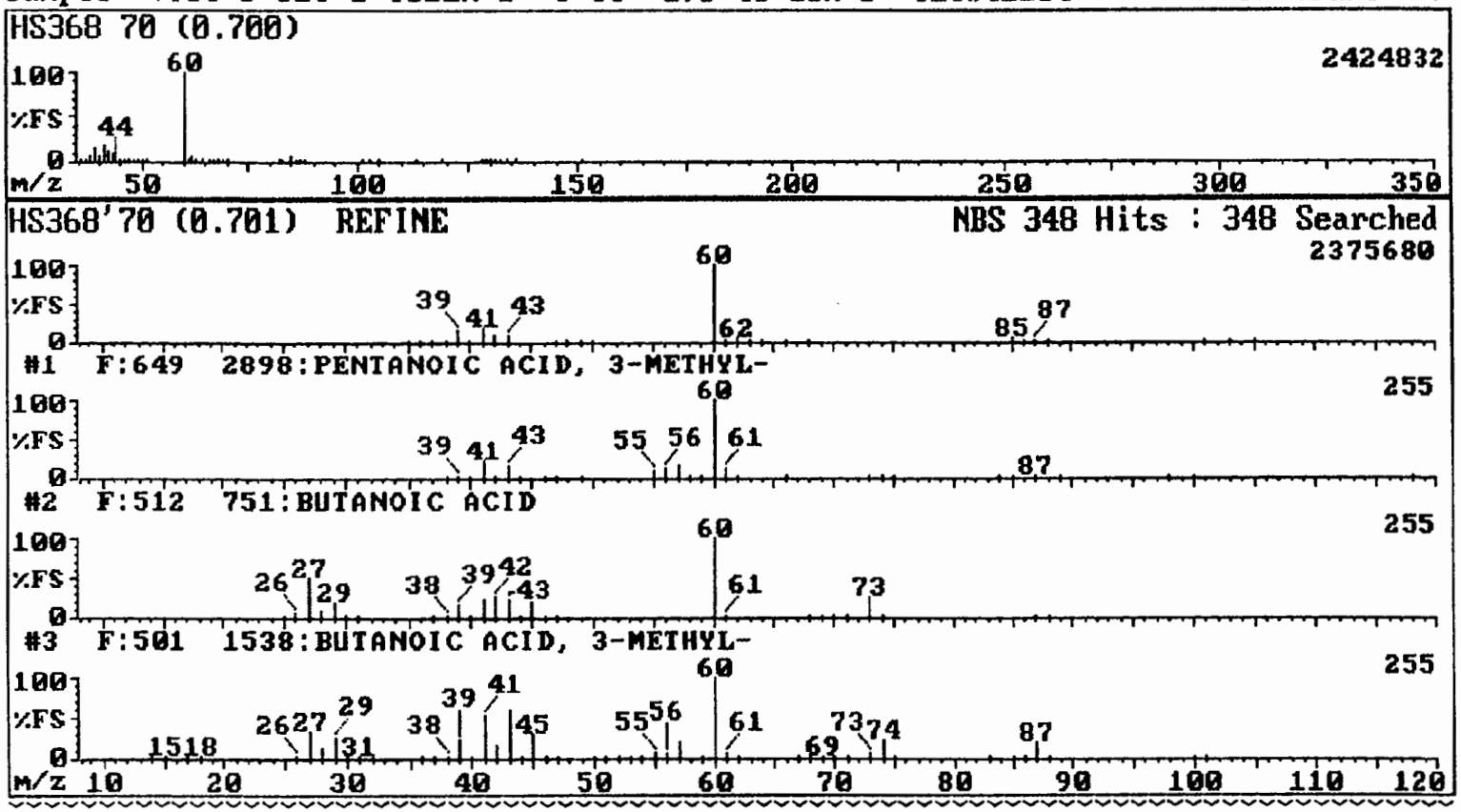


HS368'153 (1.531) REFINE NBS 242 Hits : 242 Searched 1081344



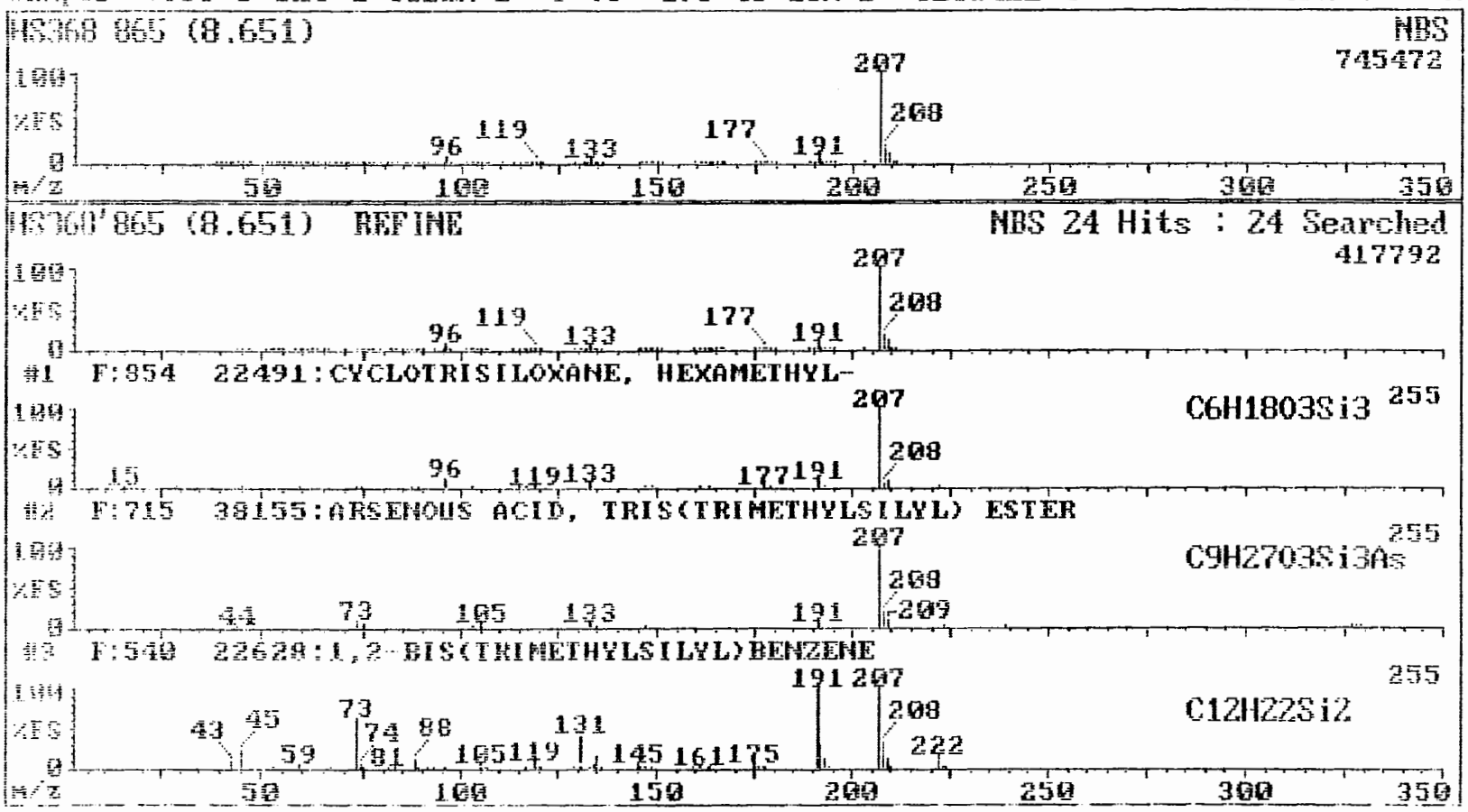
09-Jul-97 14:39 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 1 TUBEA/B T/TC 173-46-10A/B TLI#42284 Instrument H



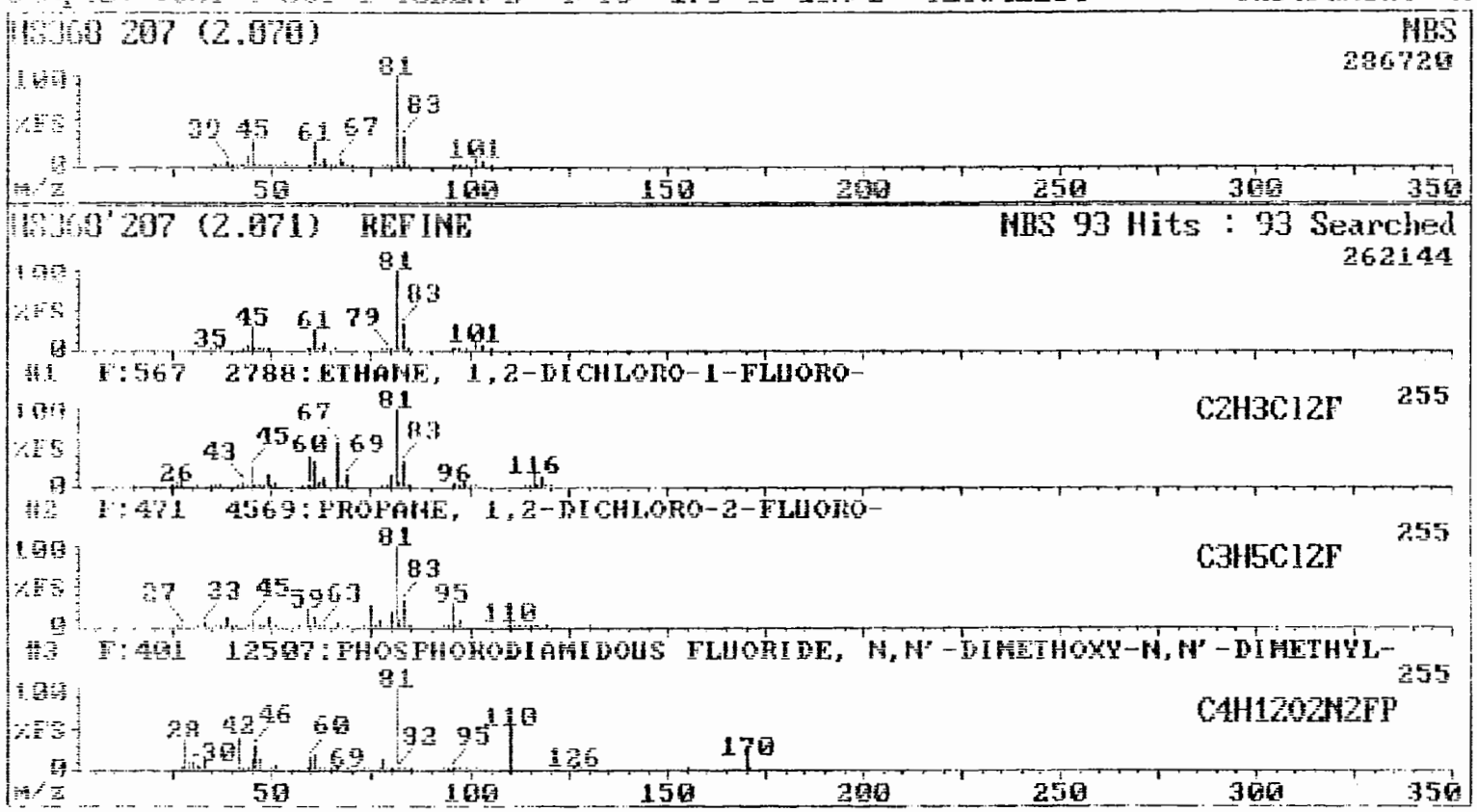
07/09/97 14:39 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 1 TUDEA/B T/TC 173-46-10A/B TLI#42284 Instrument: H



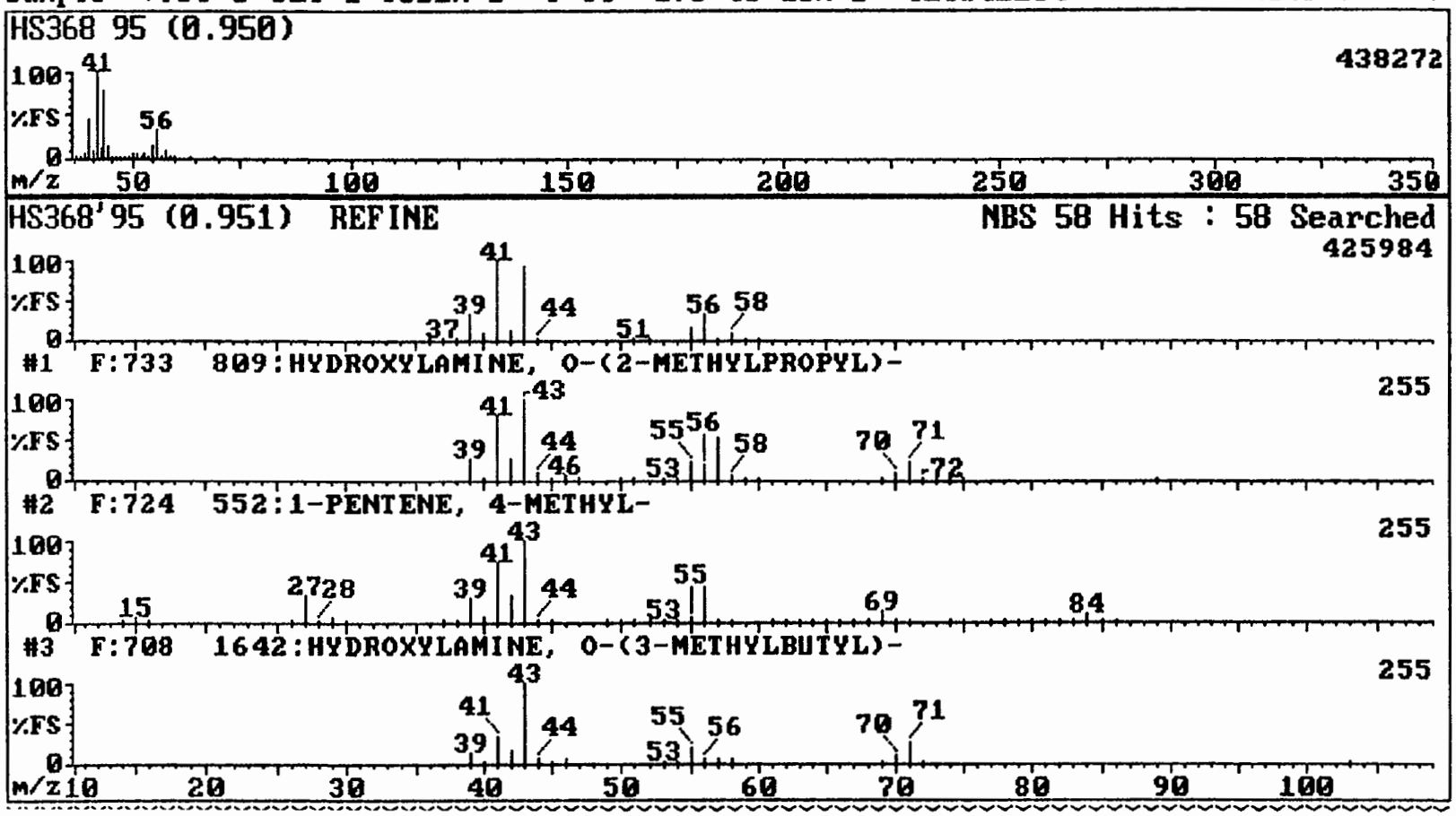
07/09/97 14:39 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 1 TUBEA/B T/TC 173-46-10A/B TLI#42284 Instrument: H



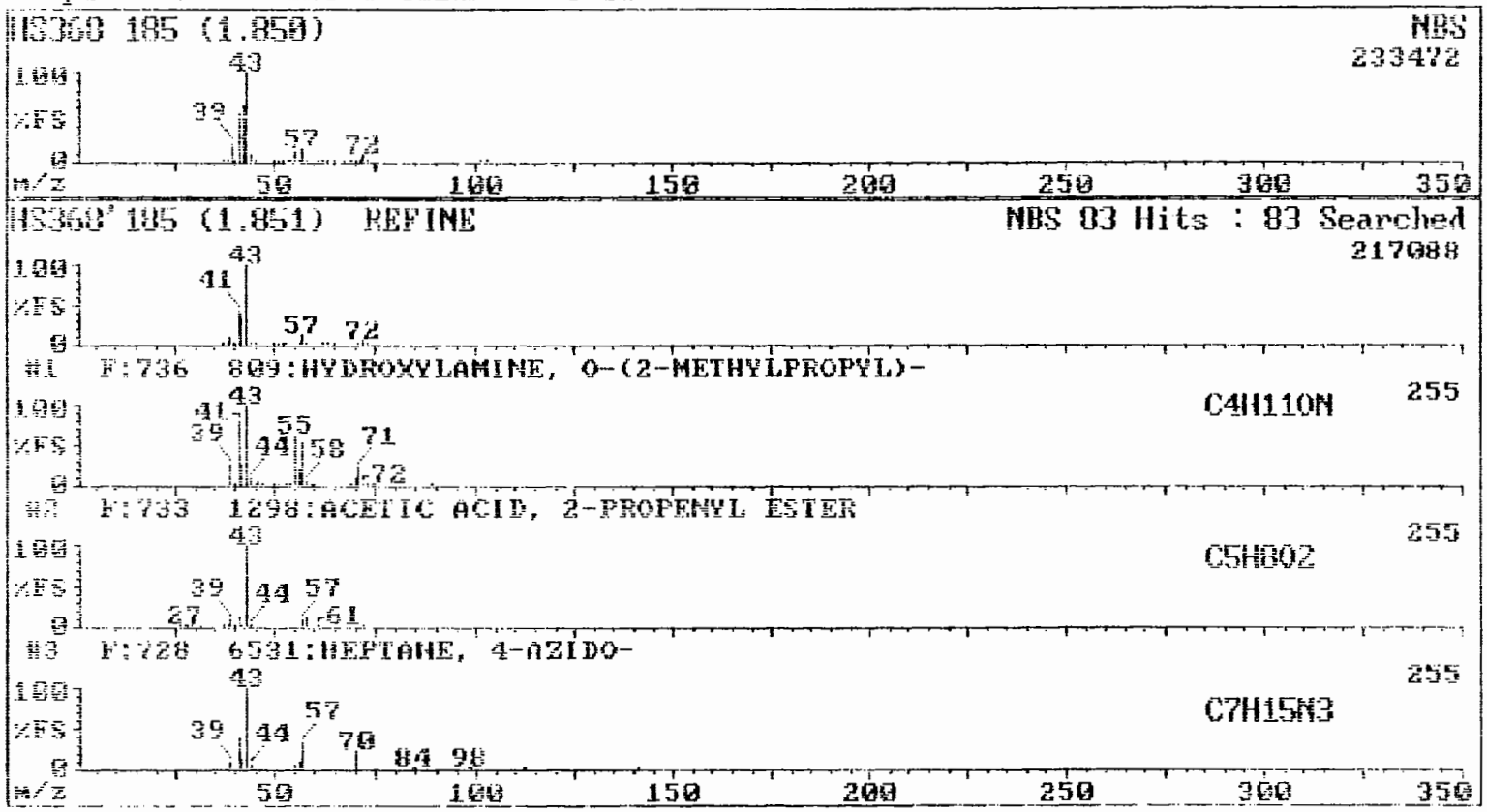
09-Jul-97 14:39 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 1 TUBEA/B T/TC 173-46-10A/B TLI#42284 Instrument H



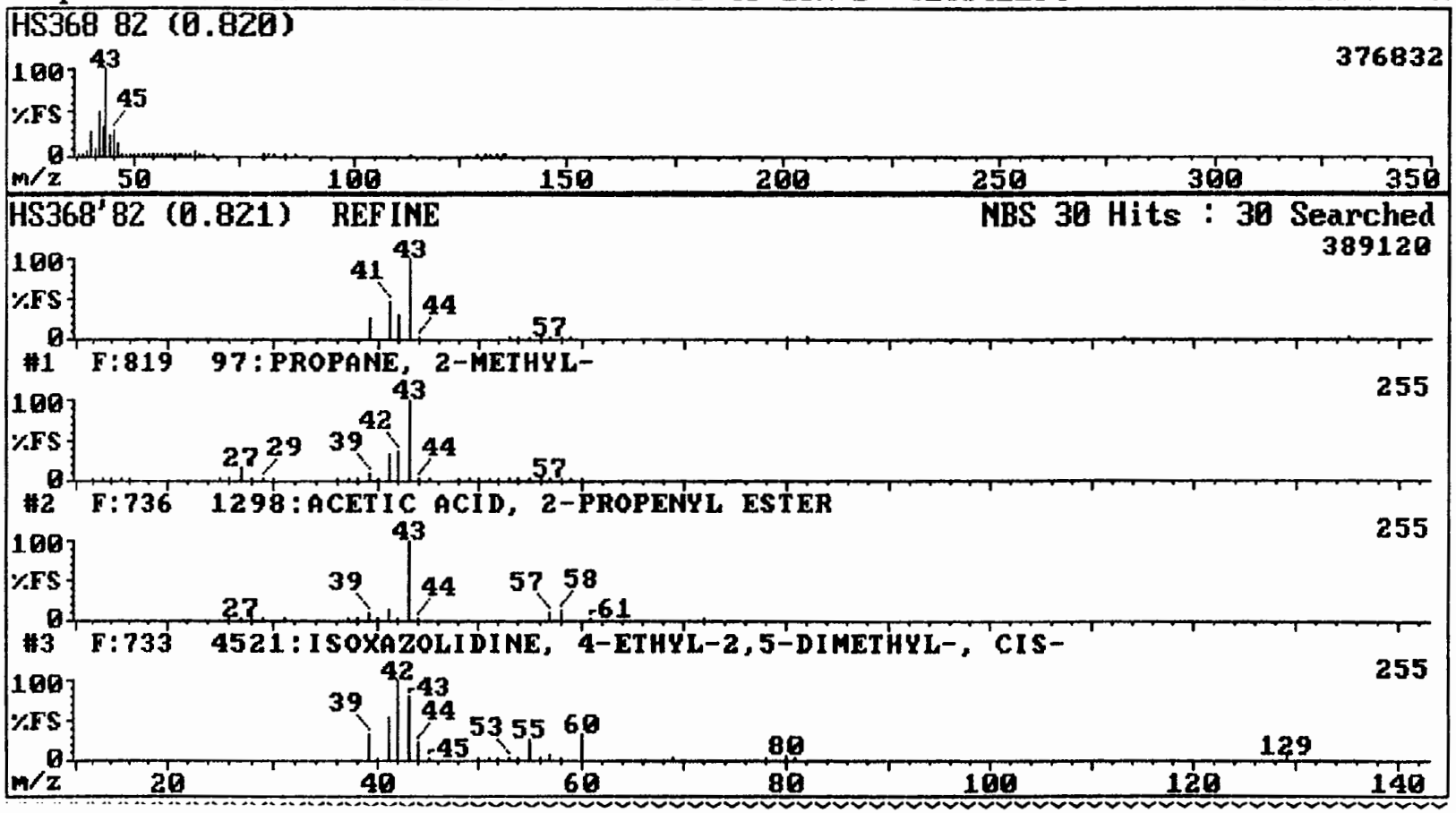
07/09/97 14:39 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 1 TUBEA/B T/TC 173-46-10A/B TLI#42284 Instrument: H



09-Jul-97 14:39 Triangle Laboratories of RTP, Inc. (919) 544-5729

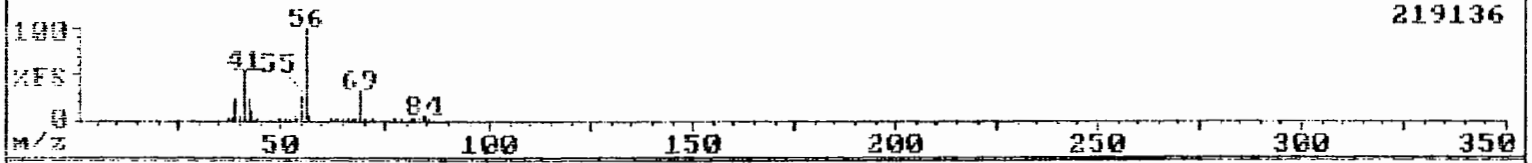
Sample: VOST-3 SET 1 TUBEA/B T/TC 173-46-10A/B TLI#42284 Instrument H



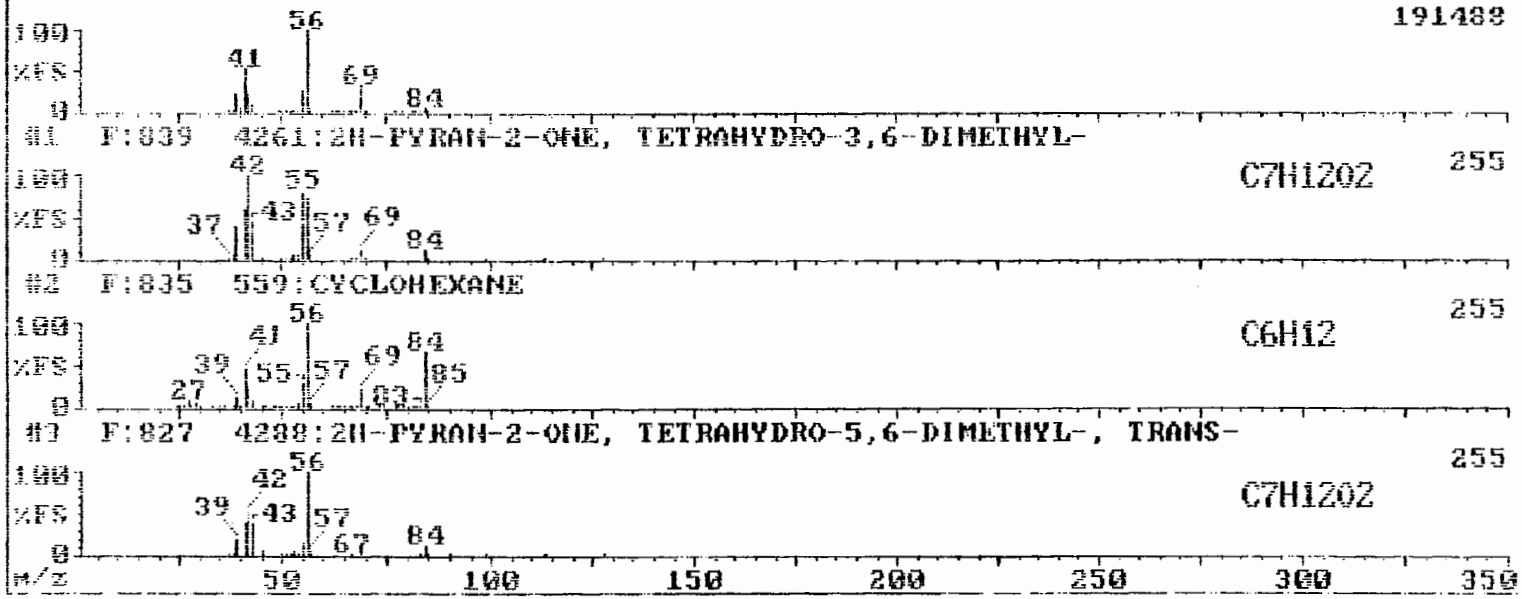
07/09/97 14:39 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 1 TUBEA/B T/TC 173-46-10A/B TLI#42284 Instrument: H

HS360 405 (4.050) NBS 219136



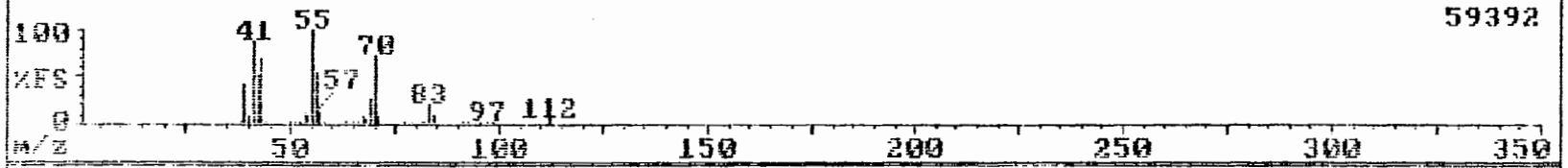
HS360'405 (4.051) REFINE NBS 61 Hits : 61 Searched 191488



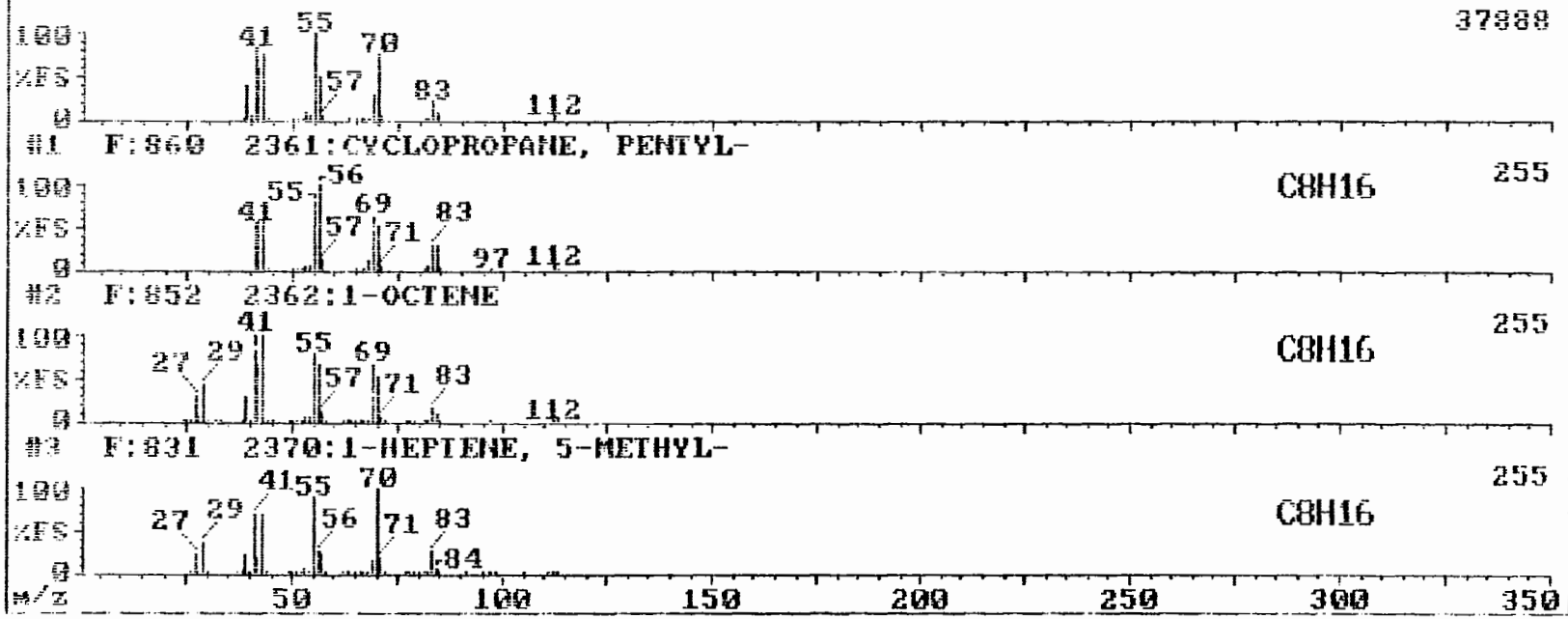
07/09/97 14:39 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 1 TUBEA/B T/TC 173-46-10A/B TLI#42284 Instrument: H

MS368 778 (7.781) NBS 59392

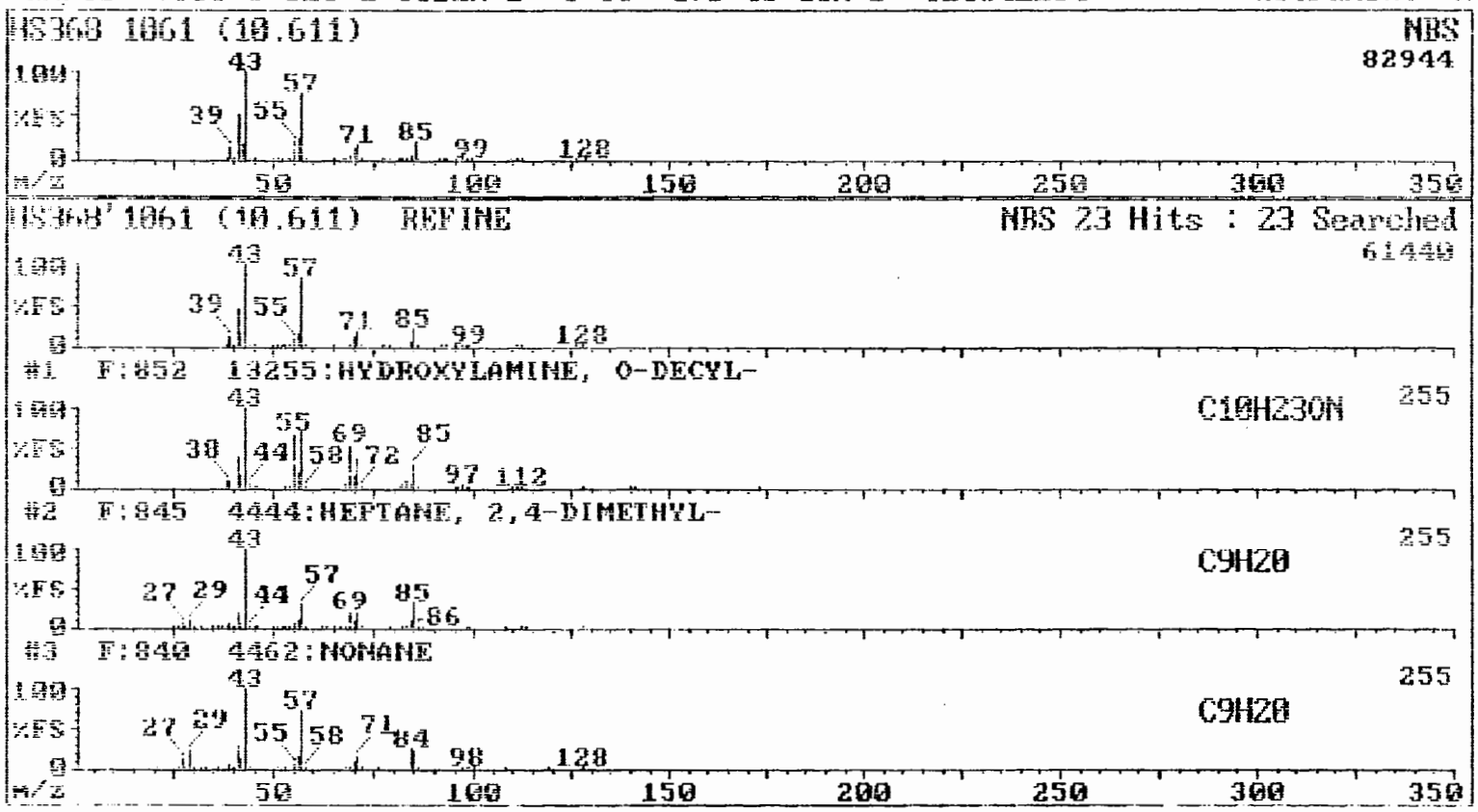


MS368'778 (7.781) REFINE NBS 112 Hits : 112 Searched 37888



07/09/97 14:39 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 1 TUBEA/B T/TC 173-46-10A/B TLI#42284 Instrument: H



Pacific Environmental Services

Project Number: 42284 | **Method 8240A VOST**
Sample File: HS369 | **Sample ID: VOST-3 SET 2 TUBEA/B T/TC**

Client Project: S407-003 | **Date Received: 06/30/97** | **Response File: ICALH708**
TLI ID: 173-46-11A,B
Date Analyzed : 07/09/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
Bromochloromethane		IS 1	4.48		
Chloromethane	0.232		0.93		0.05
Vinyl Chloride		U		0.001	0.05
1,3-Butadiene	0.195		1.08		0.05
Bromomethane	0.015	J	1.41		0.05
Chloroethane	0.013	J	1.53		0.05
Vinyl bromide		U		0.001	0.05
Trichlorofluoromethane	0.048	J	1.82		0.05
1,1-Dichloroethene		U		0.001	0.05
Iodomethane		U		0.001	0.05
Carbon disulfide	0.446		2.48		0.05
Acetone	0.095	B	2.56		0.05
Allyl chloride		U		0.001	0.05
Methylene chloride	0.979	B	2.95		0.05
trans-1,2-Dichloroethene		U		0.001	0.05
tert-Butyl methyl ether		U		0.001	0.05
Acrylonitrile	0.665		3.24		0.05
n-Hexane	0.492		3.54		0.05
1,1-Dichloroethane		U		0.001	0.05
1,2-Epoxybutane		U		0.003	0.05
cis-1,2-Dichloroethene		U		0.001	0.05
Chloroform		U		0.001	0.05
1,2-Dichloroethane		U		0.001	0.05
Isooctane	0.021	J	5.27		0.05
1,4-Difluorobenzene		IS 2	5.63		
Vinyl acetate		U		0.001	0.05

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

Pacific Environmental Services

Project Number: 42284 | Method 8240A VOST
Sample File: HS369 | Sample ID: VOST-3 SET 2 TUBEA/B T/TC

Client Project: S407-003 | Date Received: 06/30/97 | Response File: ICALH708
TLI ID: 173-46-11A,B
Date Analyzed : 07/09/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
2-Butanone	0.014	J	4.36		0.05
1,1,1-Trichloroethane		U		0.001	0.05
Carbon tetrachloride	0.003	J	4.89		0.05
Benzene	0.637	B	5.10		0.05
Trichloroethene		U		0.001	0.05
1,2-Dichloropropane		U		0.001	0.05
Ethyl acrylate		U		0.001	0.05
Methyl methacrylate		U		0.001	0.05
Bromodichloromethane		U		0.001	0.05
cis-1,3-Dichloropropene		U		0.001	0.05
trans-1,3-Dichloropropene		U		0.001	0.05
1,1,2-Trichloroethane		U		0.001	0.05
Dibromochloromethane		U		0.001	0.05
Ethylene dibromide		U		0.001	0.05
Bromoform		U		0.001	0.05
Chlorobenzene-d_5		IS 3	9.75		
4-Methyl-2-pentanone		U		0.001	0.05
Toluene	0.269	B	7.56		0.05
Tetrachloroethene		U		0.001	0.05
2-Hexanone		U		0.001	0.05
Chlorobenzene	0.008	J	9.79		0.05
Ethylbenzene	0.043	J	10.08		0.05
m-/p-Xylene	0.137		10.31		0.10
o-Xylene	0.043	J	11.02		0.05
Styrene	0.103		11.07		0.05
1,1,2,2-Tetrachloroethane		U		0.001	0.05

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

Triangle Laboratories of RTP, Inc.
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Savar v3.5
Printed: 22:11 07/25/1997

Pacific Environmental Services

Project Number: 42284
Sample File: HS369

Method 8240A VOST
Sample ID: VOST-3 SET 2 TUBEA/B T/TC

Client Project: S407-003
TLI ID: 173-46-11A,B

Date Received: 06/30/97
Date Analyzed : 07/09/97

Response File: ICALH708

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
Cumene	0.003	J	11.79		0.05

Surrogate Summary	Amount (ug)	RT	IS Ref	%REC
1,2-Dichloroethane-d_4	0.239	5.08	1	96
Benzene-d_6	0.267	5.06	2	107
Toluene-d_8	0.277	7.47	3	111

Reviewed by TW Date 7/25/97

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit

IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

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Savar v3.5
Printed: 22:11 07/25/1997

Pacific Environmental Services

Project Number: 42284 Method 8240A

Sample File: HS369 Sample ID: VOST-3 SET 2 TUBEA/B T/TC

Client Project:	S407-003	Date Received:	06/30/97
TLI ID:	173-46-11A,B	Date Analyzed:	07/09/97
	Dilution Factor:	1.00	

Tentatively Identified Compounds

Name	RT	Area	IS RT	IS Area	Amount, ug
Unknown	0.711	41822764	4.491	8847156	1.182
Methylbutane Isomer	1.620	15802291	4.491	8847156	0.447
C4H8 isomer	1.021	10609605	4.491	8847156	0.300
Hexamethylcyclotrisiloxane	8.651	12783530	9.751	11001446	0.290
Pentane	1.930	8181850	4.491	8847156	0.231
C6H12 Isomer	3.451	7696993	4.491	8847156	0.217
C9H18 isomer	10.481	7726296	9.751	11001446	0.176
Octane	7.791	6865834	9.751	11001446	0.156
C5H8 Isomer	2.170	5091624	4.491	8847156	0.144
Methyl Propane Isomer	0.861	5027924	4.491	8847156	0.142

Triangle Laboratories, Inc.
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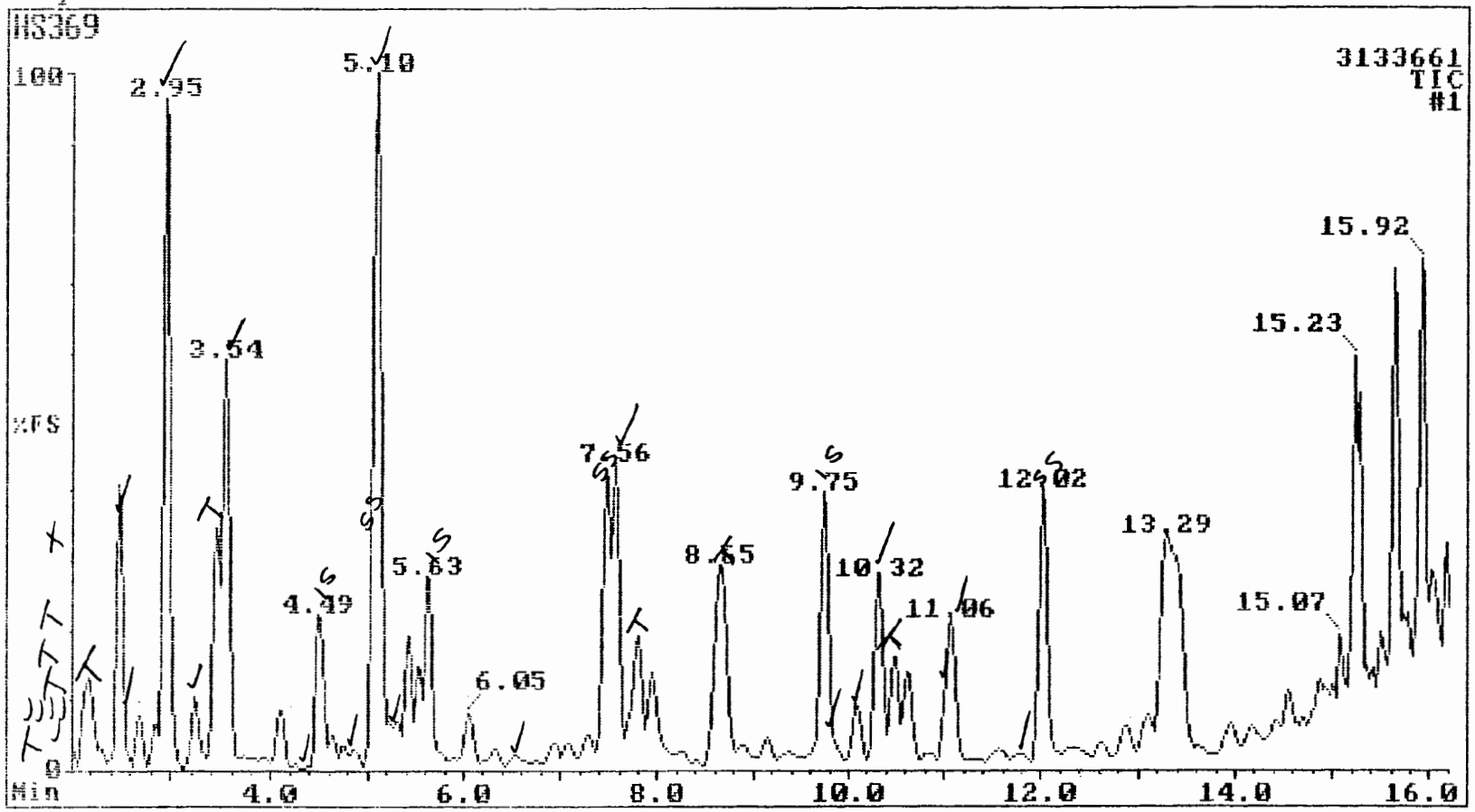
07-09-97 15:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 2 TUBEA/B T/TC 173-46-11A/B TLI#42284 Instrument H



Data Review: TW
Date: 7-20-97

QUAN : HS369 LAB-BASE QUAN 07-09-97 1:1:8

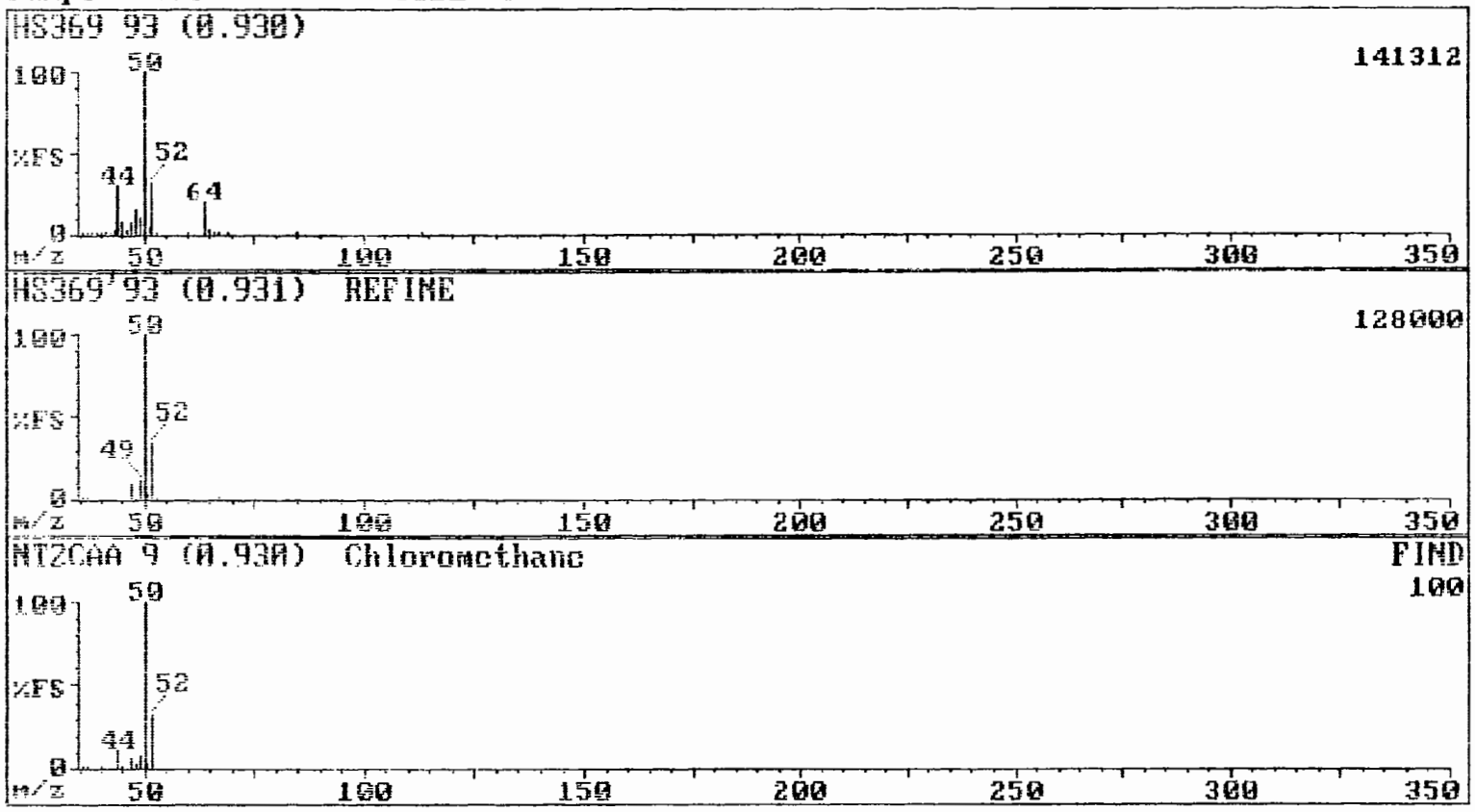
No.	MAT	FOR	REV	Delta	Area	P.Flags	RT	QM	Name
1	100	81	99	-3	372916	bb	4.48	123	Bromochloromethane
2	100	91	97	1	2178756	bb	5.63	114	1,4-Difluorobenzene
3	100	97	99	0	2902236	bv	9.75	117	Chlorobenzene-d5
4	60	23	73	1	959972	bv	5.08	65	1,2-Dichloroethane-d4
5	100	82	84	0	2693820	bv	5.06	84	Benzene-d6
6	100	90	99	0	3655164	bv	7.47	98	Toluene-d8
~~7~~	~~26~~	~~10~~	~~35~~	~~15~~	~~24104~~	~~A~~	~~12.34~~	98	o-Xylene-d10 FP TW
8	100	87	94	1	1874495	bv	12.02	95	4-Bromofluorobenzene
9	100	88	94	1	726960	vv	0.93	50	Chloromethane
~~10~~	~~12~~	~~14~~	~~24~~	~~33~~	~~1521576~~	~~vb~~	~~0.72~~	62	Vinyl Chloride FP TW
11	100	78	100	0	~~1930112 A~~ 768864		~~1.01~~ 1.08	39	1,3-Butadiene mi TW
12	89	49	93	0	49892	bv	1.41	94	Bromomethane
13	40	19	45	0	27708	bb	1.53	64	Chloroethane
14	0	0	0	0	0		0.00	106	Vinyl bromide
15	79	41	89	-1	205564	bb	1.82	101	Trichlorofluoromethane
16	0	0	0	0	0		0.00	96	1,1-Dichloroethene
17	0	0	0	0	0		0.00	142	Iodomethane
18	100	83	99	0	4201808	bv	2.48	76	Carbon disulfide
19	91	60	88	1	185020	vb	2.56	43	Acetone
~~20~~	~~57~~	~~44~~	~~65~~	~~0~~	~~9952~~	~~bb~~	~~2.81~~	76	Allyl chloride FP TW
21	100	84	96	0	2877008	bv	2.95	84	Methylene chloride
22	0	0	0	0	0		0.00	96	trans-1,2-Dichloroethene
~~23~~	~~71~~	~~53~~	~~60~~	~~1~~	~~9428~~	~~bb~~	~~3.30~~	73	tert-Butyl methyl ether FP TW
24	93	58	91	-1	427240	bv	3.24	53	Acrylonitrile
25	100	98	100	-1	3432150	vv	3.54	57	n-Hexane
26	0	0	0	0	0		0.00	63	1,1-Dichloroethane
~~27~~	~~56~~	~~45~~	~~35~~	~~7~~	~~156681~~	~~bv~~	~~4.09~~	42	1,2-Epoxybutane FP TW
28	0	0	0	0	0		0.00	96	cis-1,2-Dichloroethene
29	0	0	0	0	0		0.00	83	Chloroform
30	0	0	0	0	0		0.00	62	1,2-Dichloroethane
31	94	64	88	1	504796	bv	5.27	57	Isooctane
~~32~~	~~34~~	~~31~~	~~62~~	~~28~~	~~3146544~~	~~vv~~	~~3.54~~	43	Vinyl acetate FP TW
33	72	47	68	0	5040	bb	4.36	72	2-Butanone
34	0	0	0	0	0		0.00	97	1,1,1-Trichloroethane
35	28	10	36	1	13156	bb	4.89	117	Carbon tetrachloride
36	100	91	99	0	7035416	bv	5.10	78	Benzene
~~37~~	~~39~~	~~11~~	~~51~~	~~0~~	~~6196~~	~~bb~~	~~5.87~~	130	Trichloroethene
~~38~~	~~33~~	~~13~~	~~42~~	~~2~~	~~6072~~	~~A~~	~~6.06~~	63	1,2-Dichloropropane
~~39~~	~~41~~	~~31~~	~~64~~	~~13~~	~~346350~~	~~vv~~	~~6.05~~	55	Ethyl acrylate FP TW
40	78	55	69	0	~~79464 A~~ 25032		~~6.32~~ 6.46	69	Methyl methacrylate mi TW
41	0	0	0	0	0		0.00	83	Bromodichloromethane
42	0	0	0	0	0		0.00	75	cis-1,3-Dichloropropene
43	0	0	0	0	0		0.00	75	trans-1,3-Dichloropropen
44	0	0	0	0	0		0.00	97	1,1,2-Trichloroethane
45	0	0	0	0	0		0.00	129	Dibromochloromethane
46	0	0	0	0	0		0.00	107	Ethylene dibromide
47	0	0	0	0	0		0.00	173	Bromoform
~~48~~	~~54~~	~~5~~	~~84~~	~~2~~	~~55032~~	~~A~~	~~7.48~~	43	4-Methyl-2-pentanone FP TW
49	100	94	99	0	2307512	bv	7.56	92	Toluene
50	0	0	0	0	0		0.00	164	Tetrachloroethene

Data Review: TW
Date: 7-20-97

No.	MAT	FOR	REV	Delta	Area	P.Flags	RT	QM	Name
~~51~~	~~43~~	~~21~~	~~61~~	~~-9~~	~~36000~~	~~vb~~	~~8.69~~	43	2-Hexanone FP TW
52	59	23	74	0	92376	bb	9.79	112	Chlorobenzene
53	100	85	98	0	255248	bv	10.08	106	Ethylbenzene
54	100	85	93	-1	1014528	vv	10.31	106	m-/p-Xylene
55	100	81	88	1	304704	bb	11.02	106	o-Xylene
56	100	88	95	1	1201888	bv	11.07	104	Styrene
~~57~~	~~27~~	~~5~~	~~44~~	~~-6~~	~~968~~	~~a~~	~~12.40~~	83	1,1,2,2-Tetrachloroe FP TW
58	59	30	65	0	81028	vv	11.79	105	Cumene

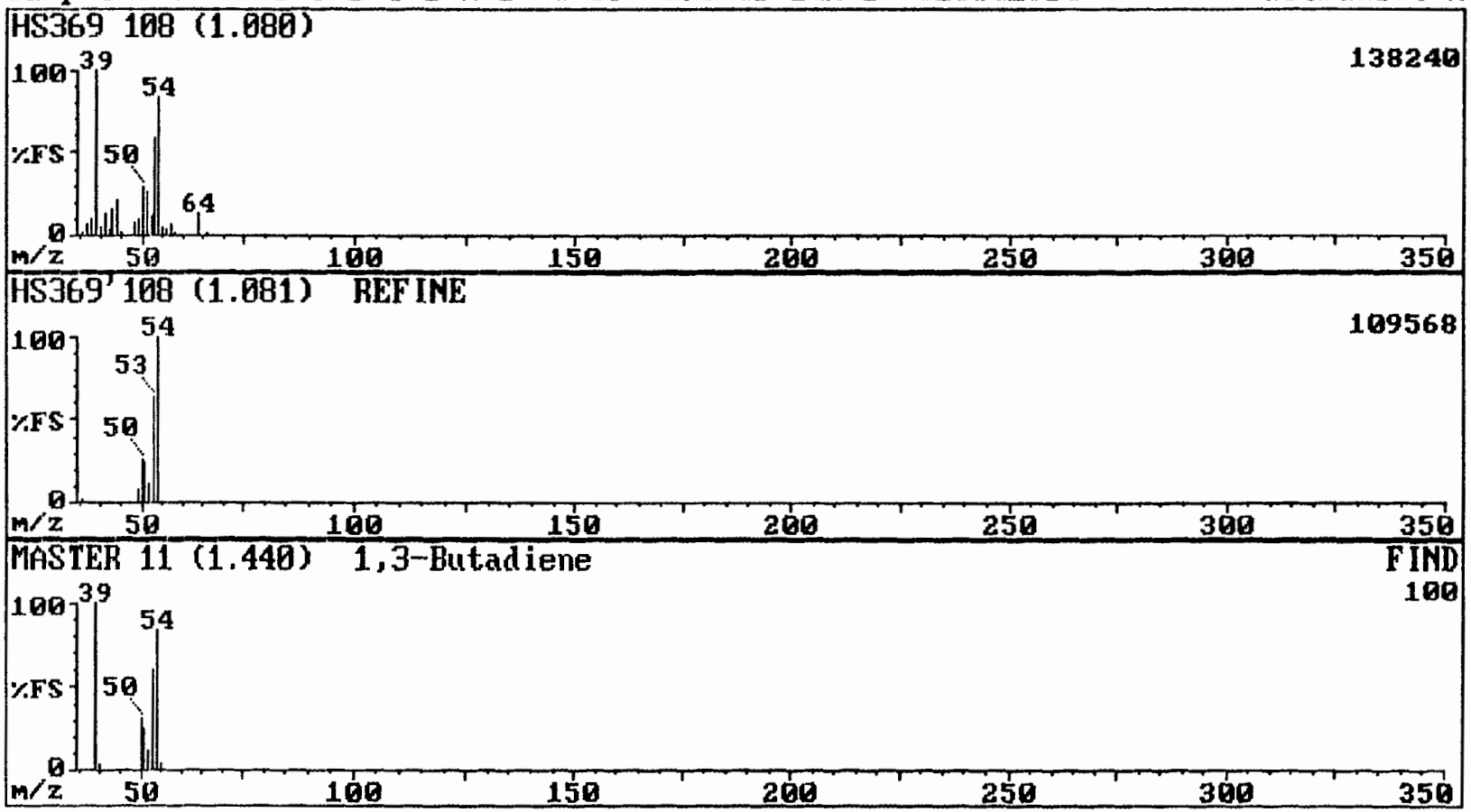
07-09-97 15:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 2 TUBEA/B T/TC 173-46-11A/B TLI#42284 Instrument H



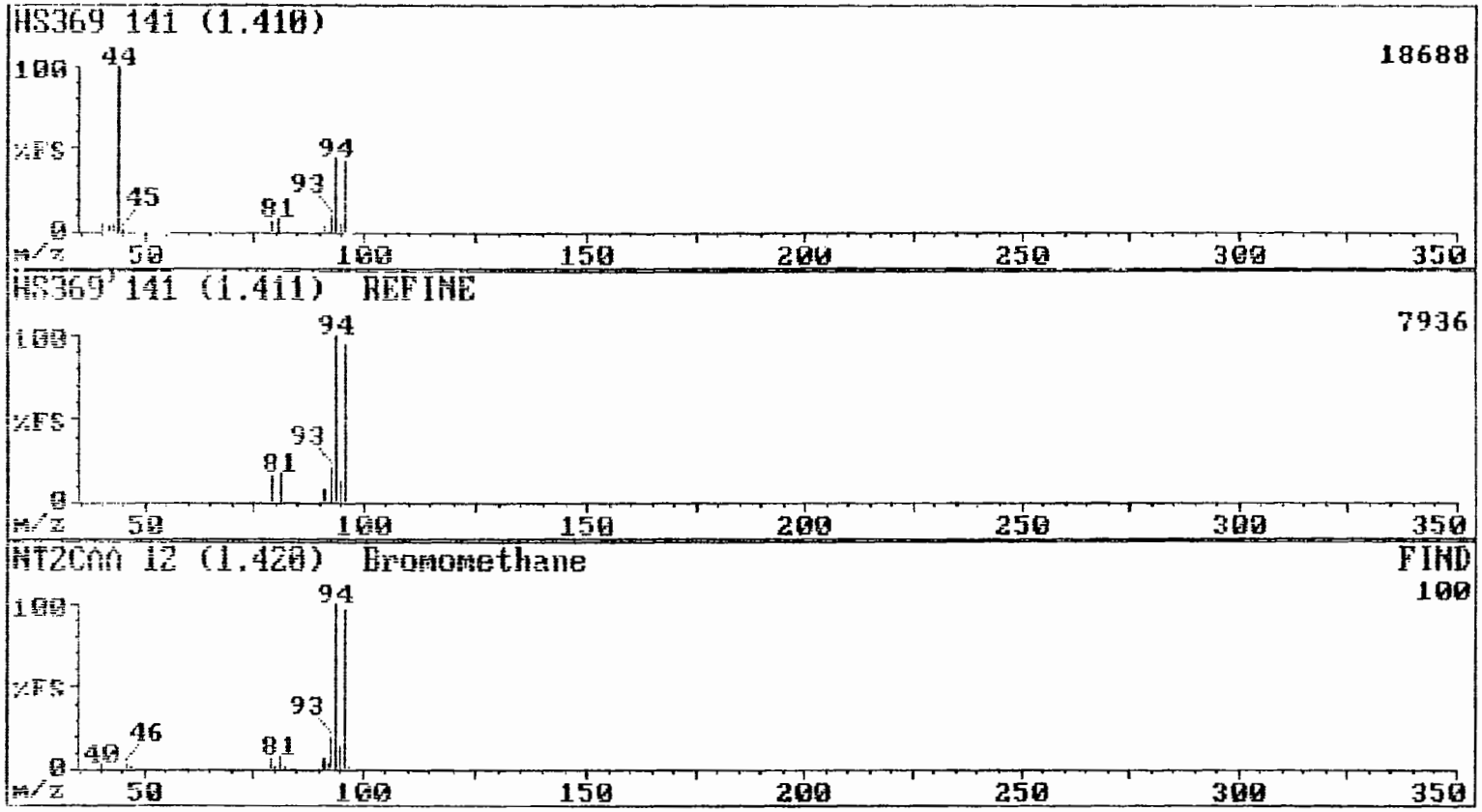
09-Jul-97 15:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 2 TUBEA/B T/TC 173-46-11A/B TLI#42284 Instrument H



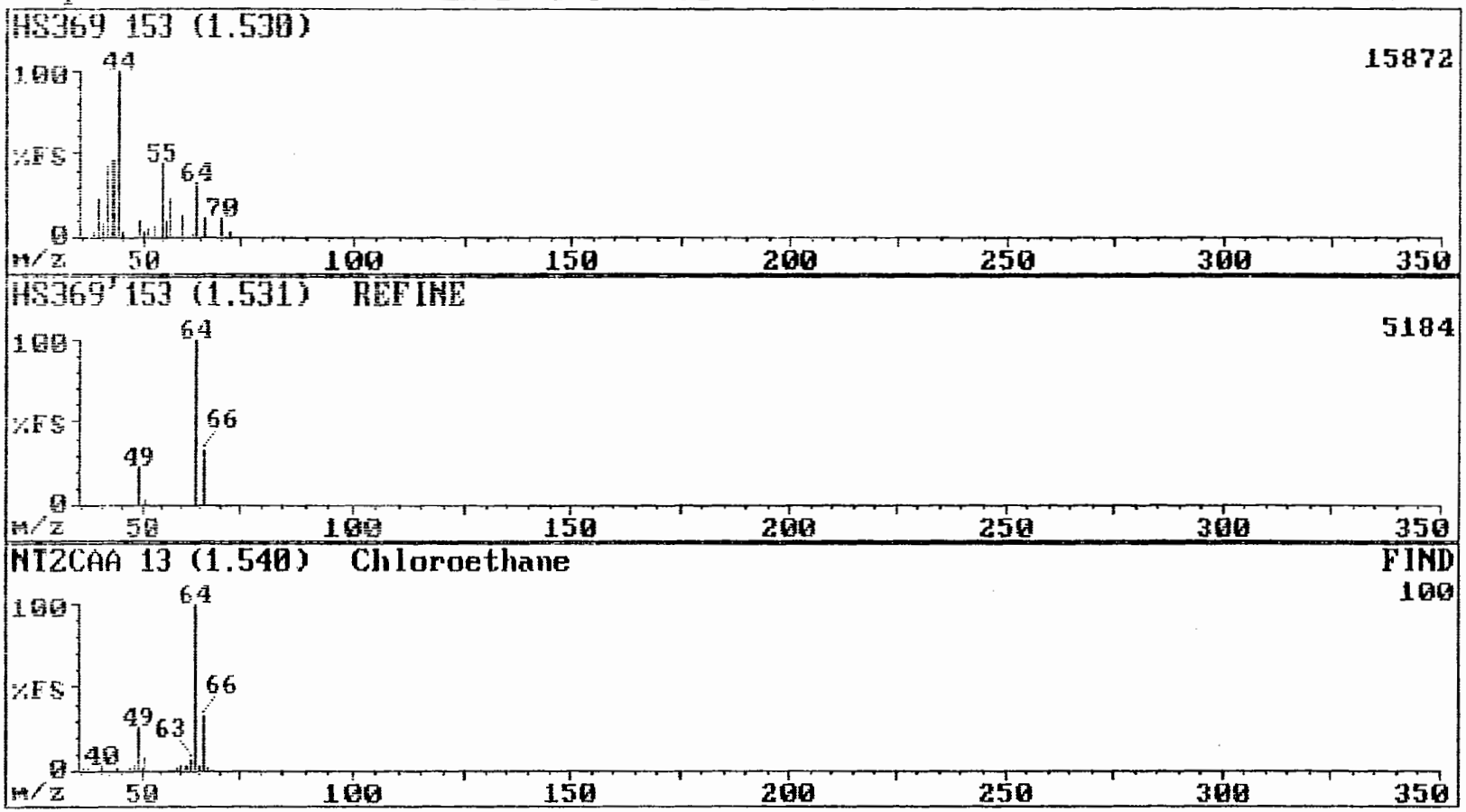
07-09-97 15:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 2 TUBEA/B T/TC 173-46-11A/B TLI#42284 Instrument H



07-09-97 15:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 2 TUBEA/B T/TC 173-46-11A/B TLI#42284 Instrument H



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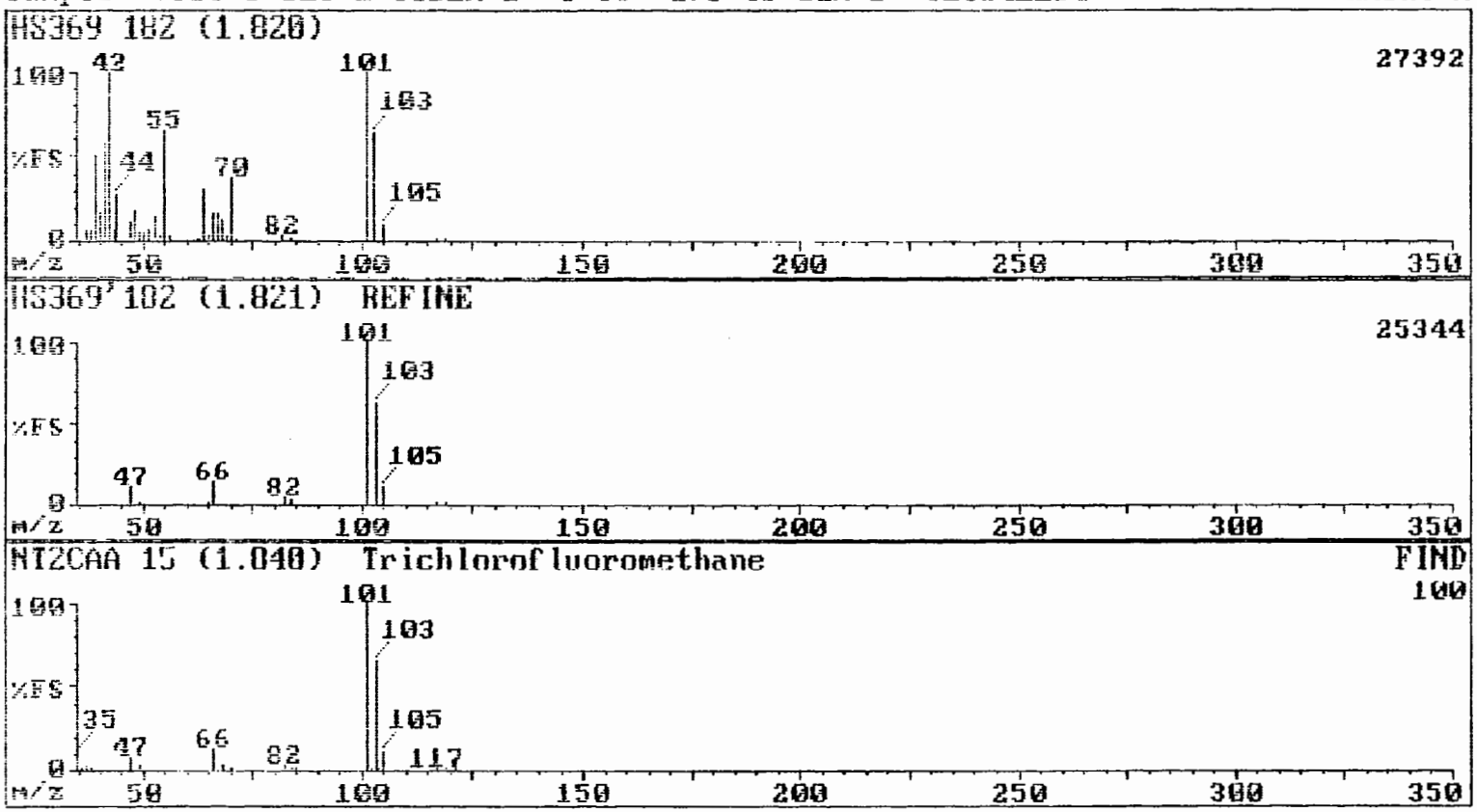
Sample: VOST-3 SET 2 TUBEA/B T/TC 173-46-11A/B TLI#42284 Instrument H



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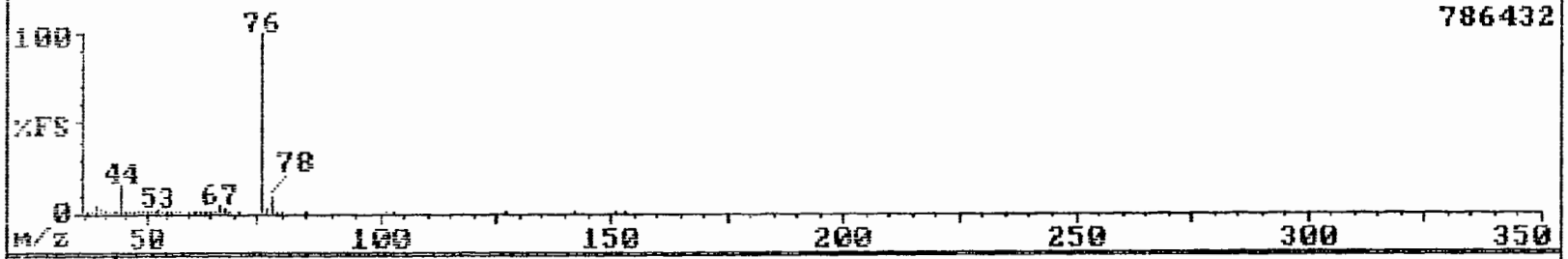
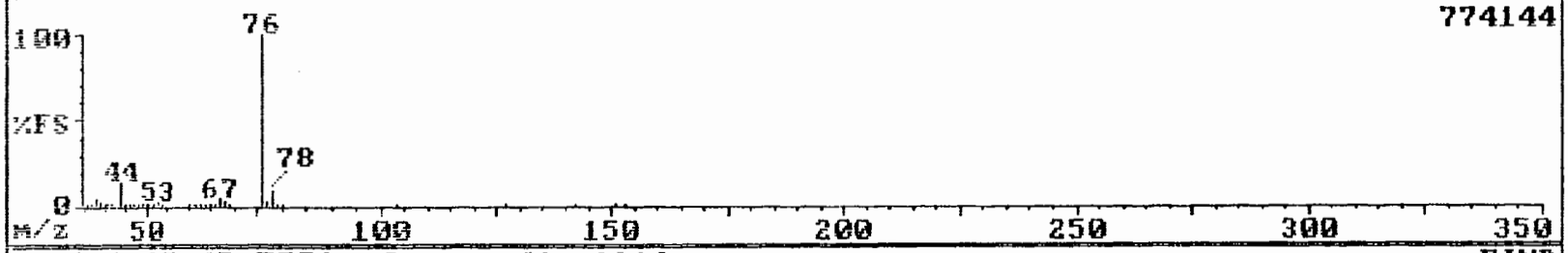
Sample: VOST-3 SET 2 TUBEA/B T/TC 173-46-11A/B TLI#42284 Instrument H

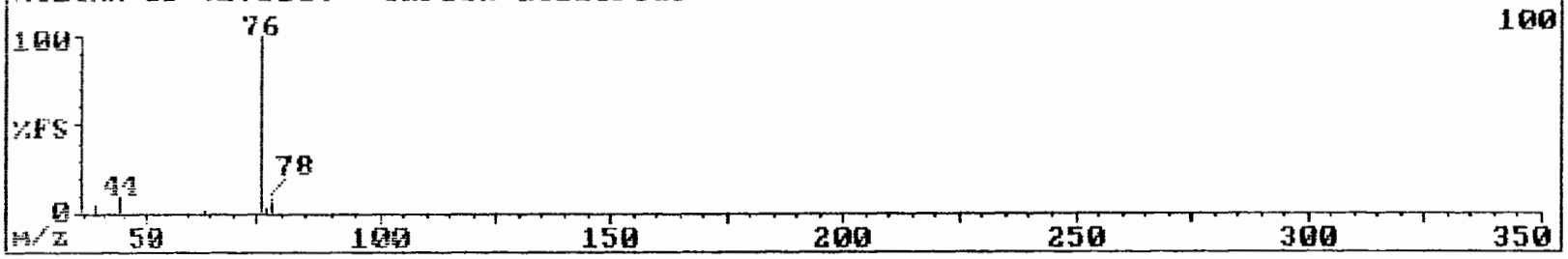
HS369 248 (2.480) 786432



HS369 248 (2.481) REFINE 774144

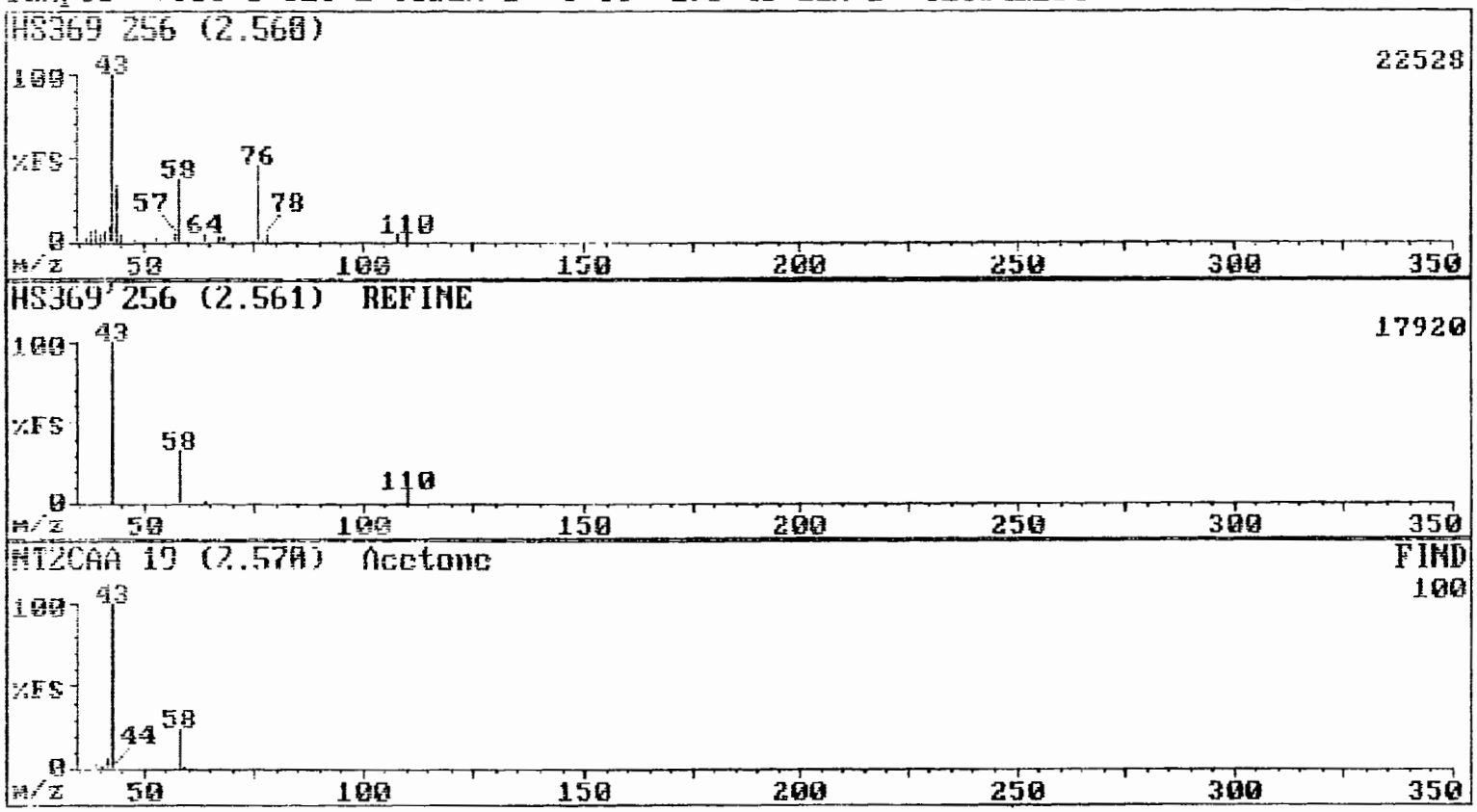


NTZCAA 18 (2.500) Carbon disulfide FIND 100



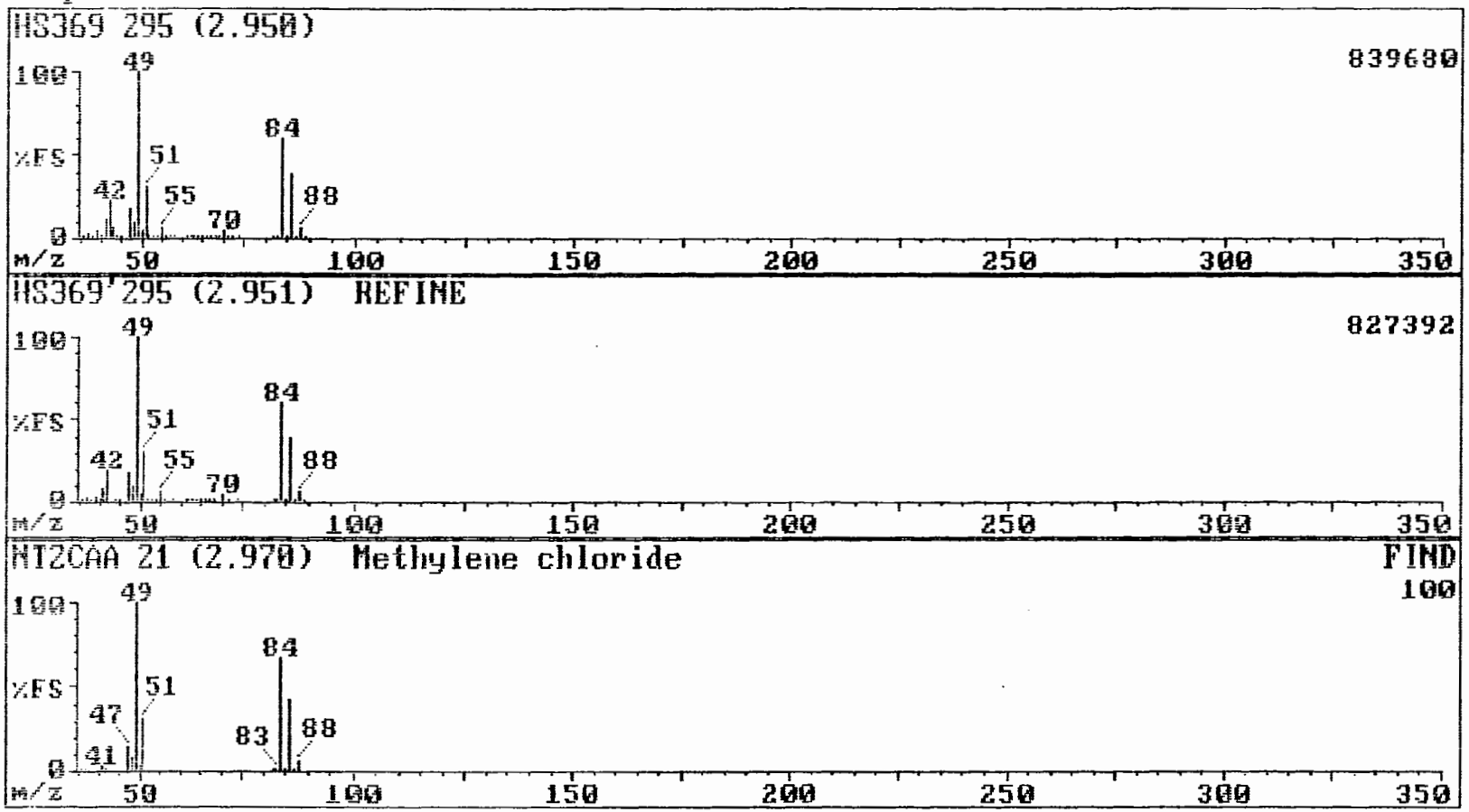
07-09-97 15:07 Triangle Laboratories of RTP, Inc. (919) 544 5729

Sample: VOST-3 SET 2 TUBEA/B T/TC 173-46-11A/B TLI#42284 Instrument H



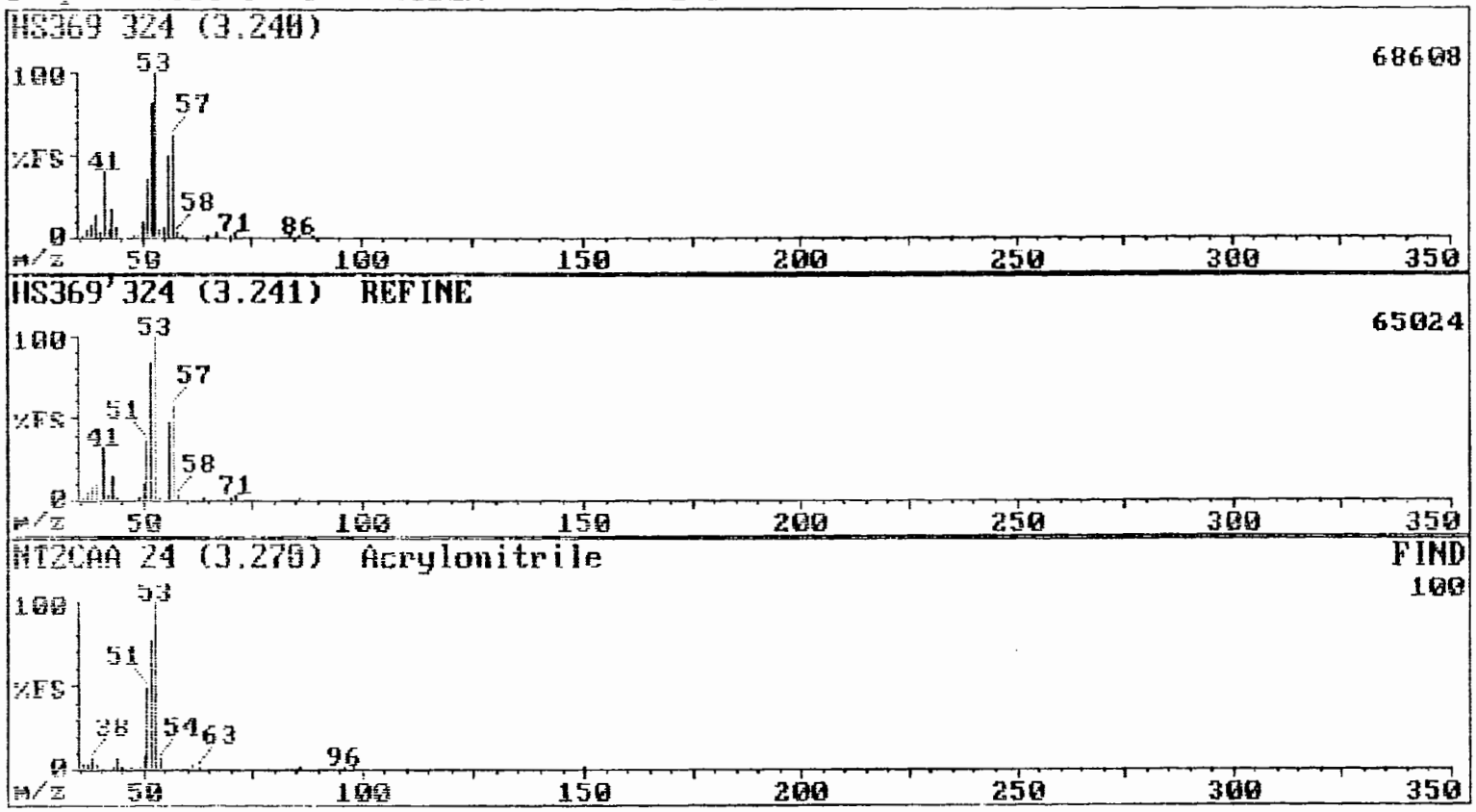
07-09-97 15:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 2 TUBEA/B T/TC 173-46-11A/B TLI#42284 Instrument H



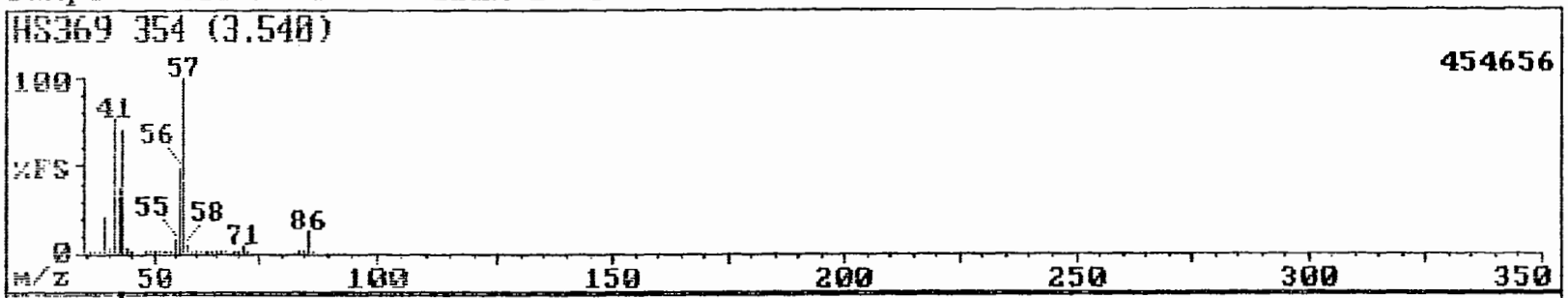
07-09-97 15:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

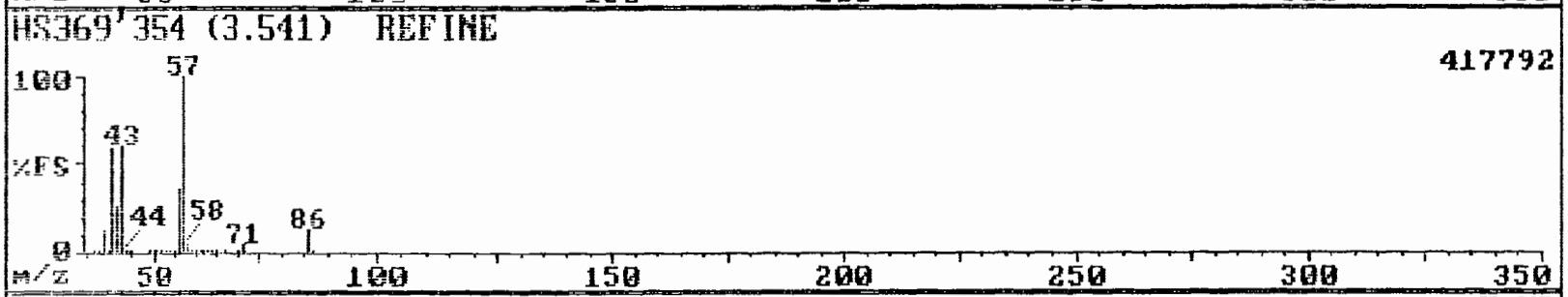
Sample: VOST-3 SET 2 TUBEA/B T/TC 173-46-11A/B TLI#42284 Instrument H

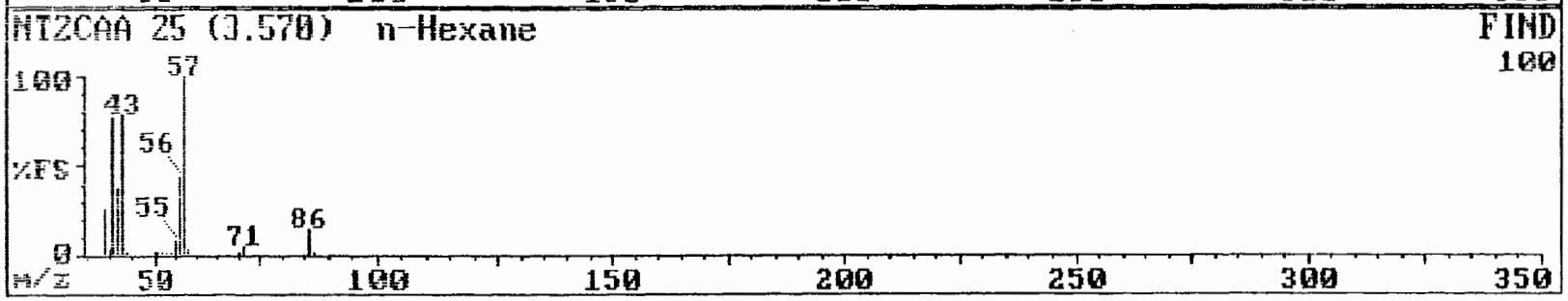


07-09-97 15:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 2 TUBEA/B T/TC 173-46-11A/B TLI#42284 Instrument H

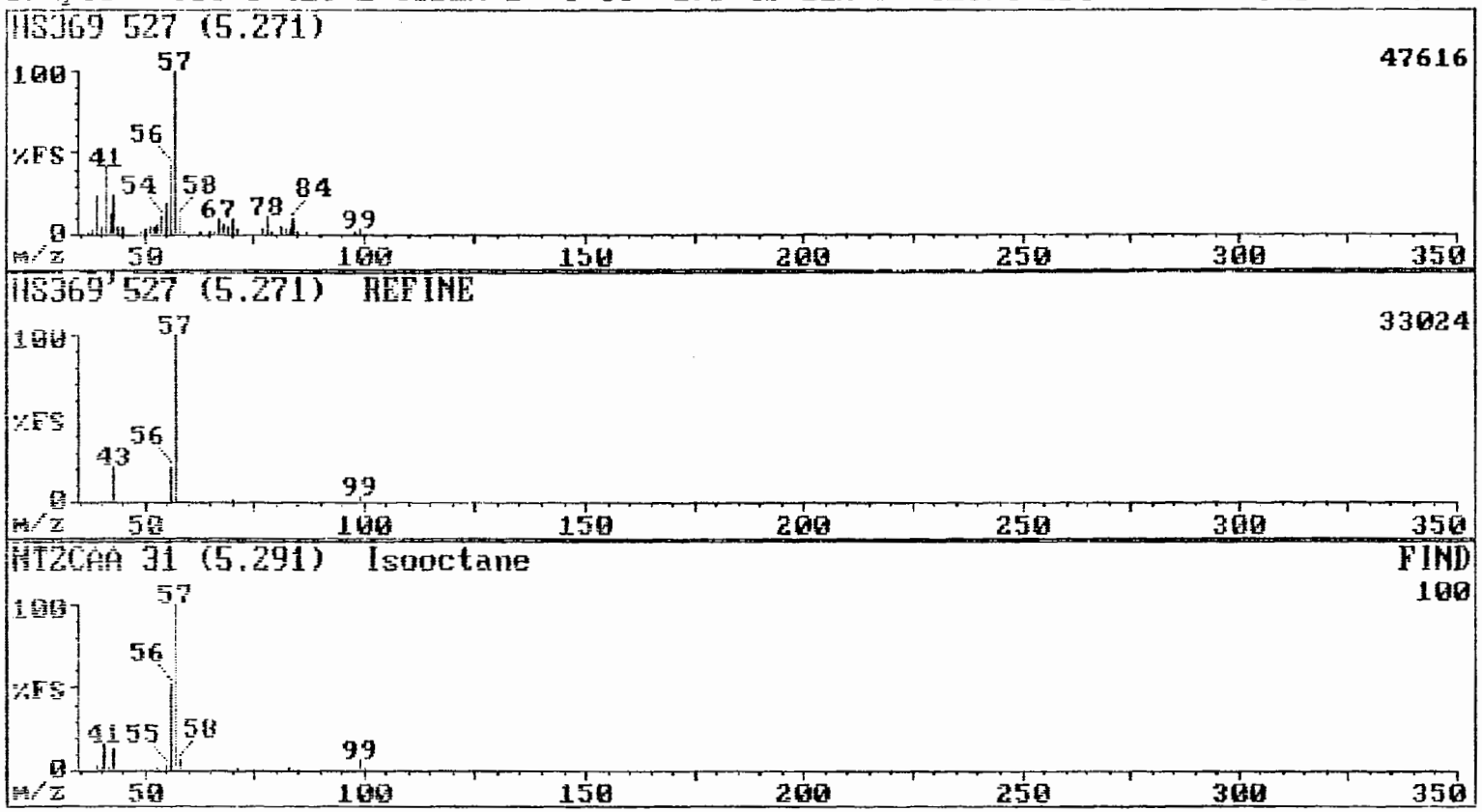






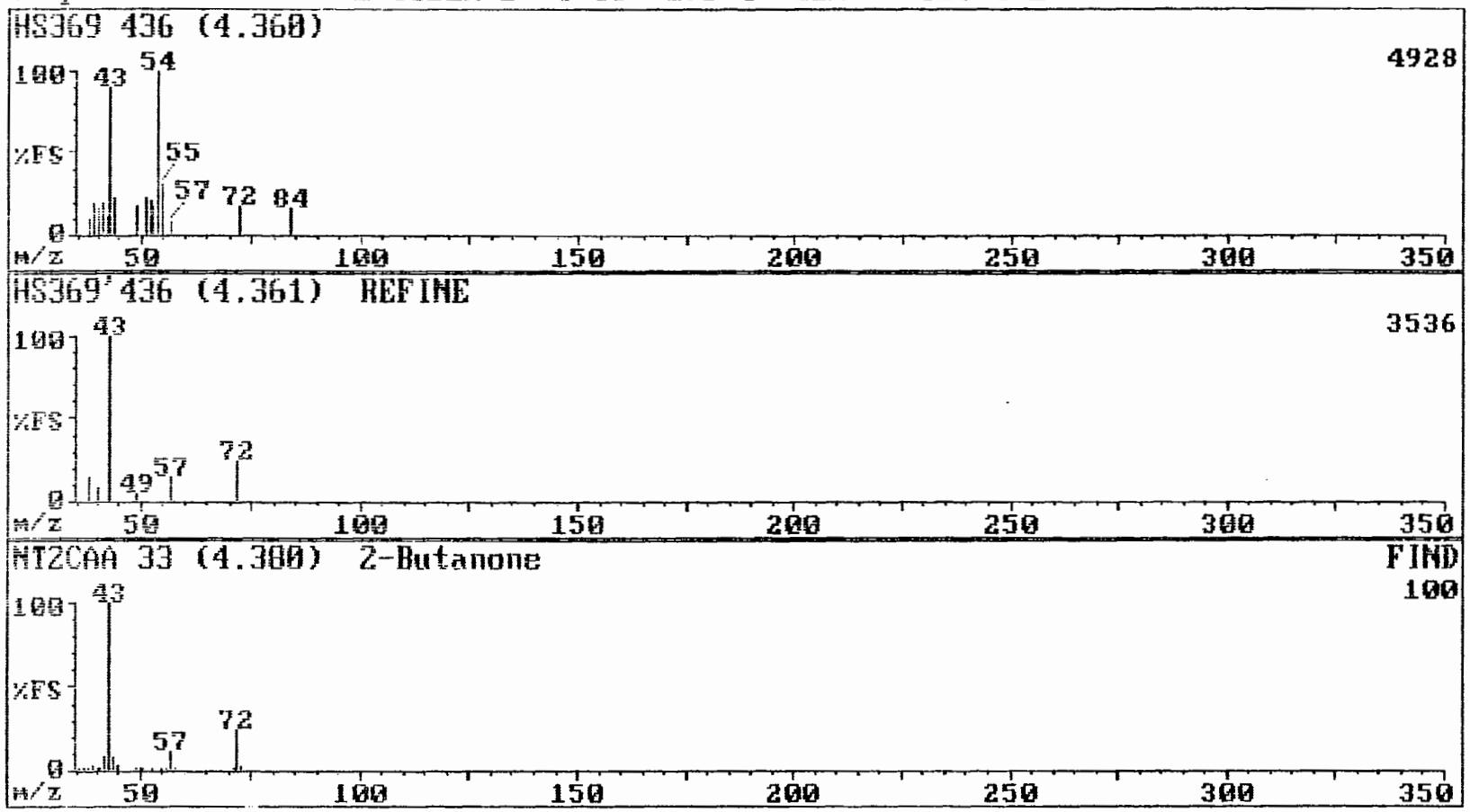
07-09-97 15:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 2 TUBEA/B T/TC 173-46-11A/B TLI#42284 Instrument H



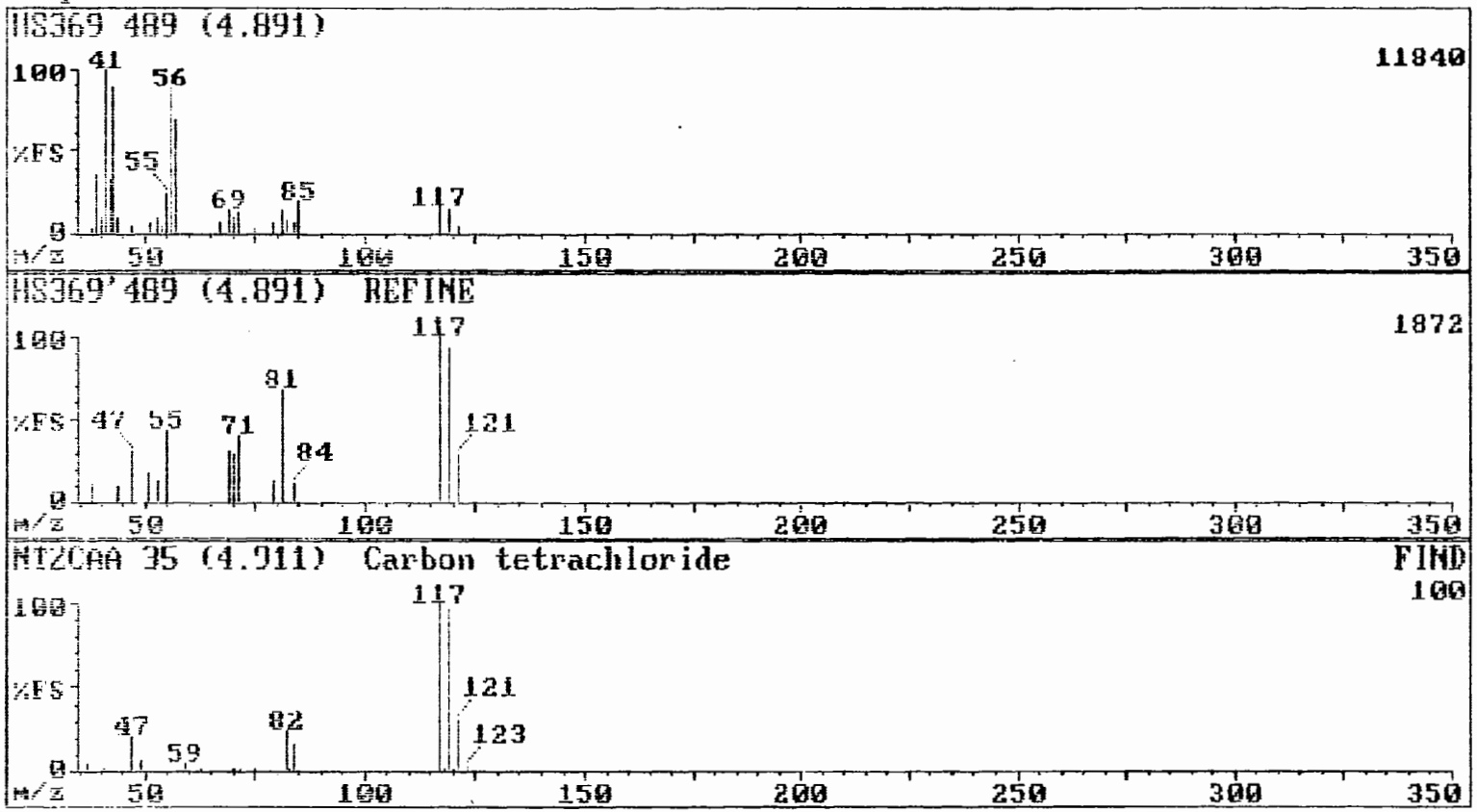
07-09-97 15:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 2 TUBEA/B T/TC 173-46-11A/B TLI#42284 Instrument H



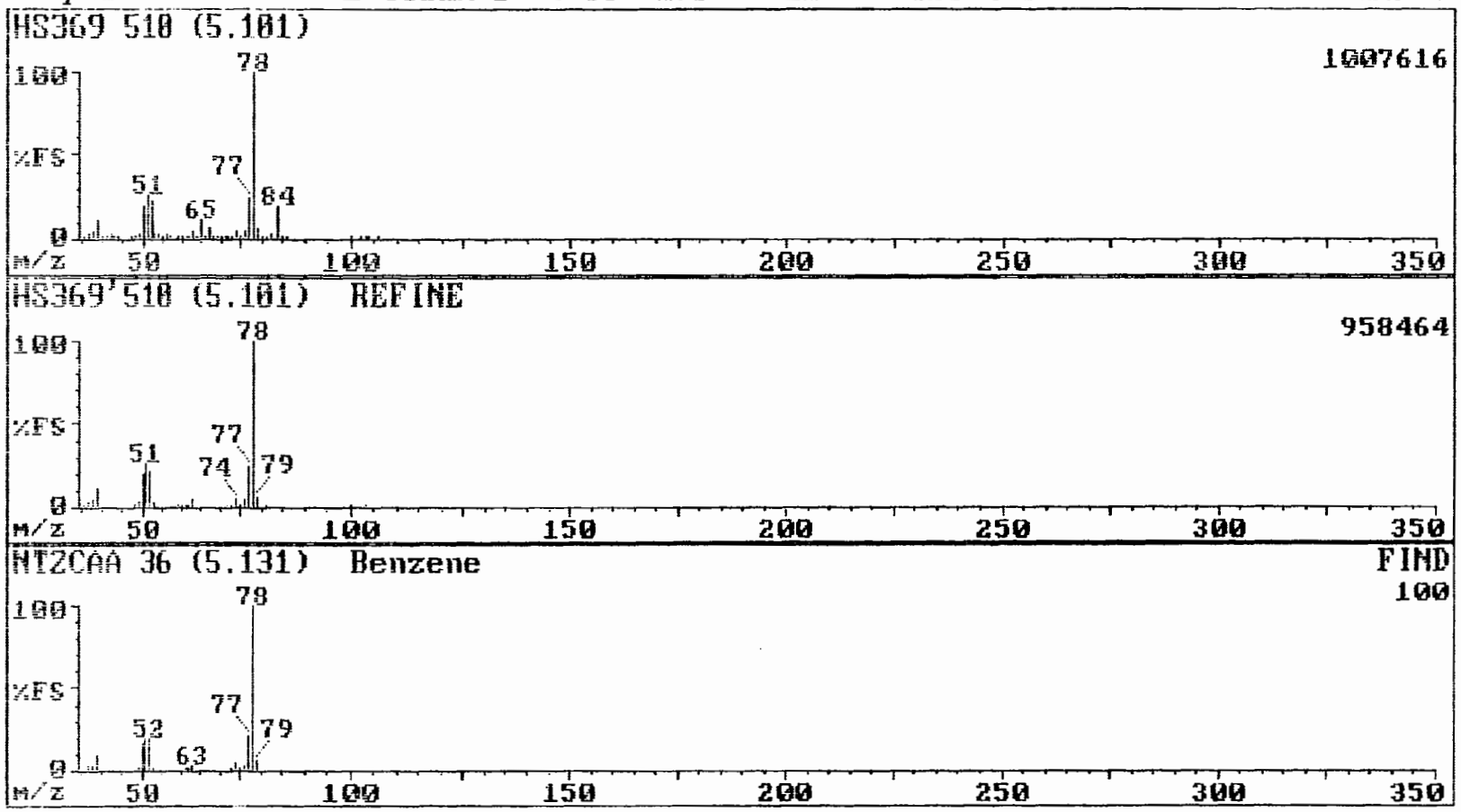
07-09-97 15:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 2 TUBEA/B T/TC 173-46-11A/B TLI#42284 Instrument H



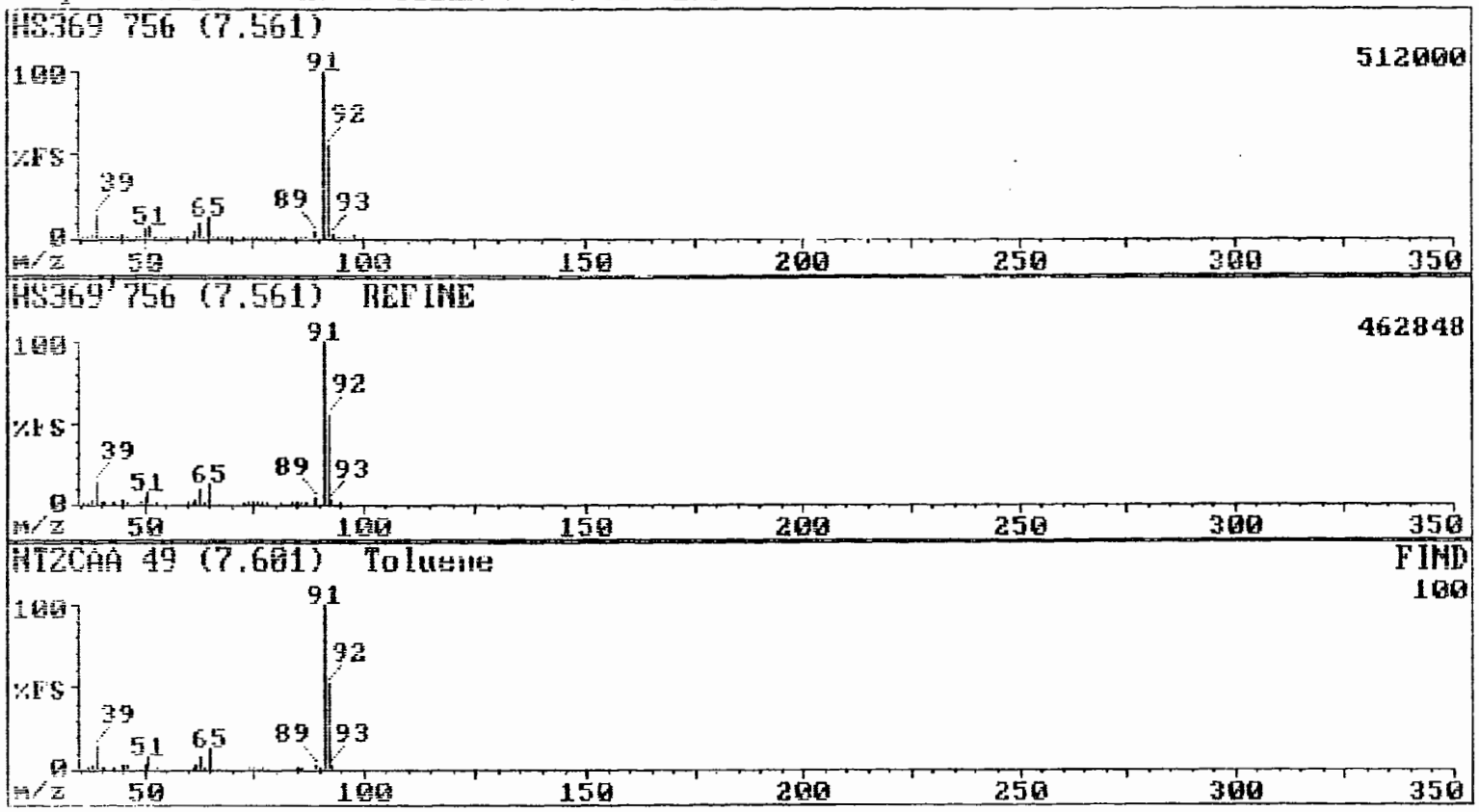
07-09-97 15:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 2 TUBEA/B T/TC 173-46-11A/B TLI#42284 Instrument H



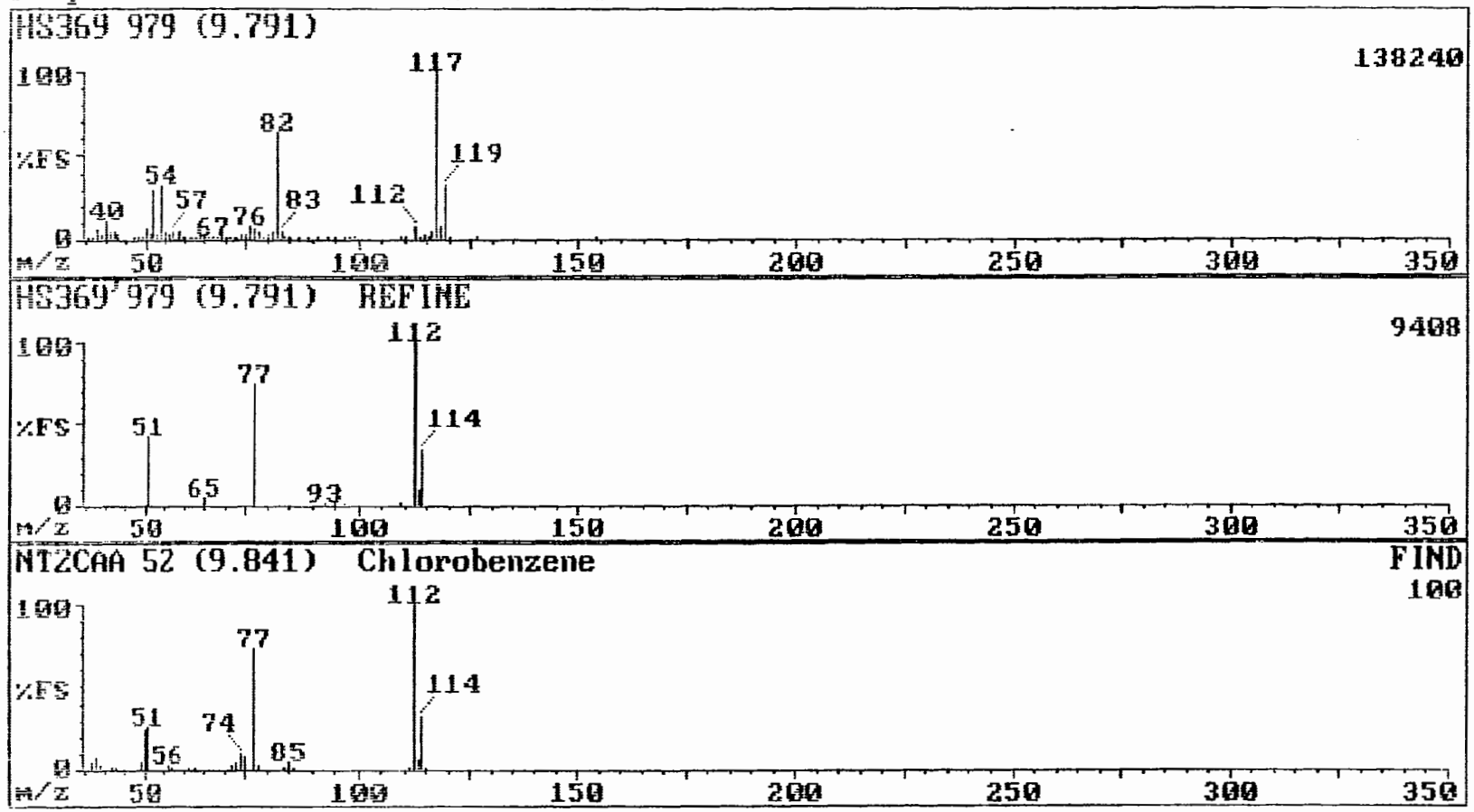
07-09-97 15:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 2 TUBEA/B T/TC 173-46-11A/B TLI#42284 Instrument H



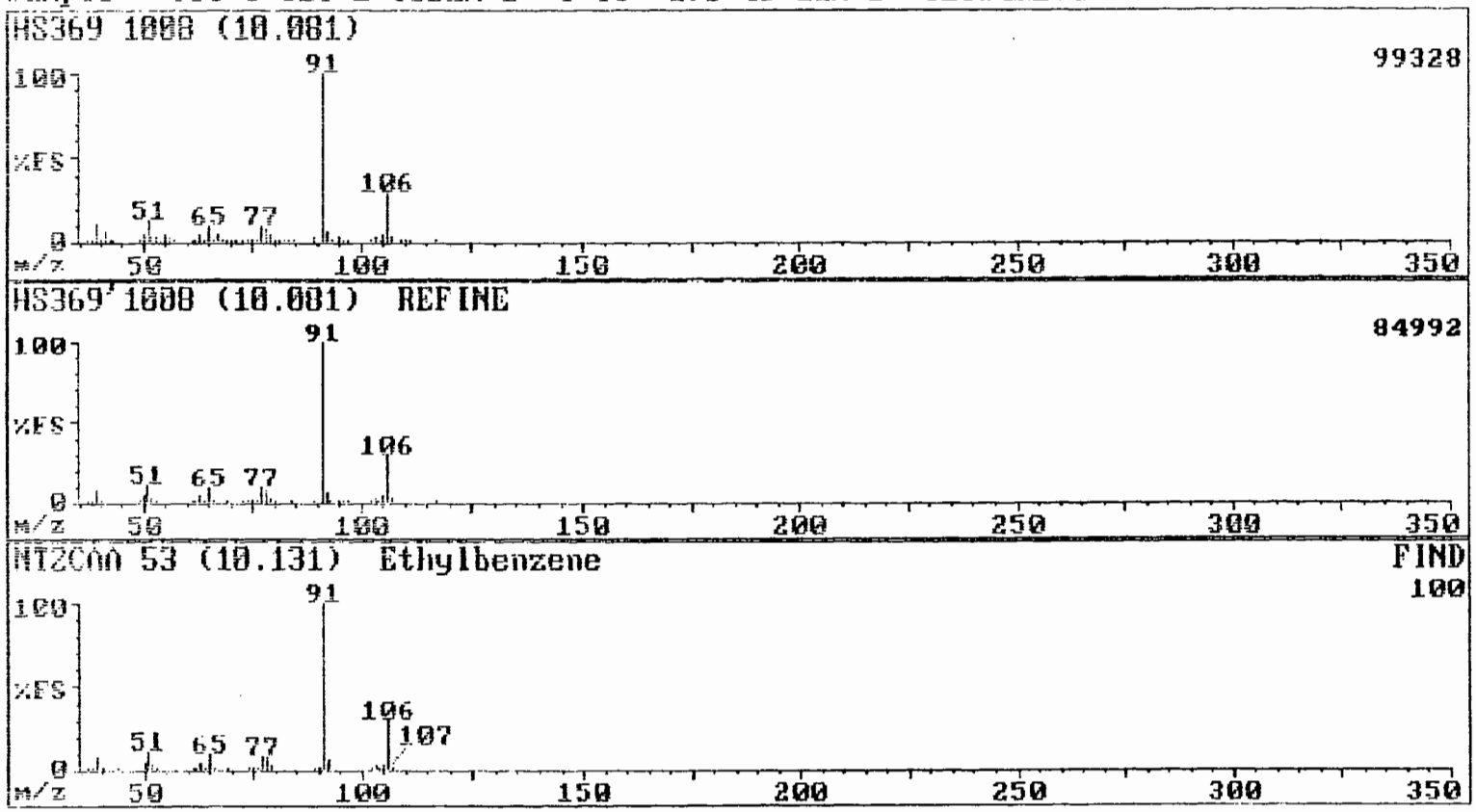
07-09-97 15:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 2 TUBEA/B T/TC 173-46-11A/B TLI#42284 Instrument H



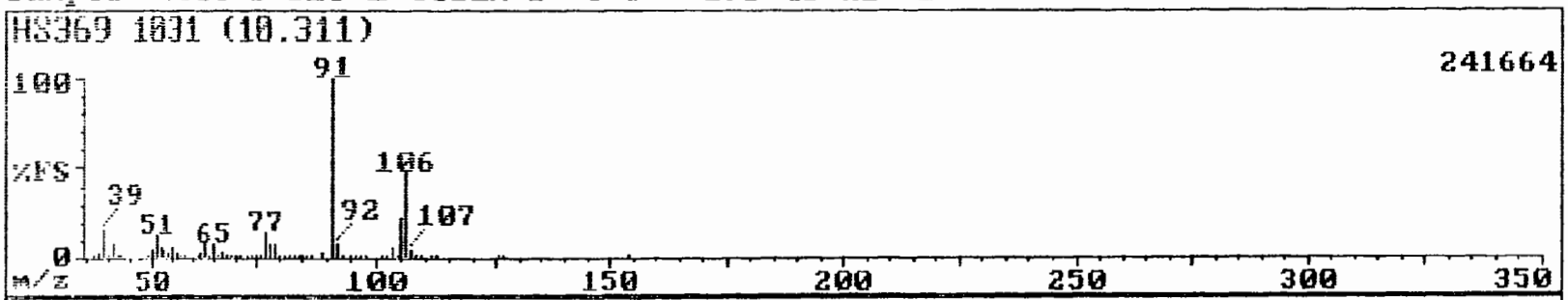
07-09-97 15:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

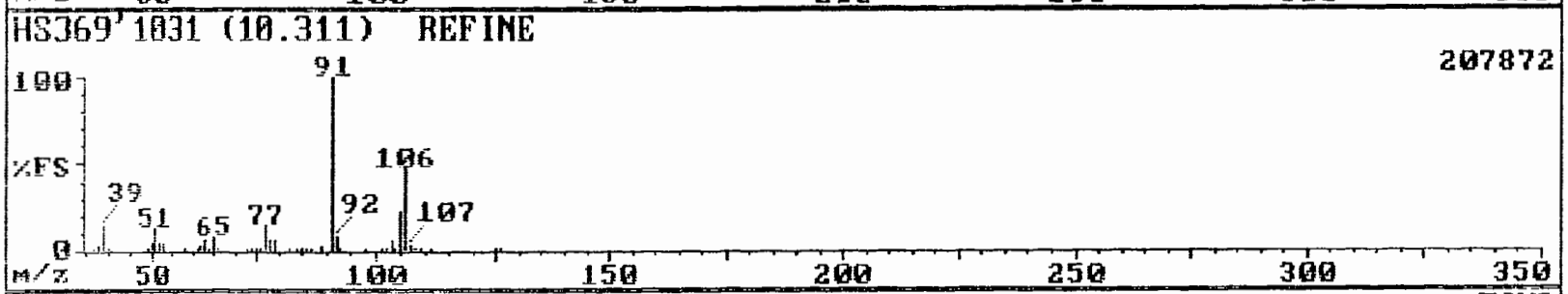
Sample: VOST-3 SET 2 TUBEA/B T/TC 173-46-11A/B TLI#42284 Instrument H

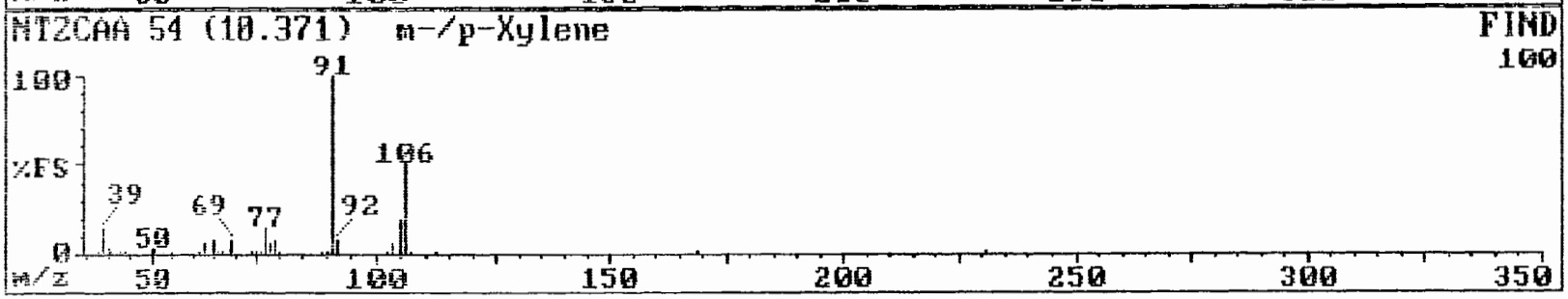


07-09-97 15:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 2 TUBEA/B T/TC 173-46-11A/B TLI#42284 Instrument H

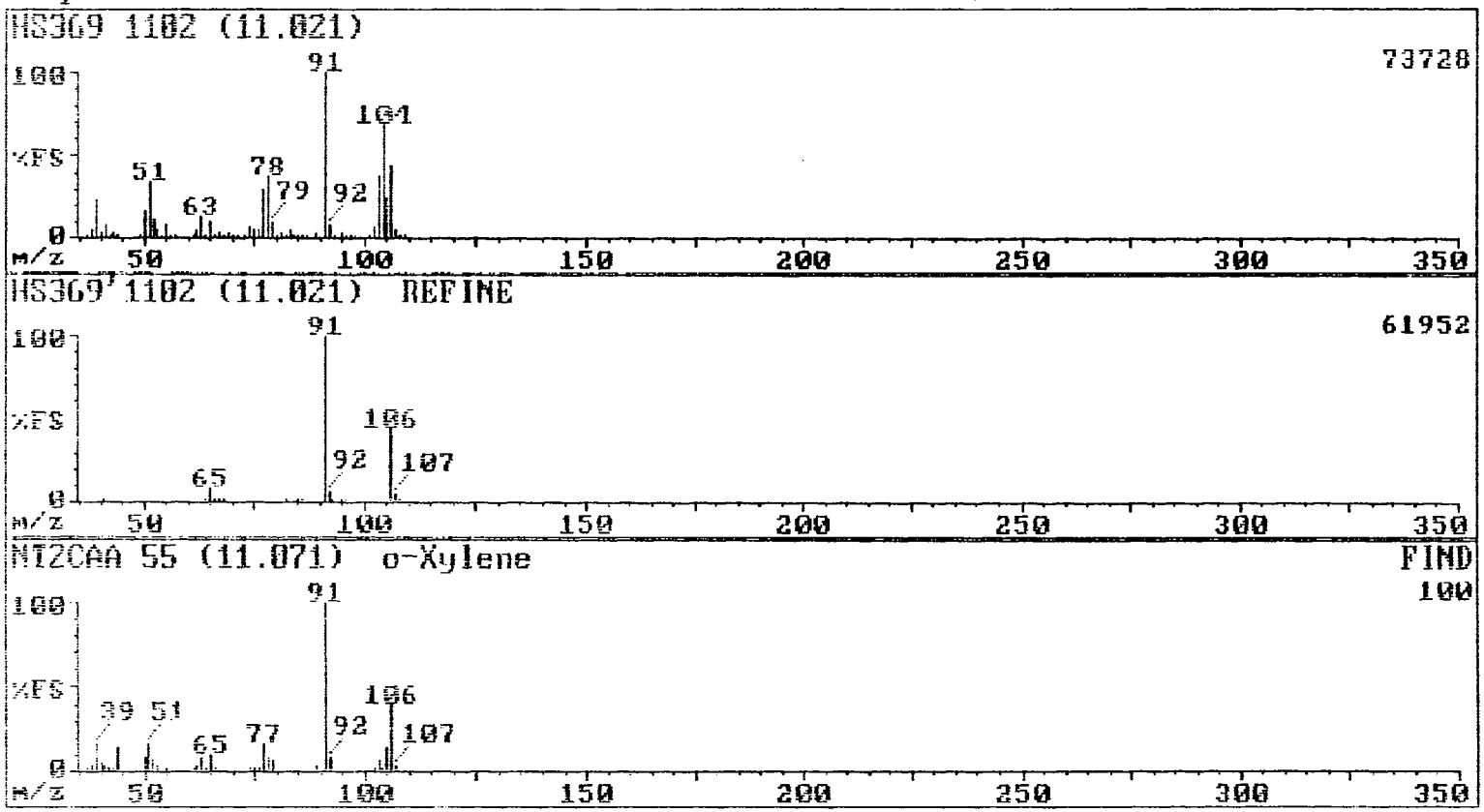






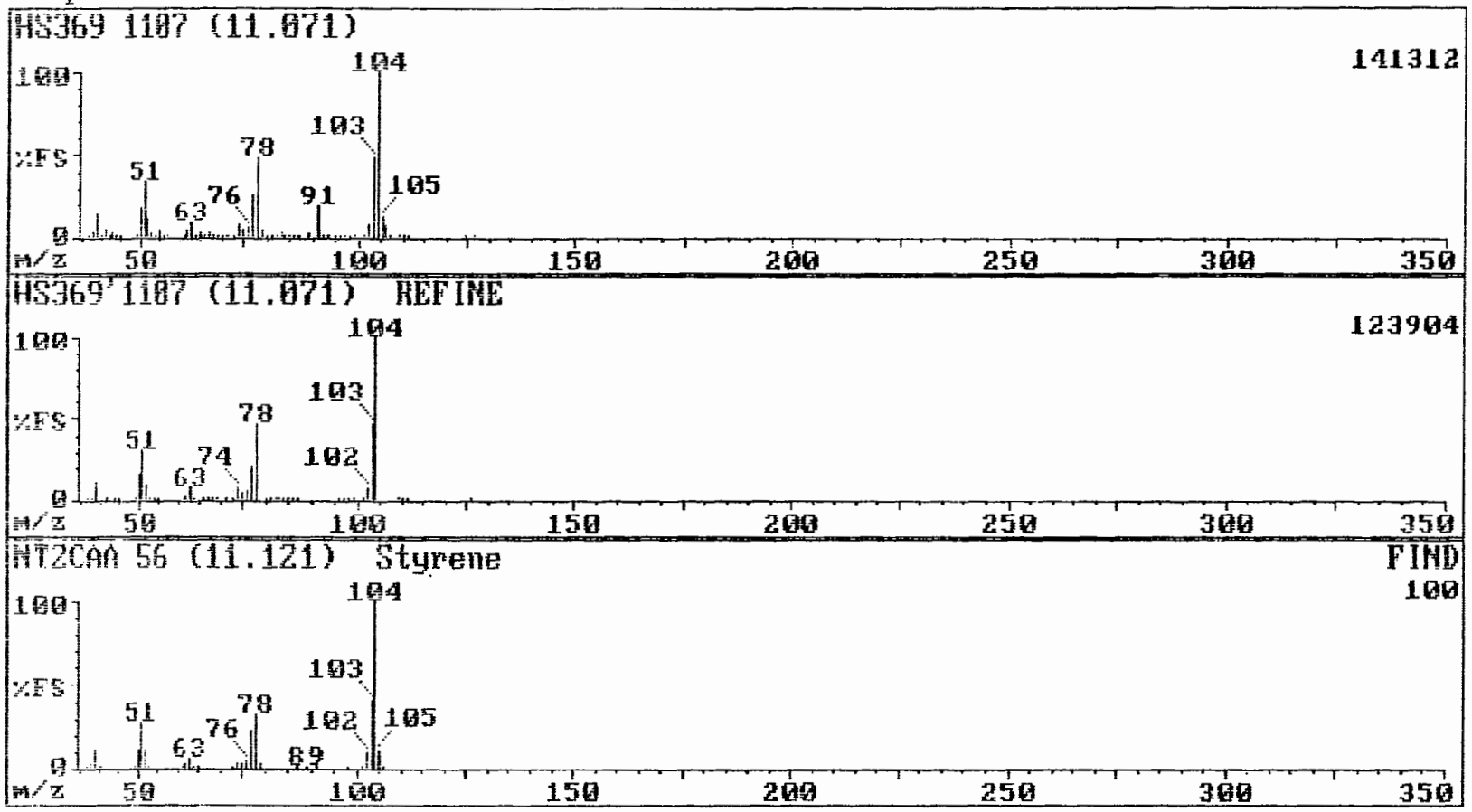
07-09-97 15:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 2 TUBEA/B T/TC 173-46-11A/B TLI#42284 Instrument H



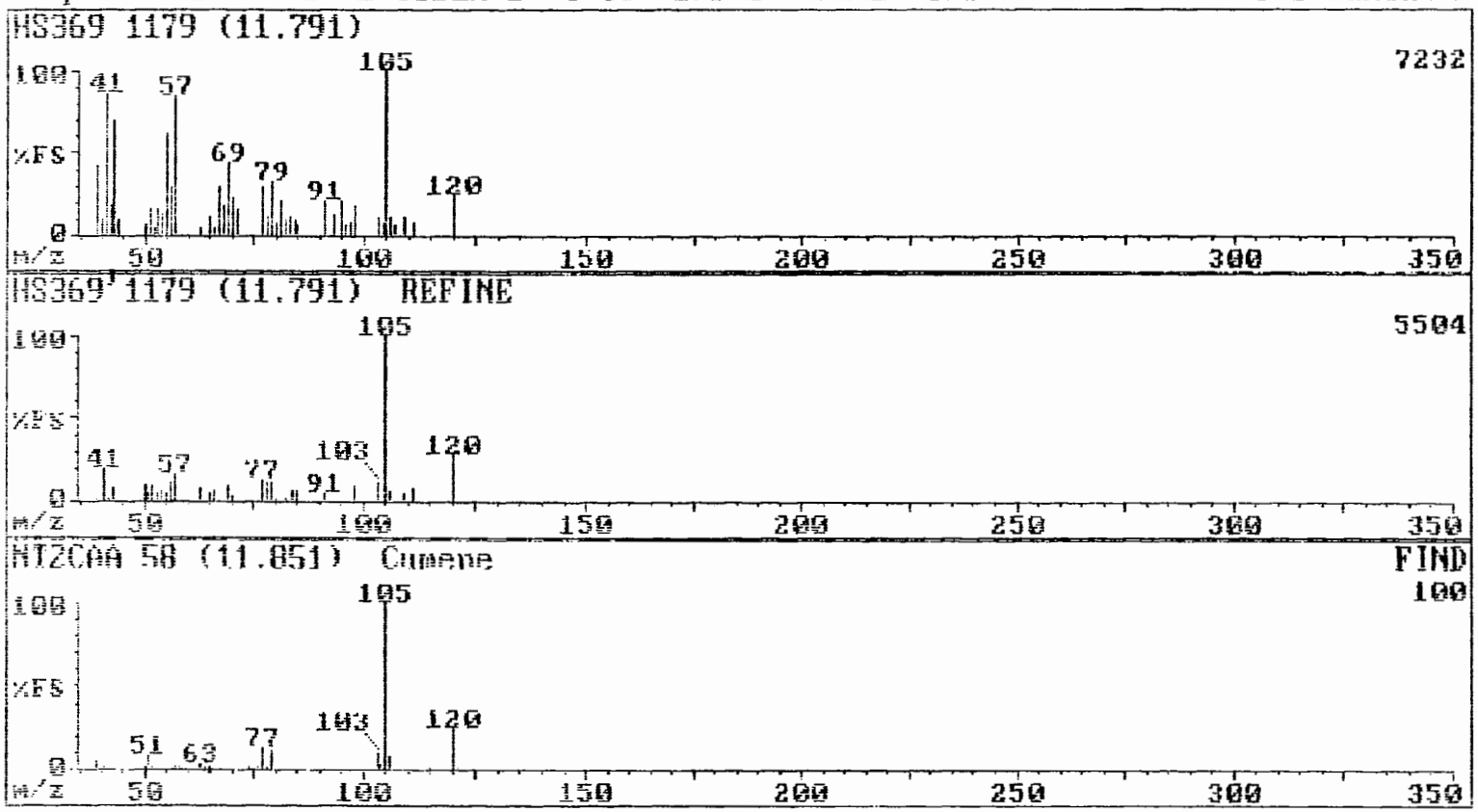
07-09-97 15:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 2 TUBEA/B T/TC 173-46-11A/B TLI#42284 Instrument H



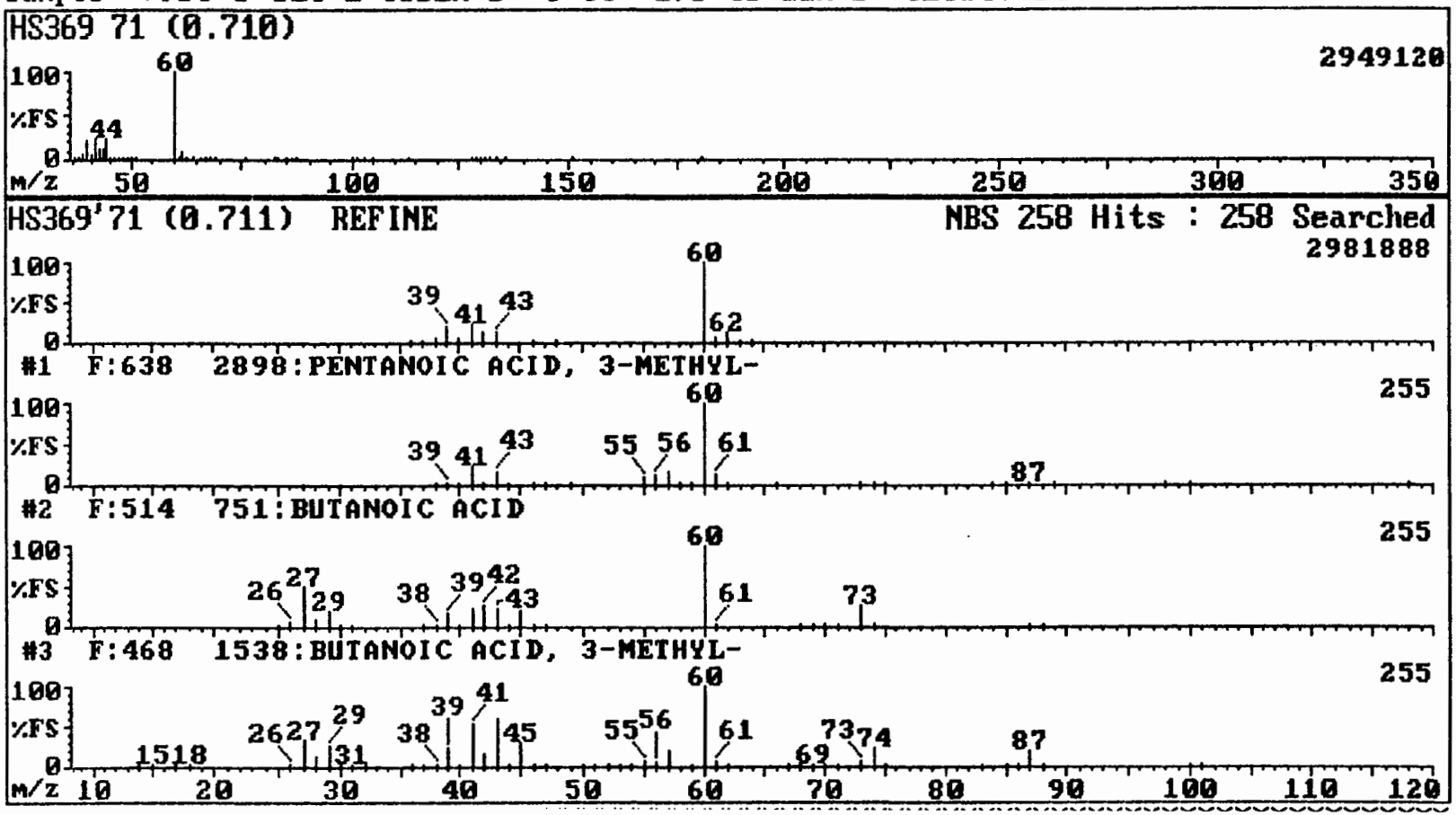
07-09-97 15:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 2 TUBEA/B T/TC 173-46-11A/B TLI#42284 Instrument H



09-Jul-97 15:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

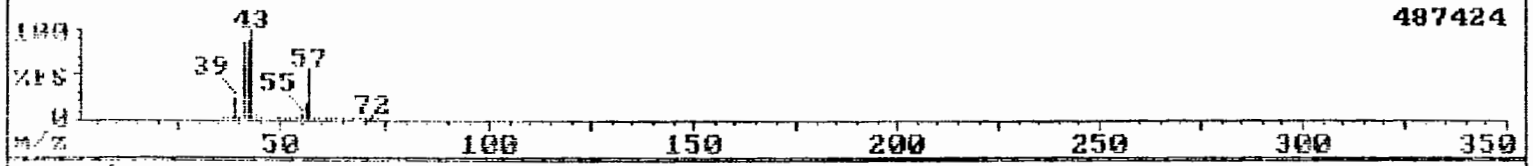
Sample: VOST-3 SET 2 TUBEA/B T/TC 173-46-11A/B TLI#42284 Instrument H



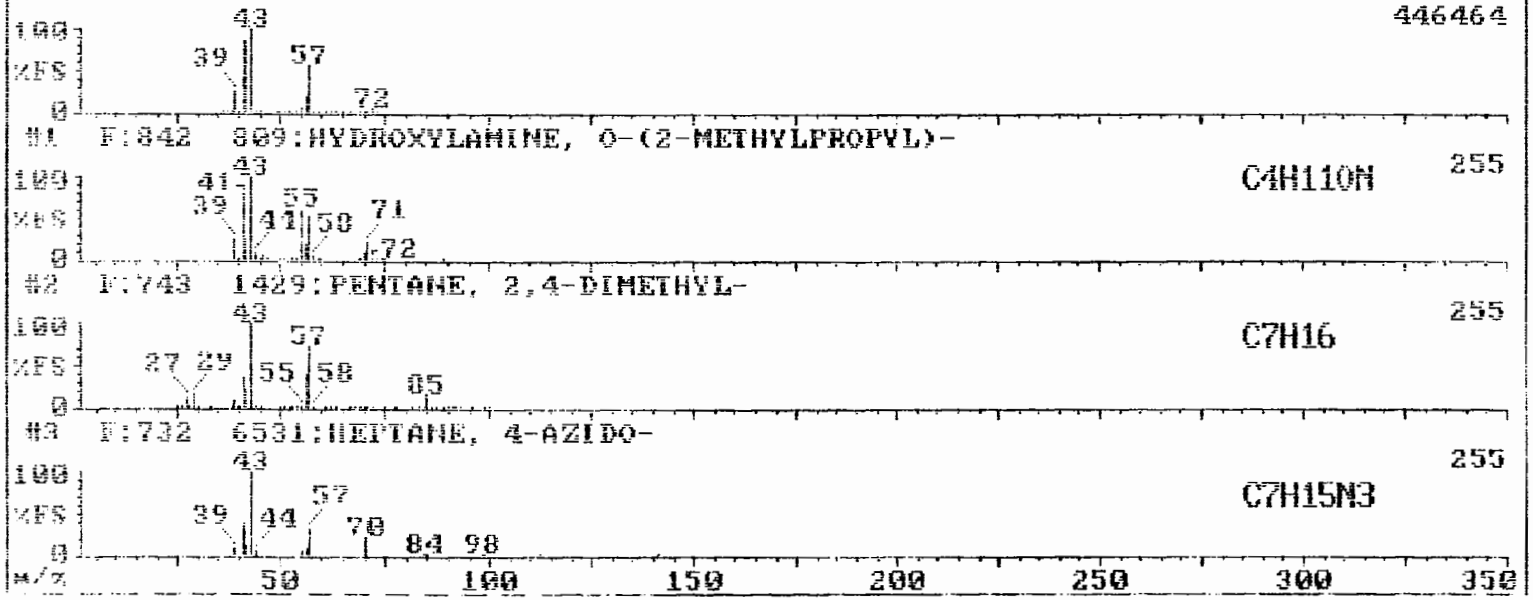
07/09/97 15:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 2 TUBEA/B T/TC 173-46-11A/B TLI#42284 Instrument: H

HS369 162 (1.620) NBS 487424

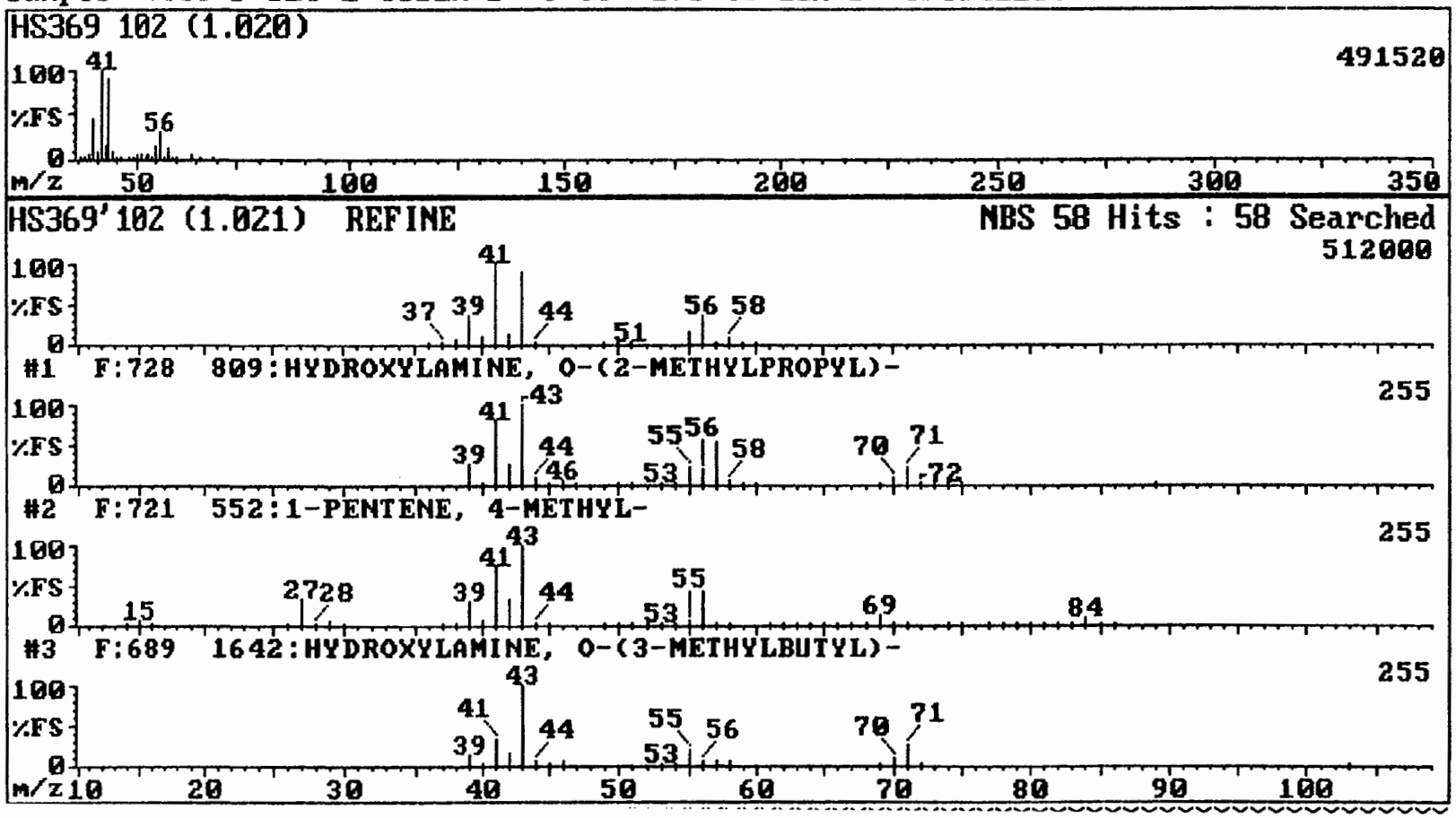


HS369 162 (1.621) REFINE NBS 242 Hits : 242 Searched 446464



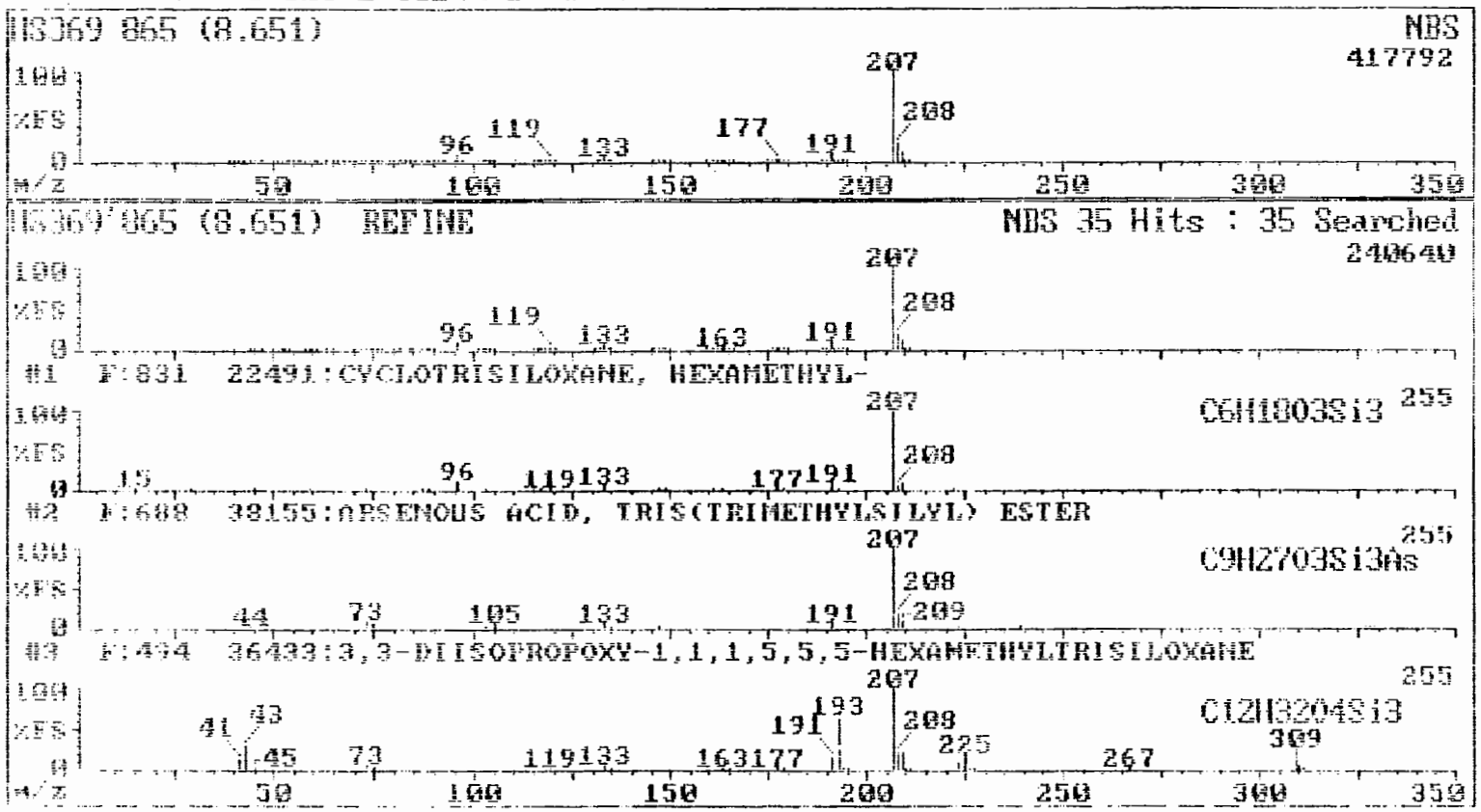
09-Jul-97 15:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 2 TUBEA/B T/TC 173-46-11A/B TLI#42284 Instrument H



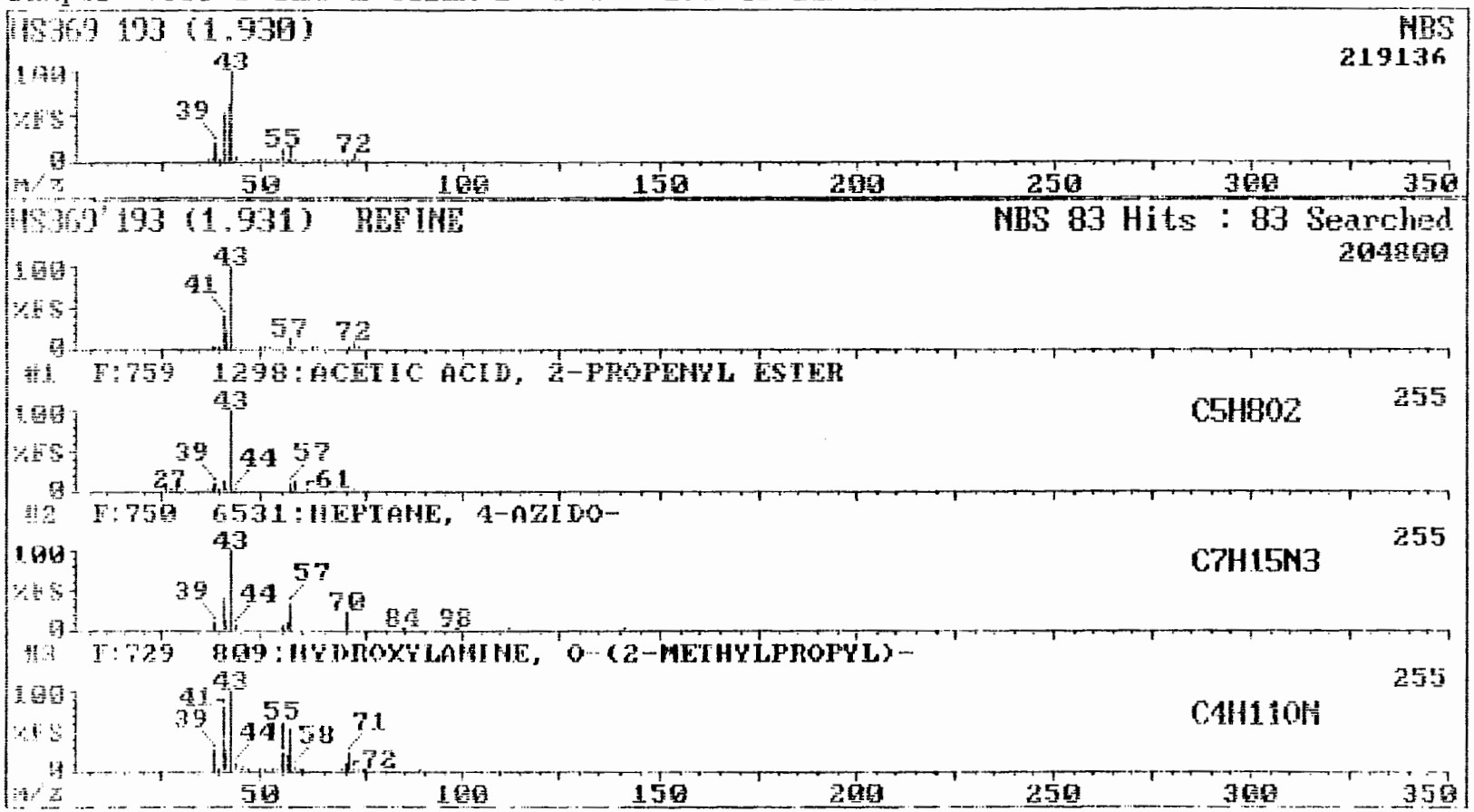
07/09/97 15:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 2 TUBEA/B T/TC 173-46-11A/B TL1#42284 Instrument: H



07/09/97 15:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

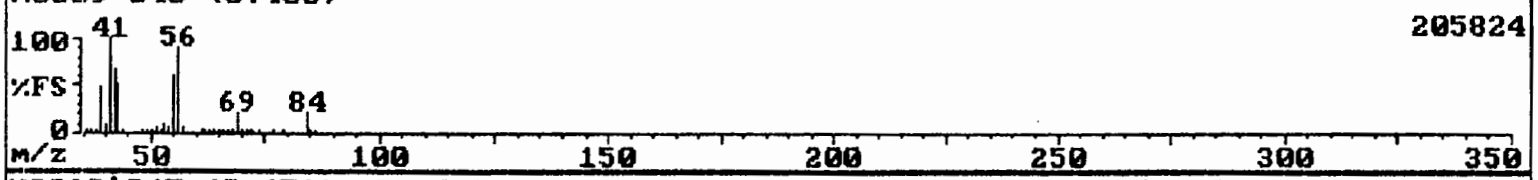
Sample: VOST-3 SET 2 TUBEA/B T/TC 173-46-11A/B TLI#42284 Instrument: H



09-Jul-97 15:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

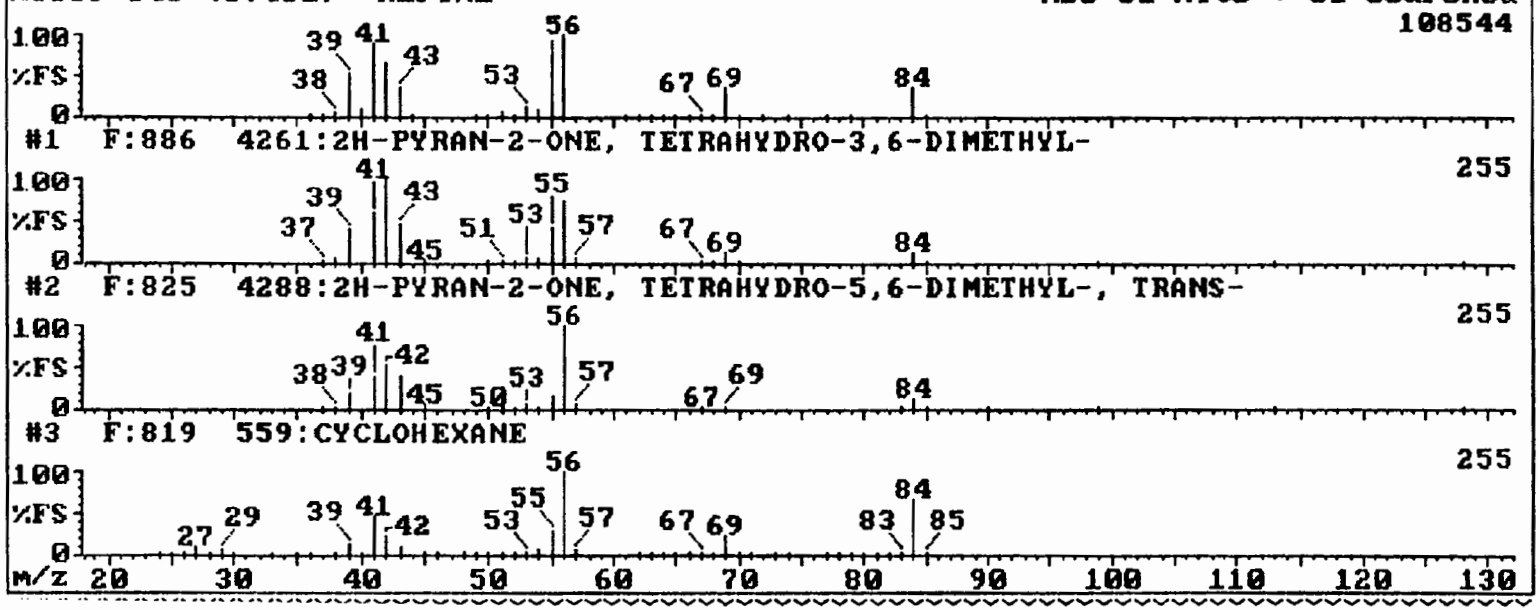
Sample: VOST-3 SET 2 TUBEA/B T/TC 173-46-11A/B TLI#42284 Instrument H

HS369 345 (3.450) 205824



HS369'345 (3.451) REFINE NBS 61 Hits : 61 Searched

108544

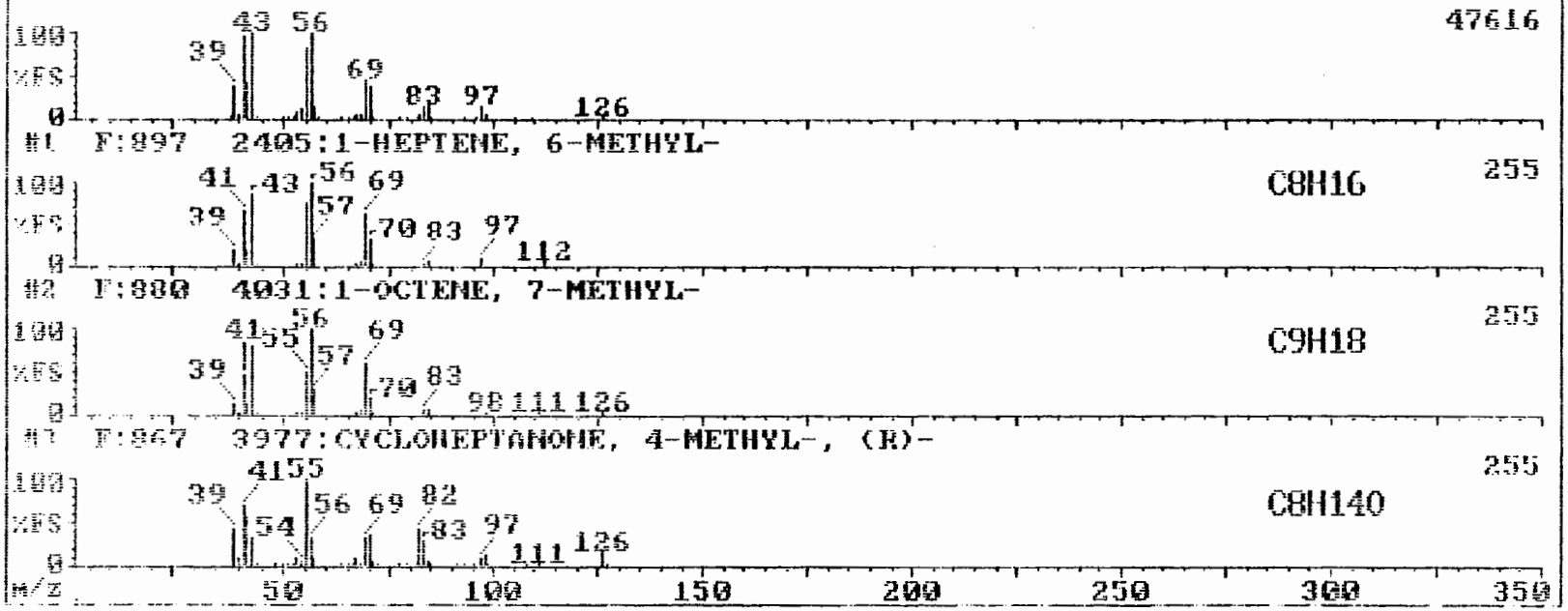


07/09/97 15:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 2 TUBEA/B T/TC 173-46-11A/B TLI#42284 Instrument: H

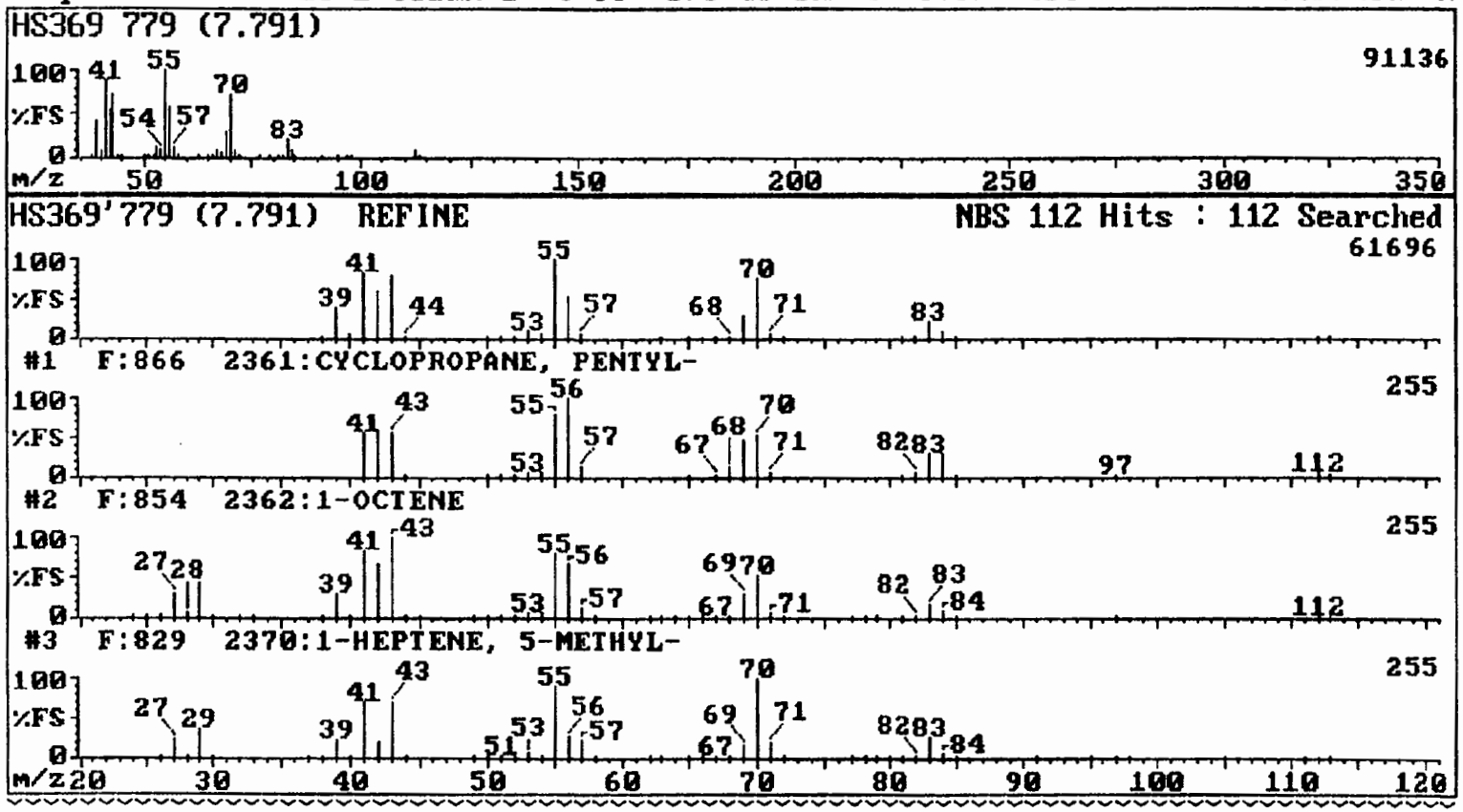
MS369 1048 (10.481) NBS 70656

MS369'1048 (10.481) REFINE NBS 83 Hits : 83 Searched 47616



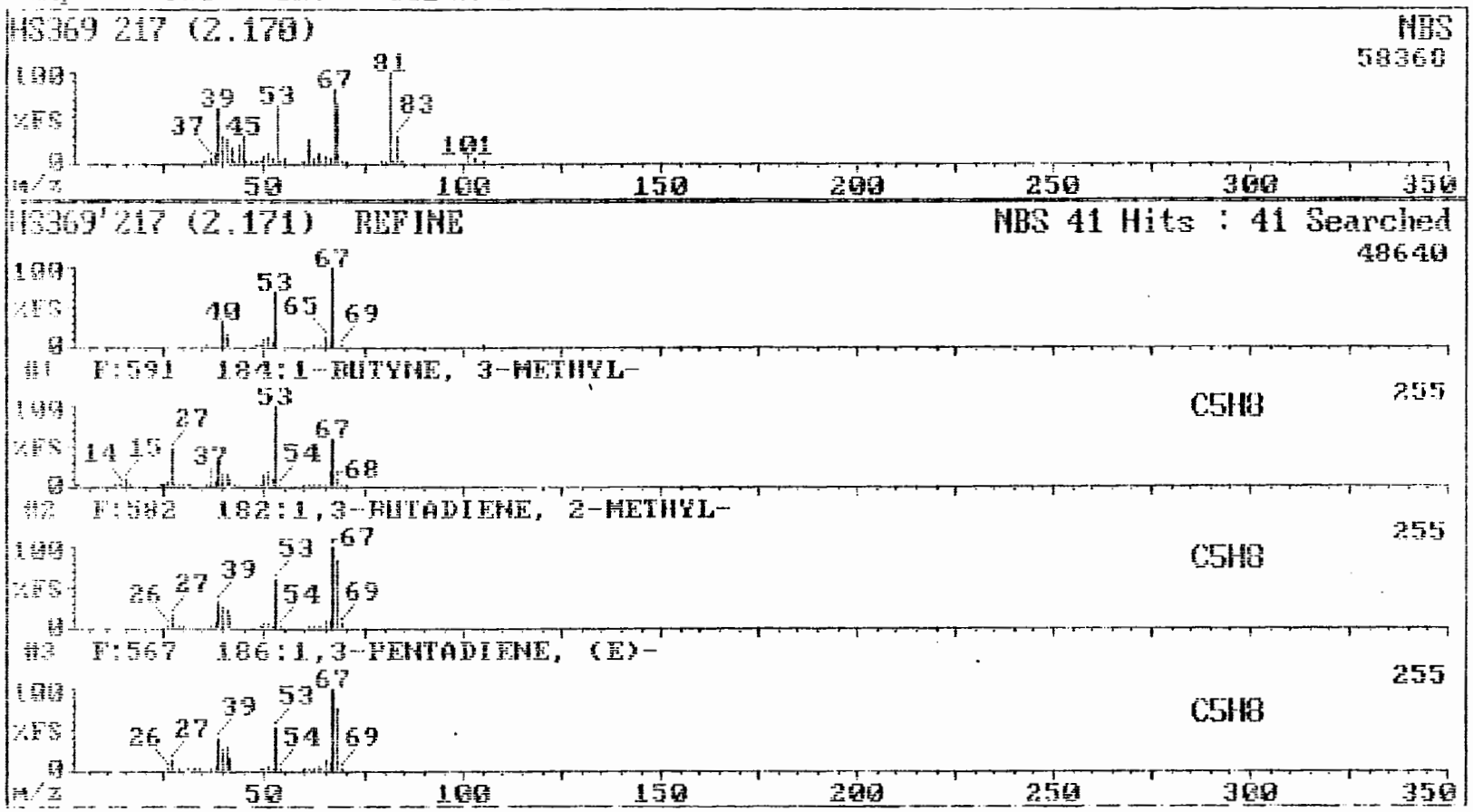
09-Jul-97 15:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 2 TUBEA/B T/TC 173-46-11A/B TLI#42284 Instrument H



02/08/97 15:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

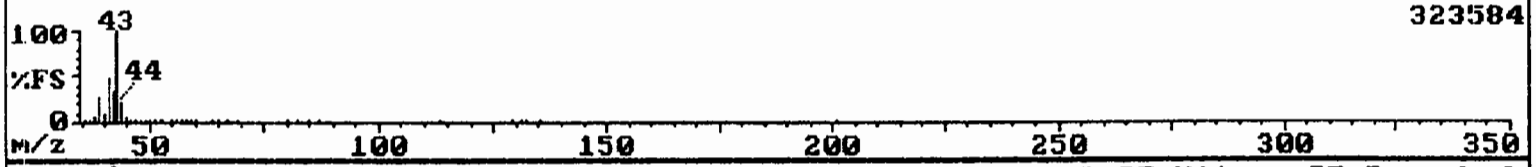
Sample: VOST-3 SET 2 TUBEA/B T/TC 173-46-11A/B TLI#42284 Instrument: H



09-Jul-97 15:07 Triangle Laboratories of RTP, Inc. (919) 544-5729

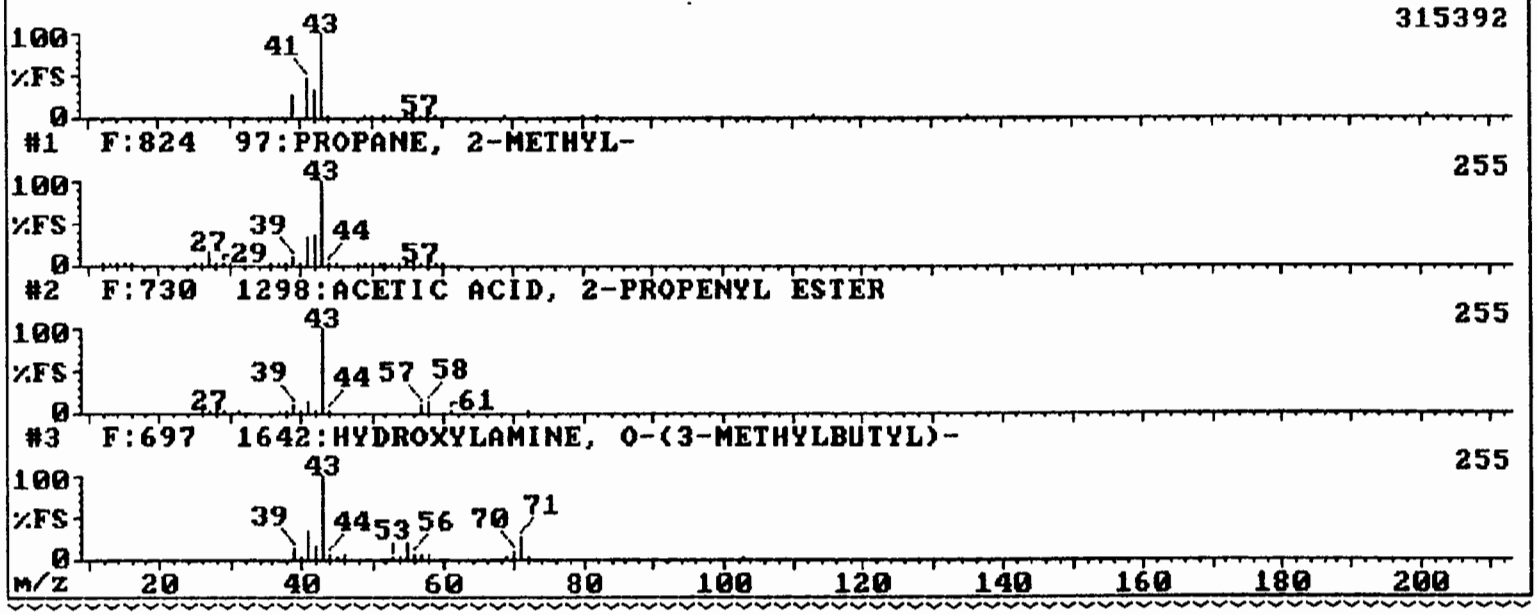
Sample: VOST-3 SET 2 TUBEA/B T/TC 173-46-11A/B TLI#42284 Instrument H

HS369 86 (0.860) 323584



HS369'86 (0.861) REFINE NBS 27 Hits : 27 Searched

315392



Pacific Environmental Services

Project Number: 42284 | **Method 8240A VOST**
Sample File: HS370 | **Sample ID: VOST-3 SET 3 TUBEA/B T/TC**

Client Project: S407-003 | **Date Received: 06/30/97** | **Response File: ICALH708**
TLI ID: 173-46-12A,B
Date Analyzed : 07/09/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
Bromochloromethane		IS 1	4.48		
Chloromethane	0.191		0.92		0.05
Vinyl Chloride		U		0.001	0.05
1,3-Butadiene	0.768		1.08		0.05
Bromomethane	0.020	J	1.41		0.05
Chloroethane		U		0.001	0.05
Vinyl bromide		U		0.001	0.05
Trichlorofluoromethane	0.031	J	1.82		0.05
1,1-Dichloroethene		U		0.001	0.05
Iodomethane		U		0.001	0.05
Carbon disulfide	1.667	E	2.48		0.05
Acetone	0.063	B	2.56		0.05
Allyl chloride		U		0.001	0.05
Methylene chloride	0.811	B	2.95		0.05
trans-1,2-Dichloroethene		U		0.001	0.05
tert-Butyl methyl ether		U		0.001	0.05
Acrylonitrile	3.297	E	3.24		0.05
n-Hexane	0.257		3.54		0.05
1,1-Dichloroethane		U		0.001	0.05
1,2-Epoxybutane		U		0.003	0.05
cis-1,2-Dichloroethene		U		0.001	0.05
Chloroform		U		0.001	0.05
1,2-Dichloroethane		U		0.001	0.05
Isooctane		U		0.001	0.05
1,4-Difluorobenzene		IS 2	5.63		
Vinyl acetate		U		0.001	0.05

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

Pacific Environmental Services

Project Number: 42284 | **Method 8240A VOST**
Sample File: HS370 | **Sample ID: VOST-3 SET 3 TUBEA/B T/TC**

Client Project: S407-003 | **Date Received: 06/30/97** | **Response File: ICALH708**
TLI ID: 173-46-12A,B
Date Analyzed : 07/09/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
2-Butanone	0.014	J	4.36		0.05
1,1,1-Trichloroethane		U		0.001	0.05
Carbon tetrachloride		U		0.001	0.05
Benzene	0.947	B	5.11		0.05
Trichloroethene		U		0.001	0.05
1,2-Dichloropropane		U		0.001	0.05
Ethyl acrylate		U		0.001	0.05
Methyl methacrylate	0.015	J	6.46		0.05
Bromodichloromethane		U		0.001	0.05
cis-1,3-Dichloropropene		U		0.001	0.05
trans-1,3-Dichloropropene		U		0.001	0.05
1,1,2-Trichloroethane		U		0.001	0.05
Dibromochloromethane		U		0.001	0.05
Ethylene dibromide		U		0.001	0.05
Bromoform		U		0.001	0.05
Chlorobenzene-d_5		IS 3	9.74		
4-Methyl-2-pentanone		U		0.001	0.05
Toluene	0.351	B	7.56		0.05
Tetrachloroethene		U		0.001	0.05
2-Hexanone		U		0.001	0.05
Chlorobenzene	0.009	J	9.79		0.05
Ethylbenzene	0.050		10.08		0.05
m-/p-Xylene	0.142		10.31		0.10
o-Xylene	0.048	J	11.01		0.05
Styrene	0.325		11.06		0.05
1,1,2,2-Tetrachloroethane		U		0.001	0.05

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

Triangle Laboratories of RTP, Inc.
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Savar v3.5
Printed: 15:03 07/22/1997

Pacific Environmental Services

Project Number: 42284
Sample File: HS370

Method 8240A VOST
Sample ID: VOST-3 SET 3 TUBEA/B T/TC

Client Project: S407-003
TLI ID: 173-46-12A,B

Date Received: 06/30/97
Date Analyzed : 07/09/97

Response File: ICALH708

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
Cumene	0.004	J	11.78		0.05

Surrogate Summary	Amount (ug)	RT	IS Ref	%REC
1,2-Dichloroethane-d_4	0.229	5.08	1	92
Benzene-d_6	0.261	5.06	2	104
Toluene-d_8	0.279	7.47	3	112

Reviewed by TW Date 7/22/97

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit

IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

Triangle Laboratories of RTP, Inc.
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Savar v3.5
Printed: 15:03 07/22/1997

Pacific Environmental Services

Project Number: 42284 Method 8240A

Sample File: HS370 Sample ID: VOST-3 SET 3 TUBEA/B T/TC

Client Project:	S407-003	Date Received:	06/30/97
TLI ID:	173-46-12A,B	Date Analyzed:	07/09/97
	Dilution Factor:	1.00	

Tentatively Identified Compounds

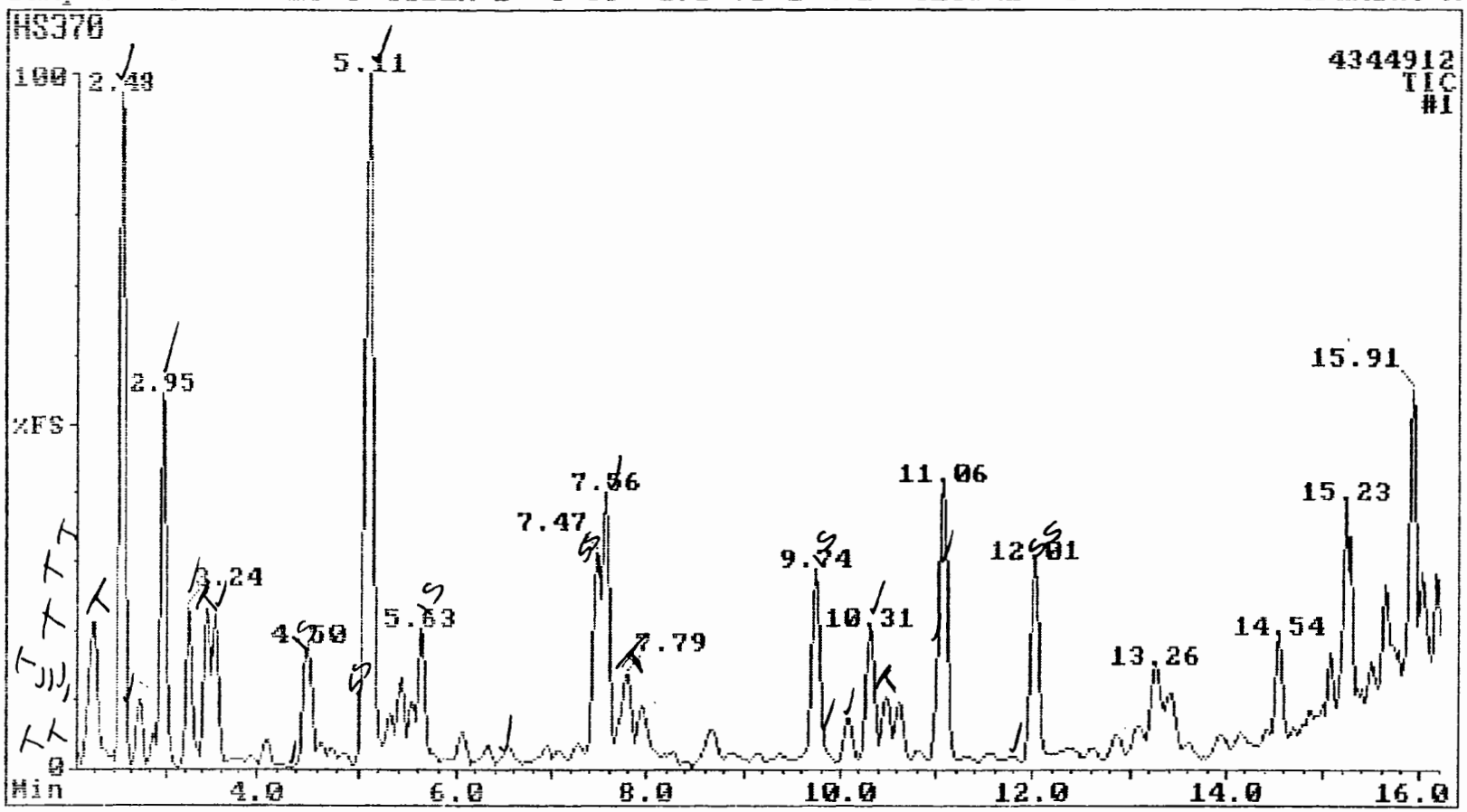
Name	RT	Area	IS RT	IS Area	Amount, ug
Unknown	0.711	48937188	5.631	16044722	0.763
Sulfer Dioxide	0.881	14595666	5.631	16044722	0.227
C6H12 Isomer	3.450	14231927	5.631	16044722	0.222
Methyl Propane Isomer	0.851	13586102	5.631	16044722	0.212
C4H8 Isomer	1.021	12358183	5.631	16044722	0.193
C9H18 isomer	10.481	6929598	9.741	10896565	0.159
Methylbutane Isomer	1.620	9845091	5.631	16044722	0.153
C8H16 Isomer	7.791	6227923	9.741	10896565	0.143
C5H8 Isomer	2.180	9095175	5.631	16044722	0.142
Pentane	1.930	6880450	5.631	16044722	0.107

Triangle Laboratories, Inc.
801 Capitola Drive * Durham, North Carolina 27713
Phone: (919) 544-5729 * Fax: (919) 544-5491

Printed: 11:41 07/25/97

07-09-97 15:32 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 3 TUBEA/B T/TC 173-46-12A/B TLI#42284 Instrument H



Data Review: TLD
Date: 7-20-97

WUAN-DB : HS370 LAB-BASE WUAN 07-09-97 16:0

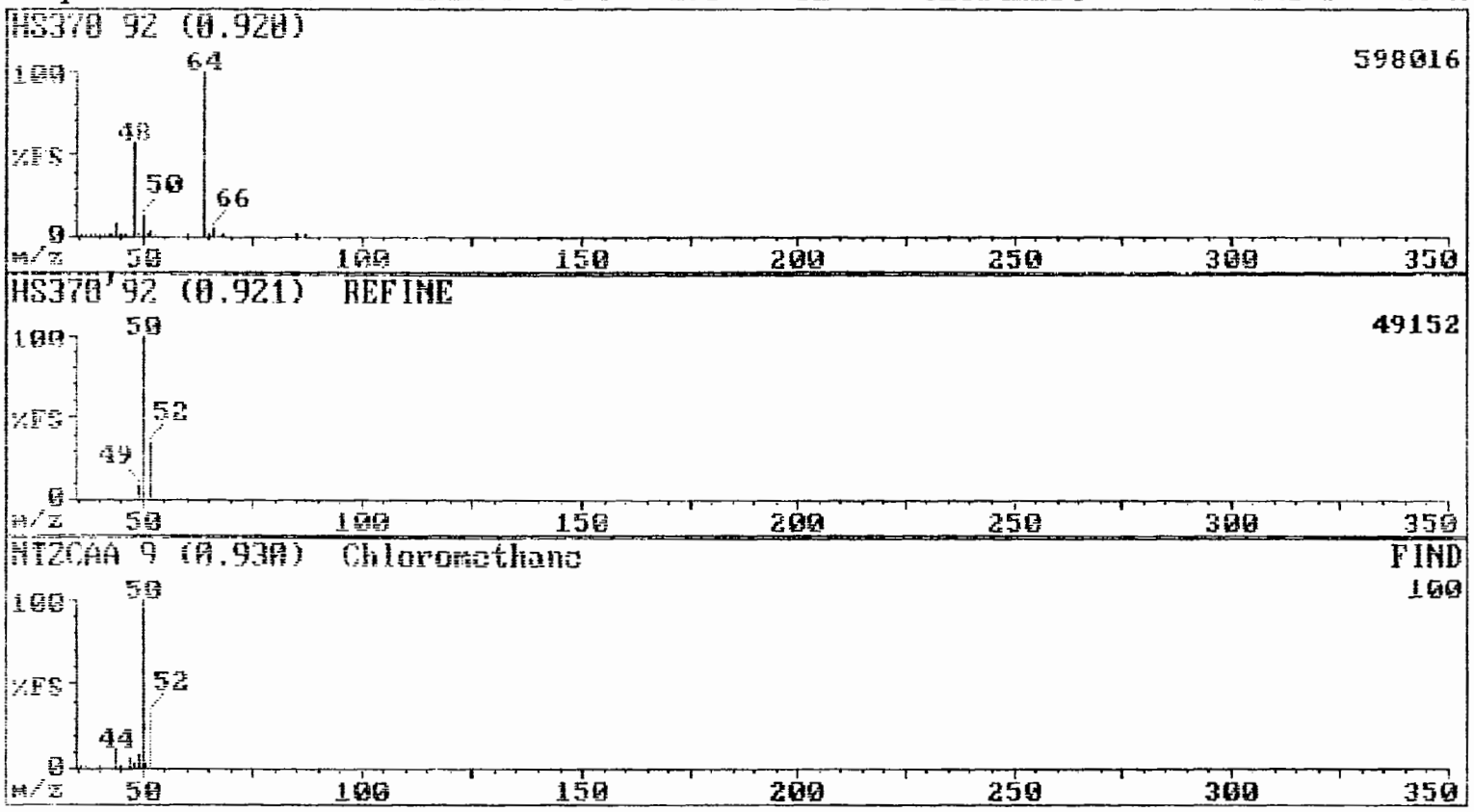
No.	MAT	FOR	REV	Delta	Area	P.Flags	RT	QM	Name
1	100	83	99	-6	375620	bb	4.48	128	Bromochloromethane
2	100	91	97	1	2129864	bb	5.63	114	1,4-Difluorobenzene
3	100	96	99	-1	2872716	bv	9.74	117	Chlorobenzene-d5
4	56	21	69	1	925790	bv	5.08	65	1,2-Dichloroethane-d4
5	100	79	81	0	2567332	bv	3.06	84	Benzene-d6
6	100	89	99	1	3643439	vv	7.47	98	Toluene-d8
~~7~~	~~18~~	~~11~~	~~30~~	~~78~~	~~65241~~	~~vv~~	~~13.25~~	98	o-Xylene-d10 FP TW
8	100	87	94	1	1875327	vv	12.01	95	4-Bromofluorobenzene
9	57	45	47	0	601712	vv	0.92	50	Chloromethane
~~10~~	~~16~~	~~15~~	~~20~~	~~17~~	~~412~~	~~bb~~	~~0.88~~	62	Vinyl Chloride FP TW
11	100	84	100	0	3043472	vv	1.08	39	1,3-Butadiene
12	91	49	96	0	67236	bv	1.41	94	Bromomethane
~~13~~	~~44~~	~~25~~	~~46~~	~~1~~	~~541991~~	~~A~~	~~1.73~~	64	Chloroethane FP TW
14	0	0	0	0	0		0.00	106	Vinyl bromide
15	71	32	86	-1	134820	bb	1.82	101	Trichlorofluoromethane
16	0	0	0	0	0		0.00	96	1,1-Dichloroethene
17	0	0	0	0	0		0.00	142	Iodomethane
18	100	92	99	0	15802750	bv	2.48	76	Carbon disulfide
19	34	19	50	-14	~~41123~~	~~vb~~ 124651	~~2.41~~ 2.56	43	Acetone mi TW
~~20~~	~~66~~	~~43~~	~~64~~	~~1~~	~~16328~~	~~A~~	~~2.80~~	76	Allyl chloride FP TW
21	100	86	96	0	2399812	bb	2.95	84	Methylene chloride
22	0	0	0	0	0		0.00	96	trans-1,2-Dichloroethene
~~23~~	~~49~~	~~36~~	~~45~~	~~2~~	~~4812~~	~~bb~~	~~3.31~~	73	tert-Butyl methyl eth FP TW
24	100	86	94	-1	2134896	bv	3.24	53	Acrylonitrile
25	100	97	100	-1	1809252	vv	3.54	57	n-Hexane
26	0	0	0	0	0		0.00	63	1,1-Dichloroethane
~~27~~	~~56~~	~~45~~	~~56~~	~~-7~~	~~103576~~	~~bv~~	~~4.09~~	42	1,2-Epoxybutane FP TW
28	0	0	0	0	0		0.00	96	cis-1,2-Dichloroethene
29	0	0	0	0	0		0.00	83	Chloroform
30	0	0	0	0	0		0.00	62	1,2-Dichloroethane
~~31~~	~~42~~	~~55~~	~~62~~	~~27~~	~~587057~~	~~vv~~	~~5.53~~	57	Isooctane
~~32~~	~~32~~	~~30~~	~~62~~	~~-28~~	~~1883304~~	~~bv~~	~~3.54~~	43	Vinyl acetate FP TW
33	76	50	71	0	4776	bb	4.36	72	2-Butanone
34	0	0	0	0	0		0.00	97	1,1,1-Trichloroethane
35	0	0	0	0	0		0.00	117	Carbon tetrachloride
36	100	93	100	1	10224600	bv	5.11	78	Benzene
~~37~~	~~29~~	~~10~~	~~37~~	~~1~~	~~3152~~	~~bb~~	~~5.88~~	130	Trichloroethene
~~38~~	~~40~~	~~31~~	~~61~~	~~-29~~	~~9608~~	~~bv~~	~~5.91~~	63	1,2-Dichloropropane FP TW
~~39~~	~~40~~	~~31~~	~~64~~	~~-13~~	~~318617~~	~~bv~~	~~6.05~~	55	Ethyl acrylate
40	89	61	82	0	31793	A	6.46	69	Methyl methacrylate
41	0	0	0	0	0		0.00	83	Bromodichloromethane
42	0	0	0	0	0		0.00	75	cis-1,3-Dichloropropene
43	0	0	0	0	0		0.00	75	trans-1,3-Dichloropropen
44	0	0	0	0	0		0.00	97	1,1,2-Trichloroethane
45	0	0	0	0	0		0.00	129	Dibromochloromethane
46	0	0	0	0	0		0.00	107	Ethylene dibromide
47	0	0	0	0	0		0.00	173	Bromoform
~~48~~	~~38~~	~~33~~	~~78~~	~~19~~	~~154286~~	~~vv~~	~~7.26~~	43	4-Methyl-2-pentanone FP TW
49	100	94	99	1	2984780	bv	7.56	92	Toluene
50	0	0	0	0	0		0.00	164	Tetrachloroethene

No.	MAT	FOR	REV	Delta	Area	P.Flags	RT	QM	Name
~~51~~	~~37~~	~~14~~	~~59~~	~~-7~~	~~28449~~	~~A~~	8.70	43	2-Hexanone
52	60	25	76	1	100896	bb	9.79	112	Chlorobenzene
53	100	86	98	1	296704	bv	10.08	106	Ethylbenzene
54	100	85	93	0	1040368	vv	10.31	106	m-/p-Xylene
55	96	74	80	1	334980	bv	11.01	106	o-Xylene
56	100	95	99	1	3766132	bv	11.06	104	Styrene
~~57~~	~~17~~	~~5~~	~~47~~	~~20~~	~~9168~~	~~A~~	~~12.24~~	83	1,1,2,2-Tetrachloroethane
58	61	31	67	0	91300	bv	11.78	105	Cumene

Data Review: TW
Date: 7-20-97

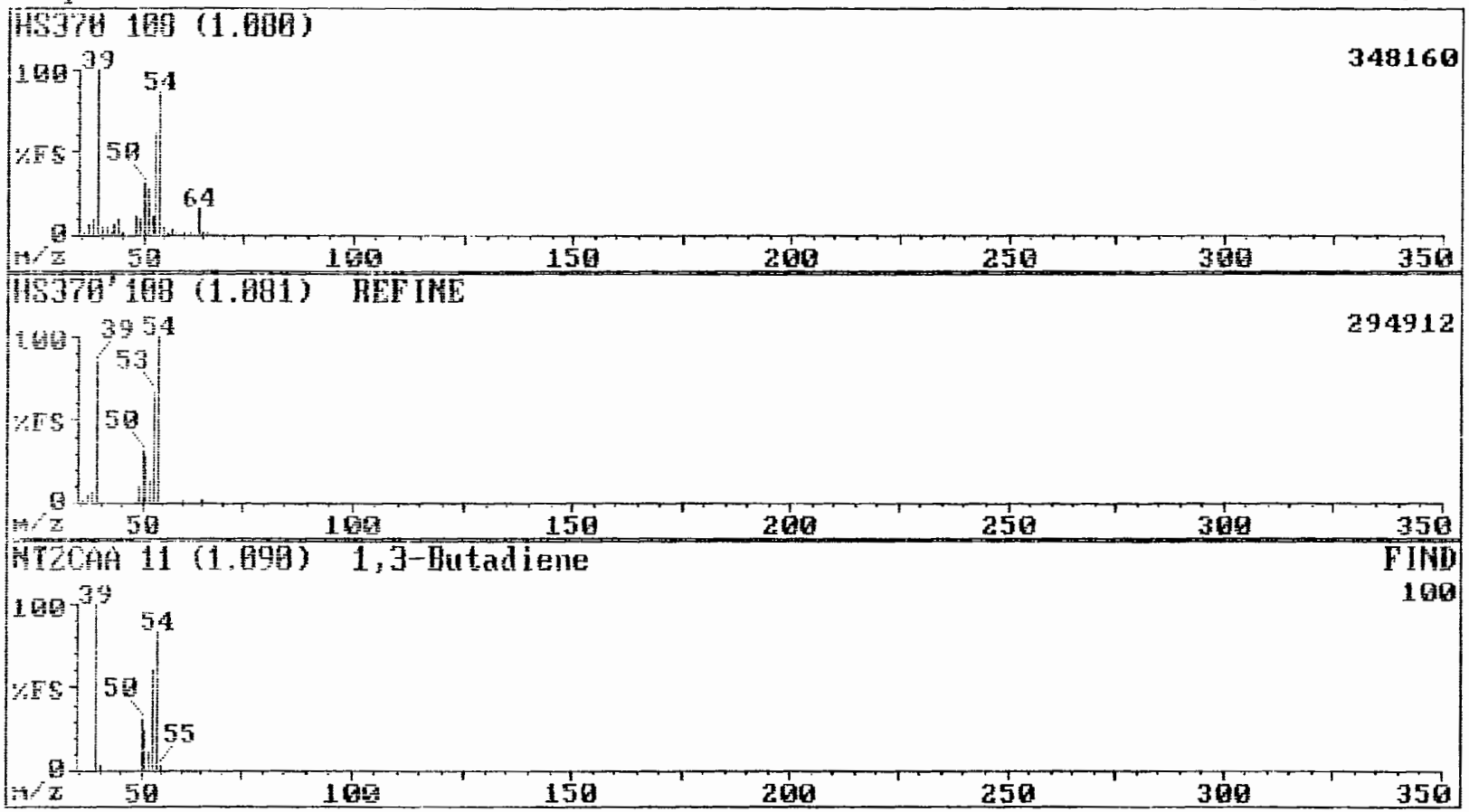
07-09-97 15:32 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 3 TUBEA/B T/TC i73-46-12A/B TLI#42284 Instrument H



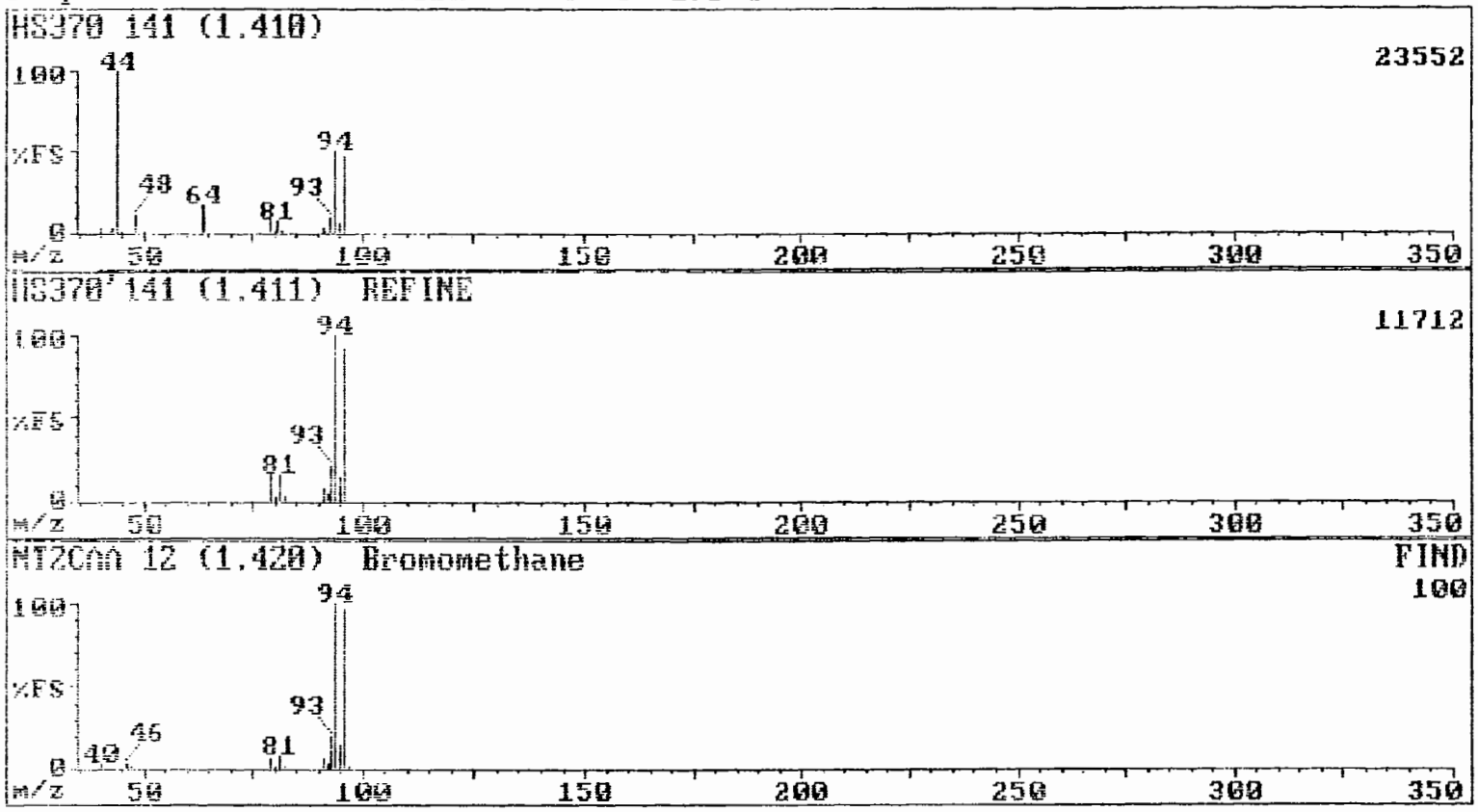
07-09-97 15:32 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 3 TUBEA/B T/TC 173-46-12A/B TLI#42284 Instrument H



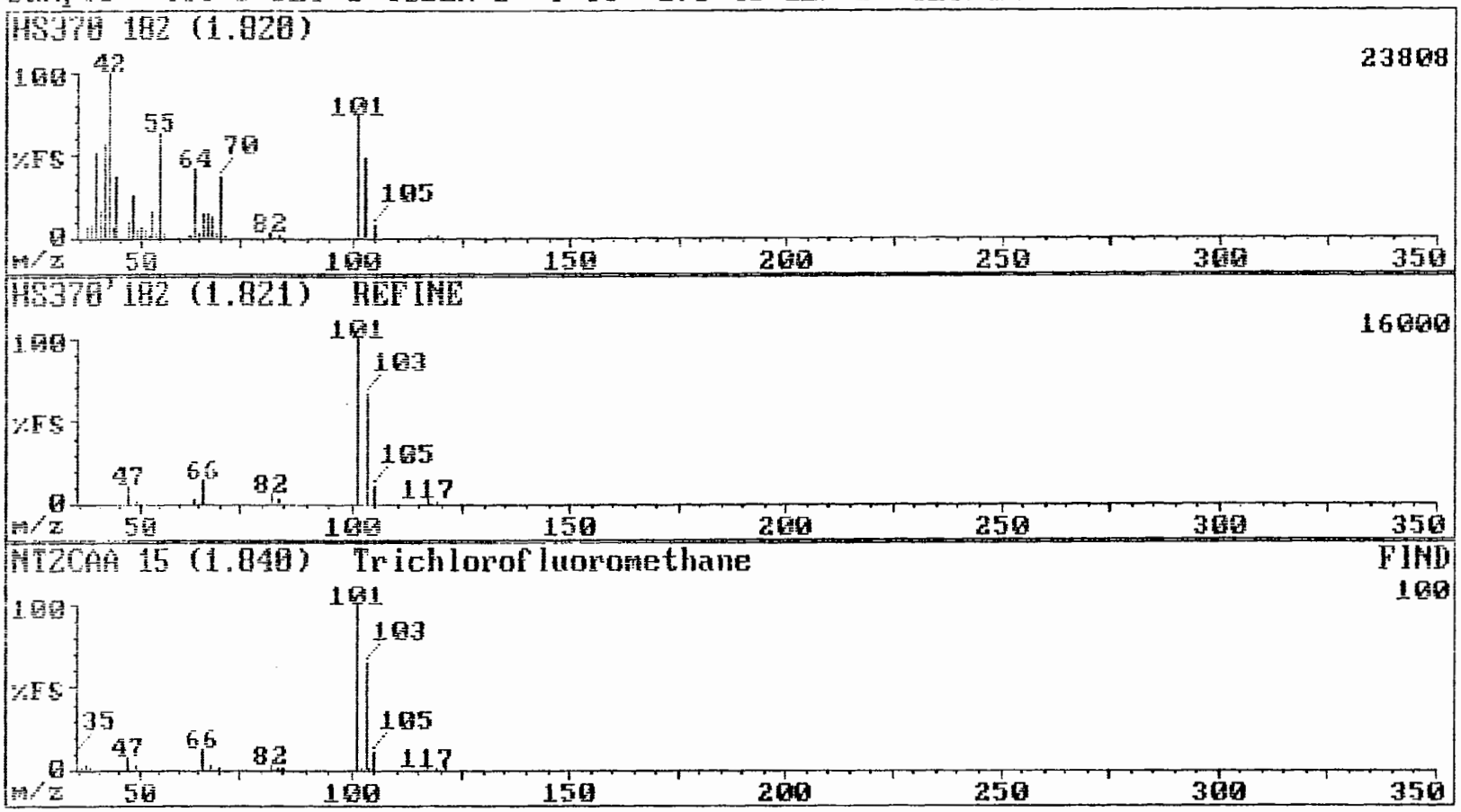
07-09-97 15:32 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 3 TUBEA/B T/TC 173-46-12A/B TLI#42284 Instrument H



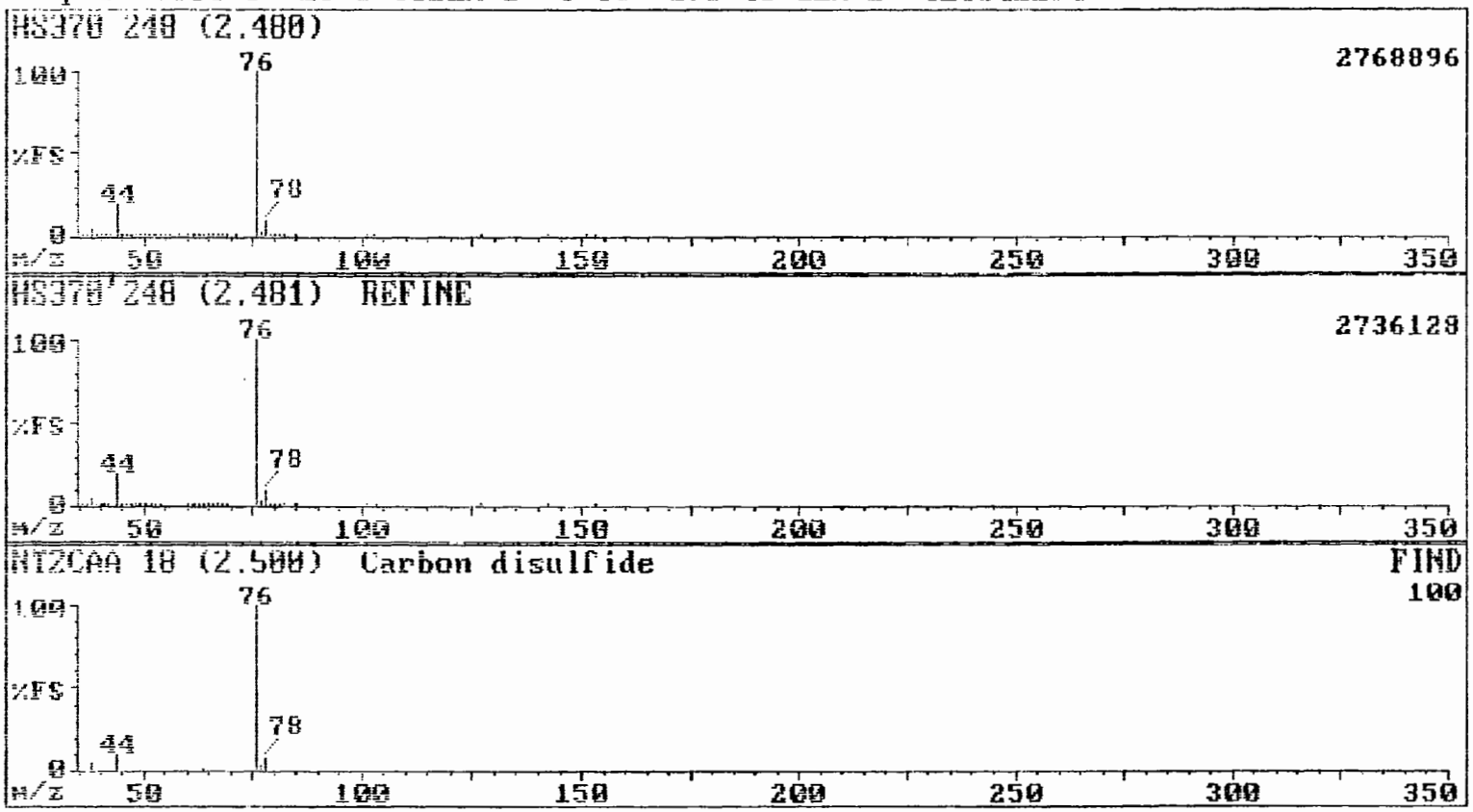
07-09-97 15:32 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 3 TUBEA/B T/TC 173-46-12A/B TLI#42284 Instrument H



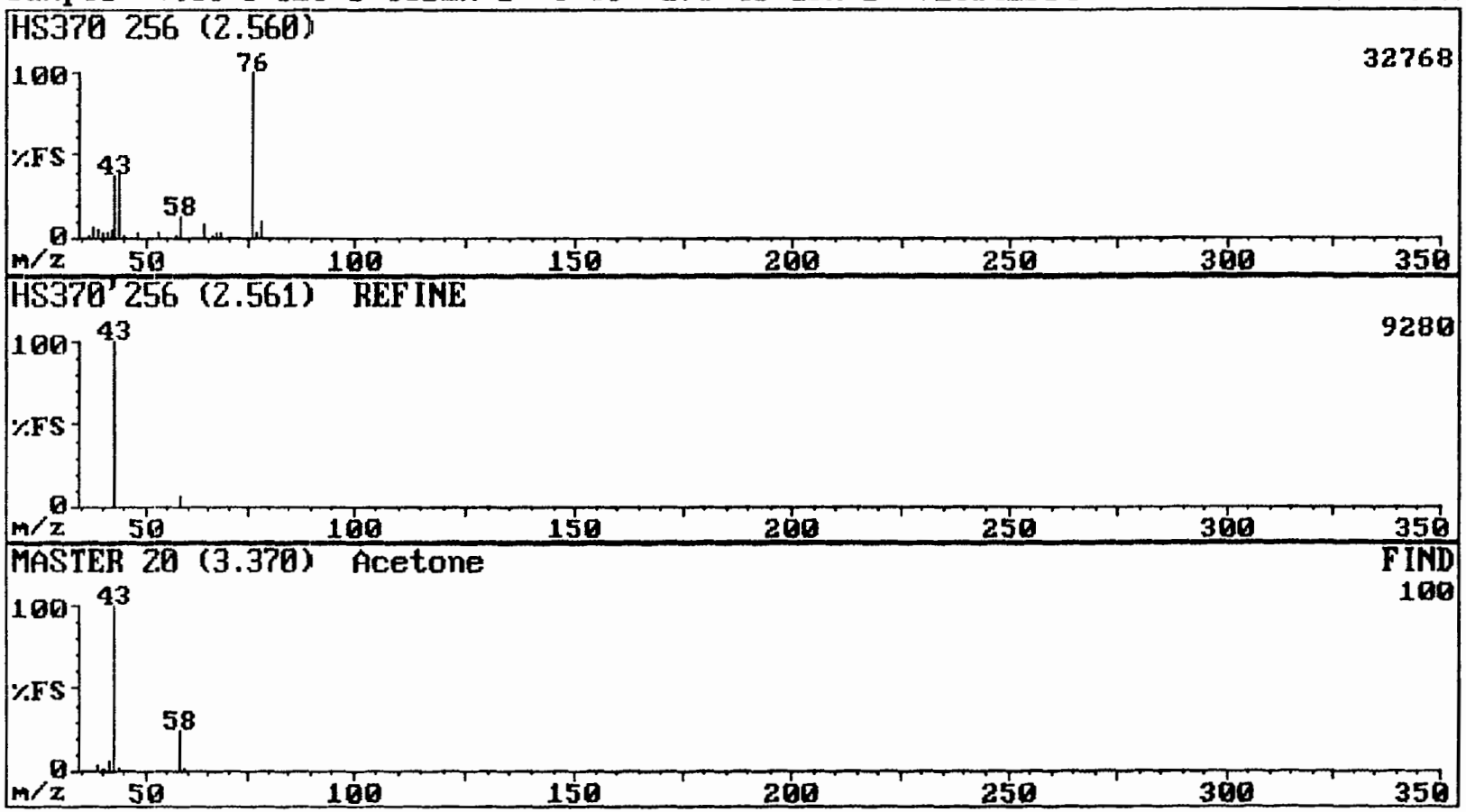
07-09-97 15:32 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 3 TUBEA/B T/TC 173-46-12A/B TLI#42284 Instrument H



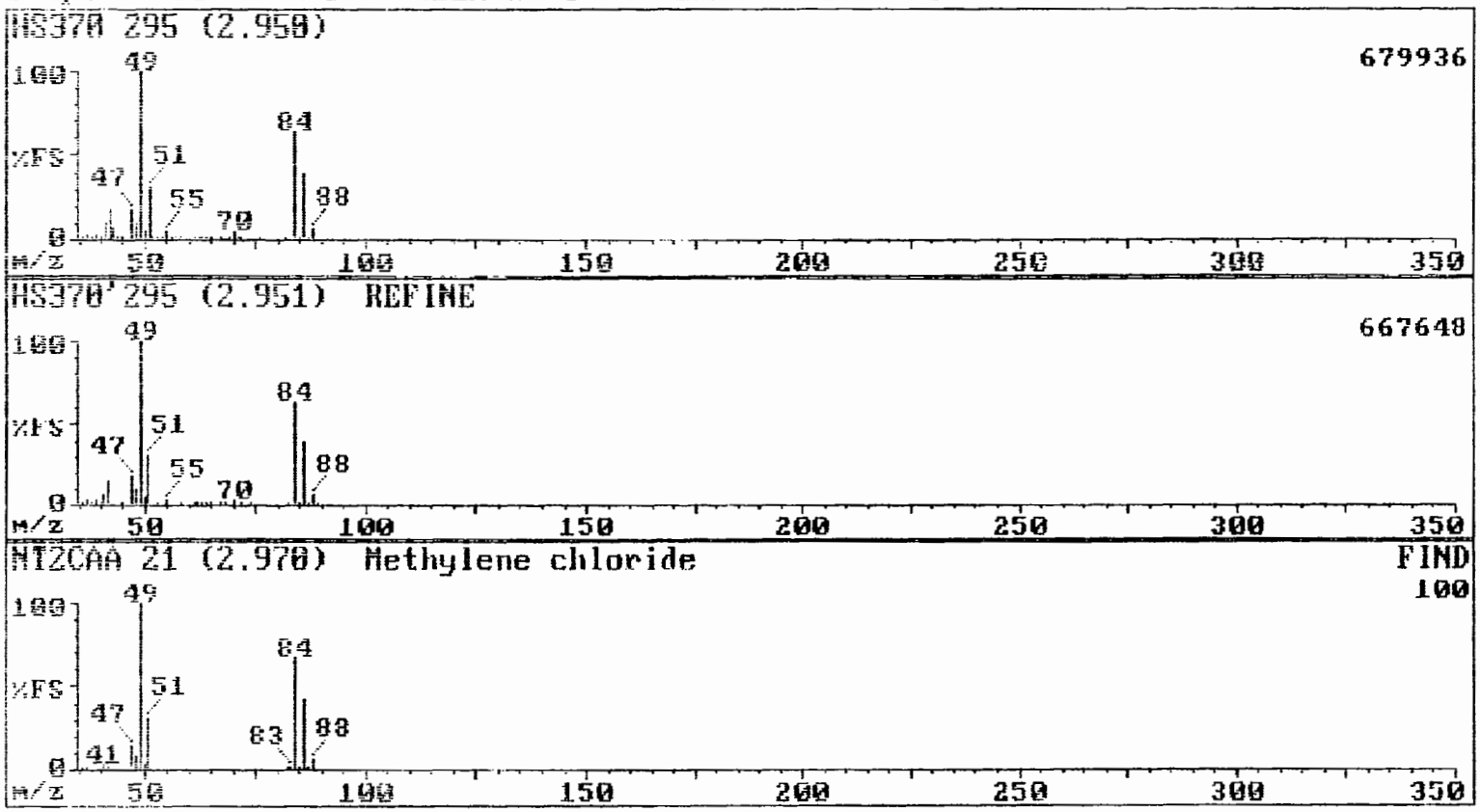
09-Jul-97 15:32 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 3 TUBEA/B T/TC 173-46-12A/B TLI#42284 Instrument H



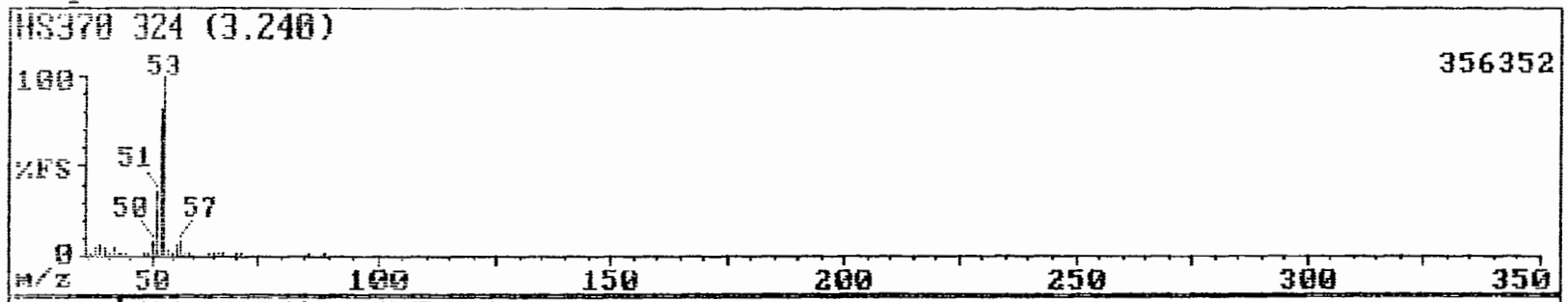
07-09-97 15:32 Triangle Laboratories of RTP, Inc. (919) 544-5729

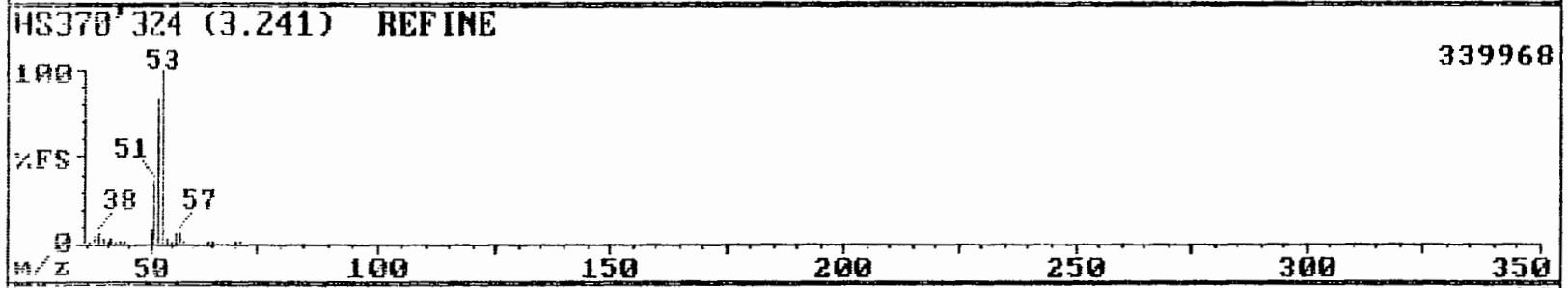
Sample: VOST-3 SET 3 TUBEA/B T/TC 173-46-12A/B TLI#42284 Instrument H

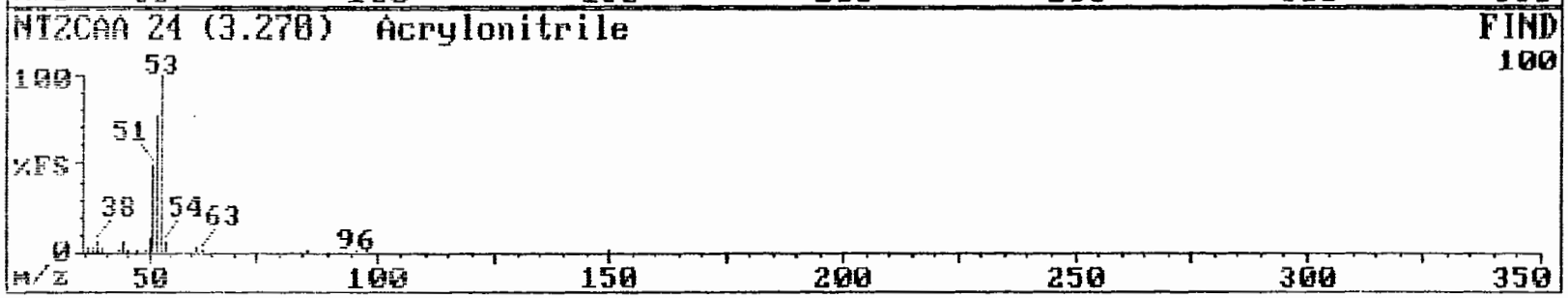


07-09-97 15:32 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 3 TUBEA/B T/TC 173-46-12A/B TLI#42284 Instrument H

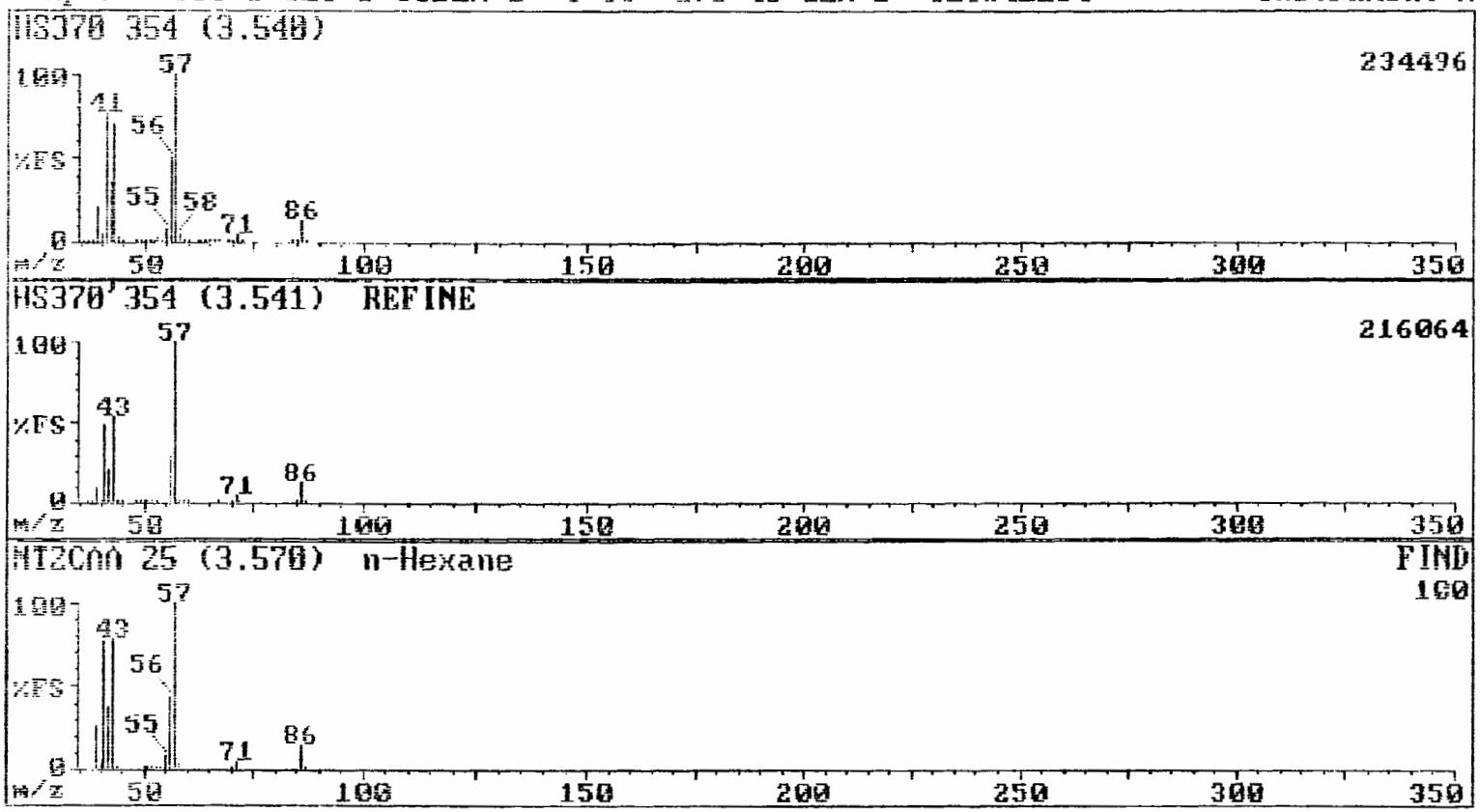






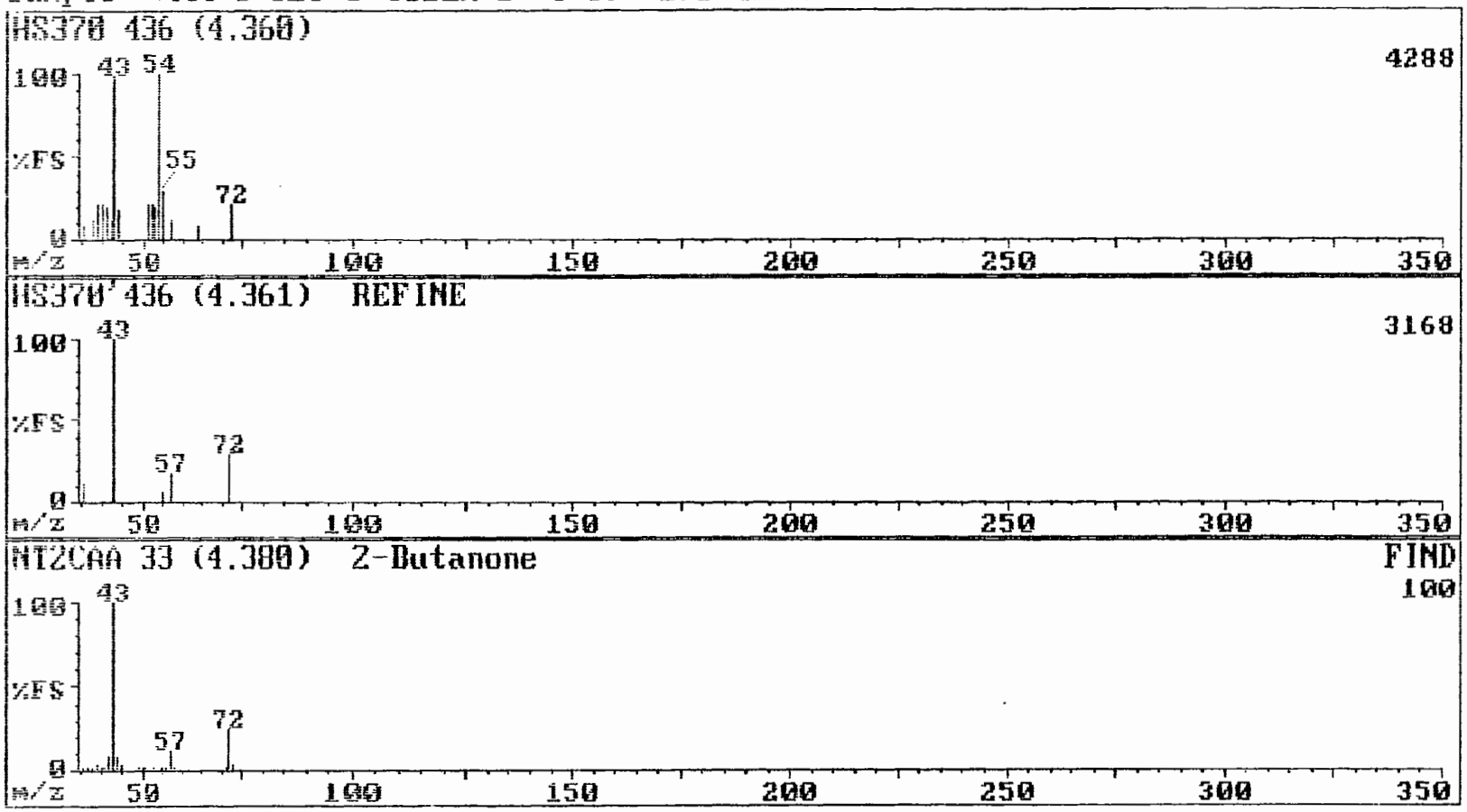
07-09-97 15:32 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 3 TUBEA/B T/TC 173-46-12A/B TLI#42284 Instrument H



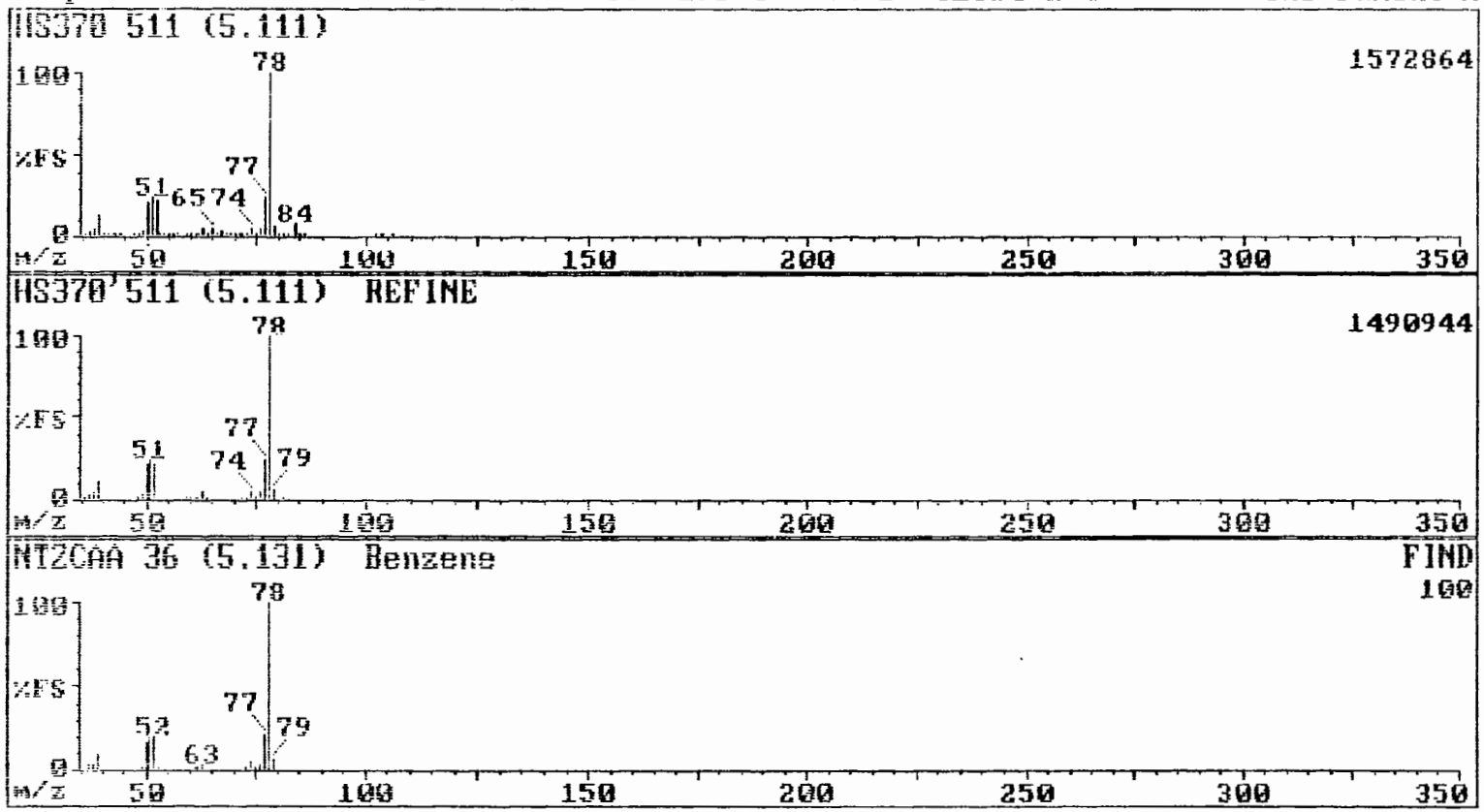
07-09-97 15:32 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 3 TUBEA/B T/TC 173-46-12A/B TLI#42284 Instrument H



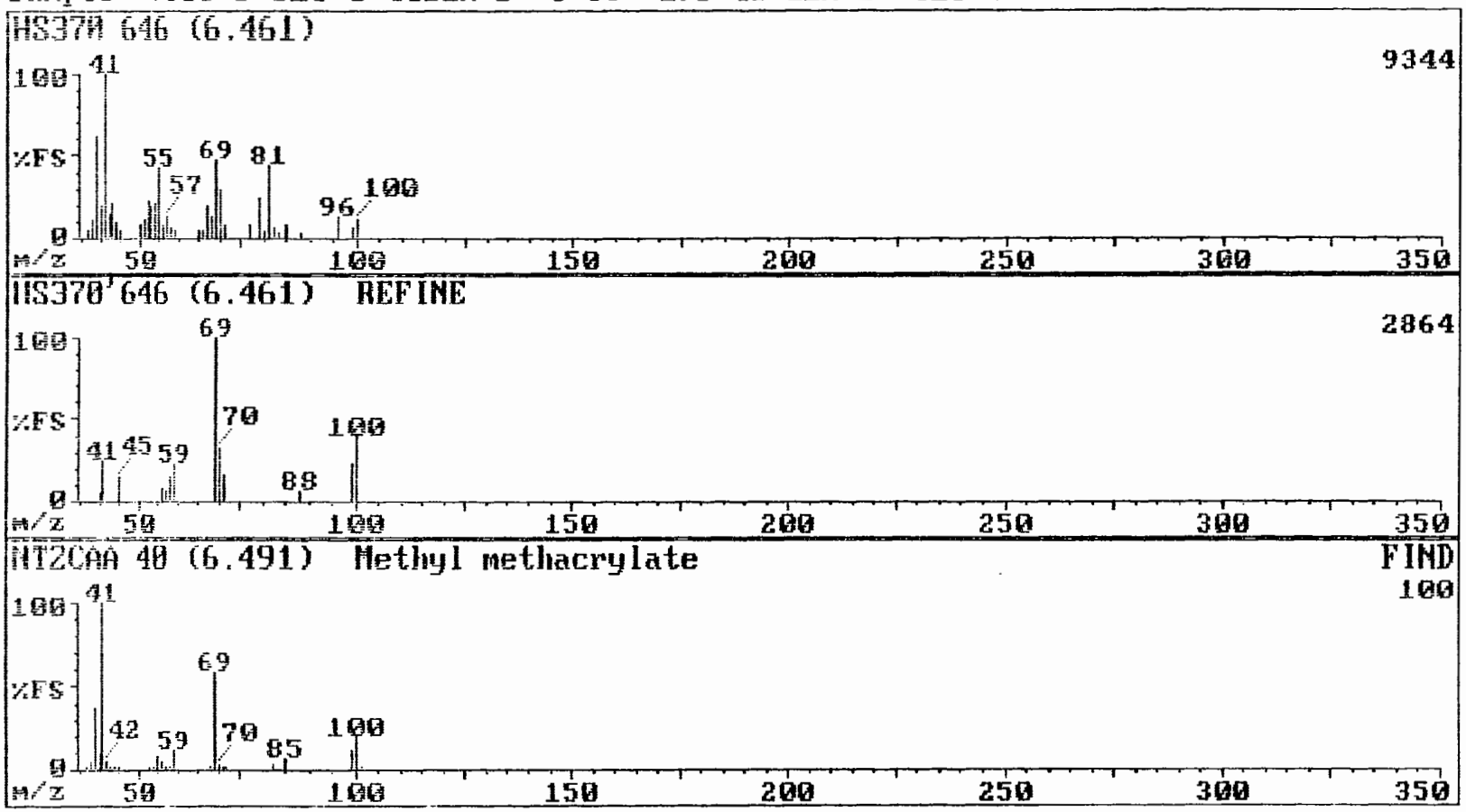
07-09-97 15:32 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 3 TUBEA/B T/TC 173-46-12A/B TLI#42284 Instrument H



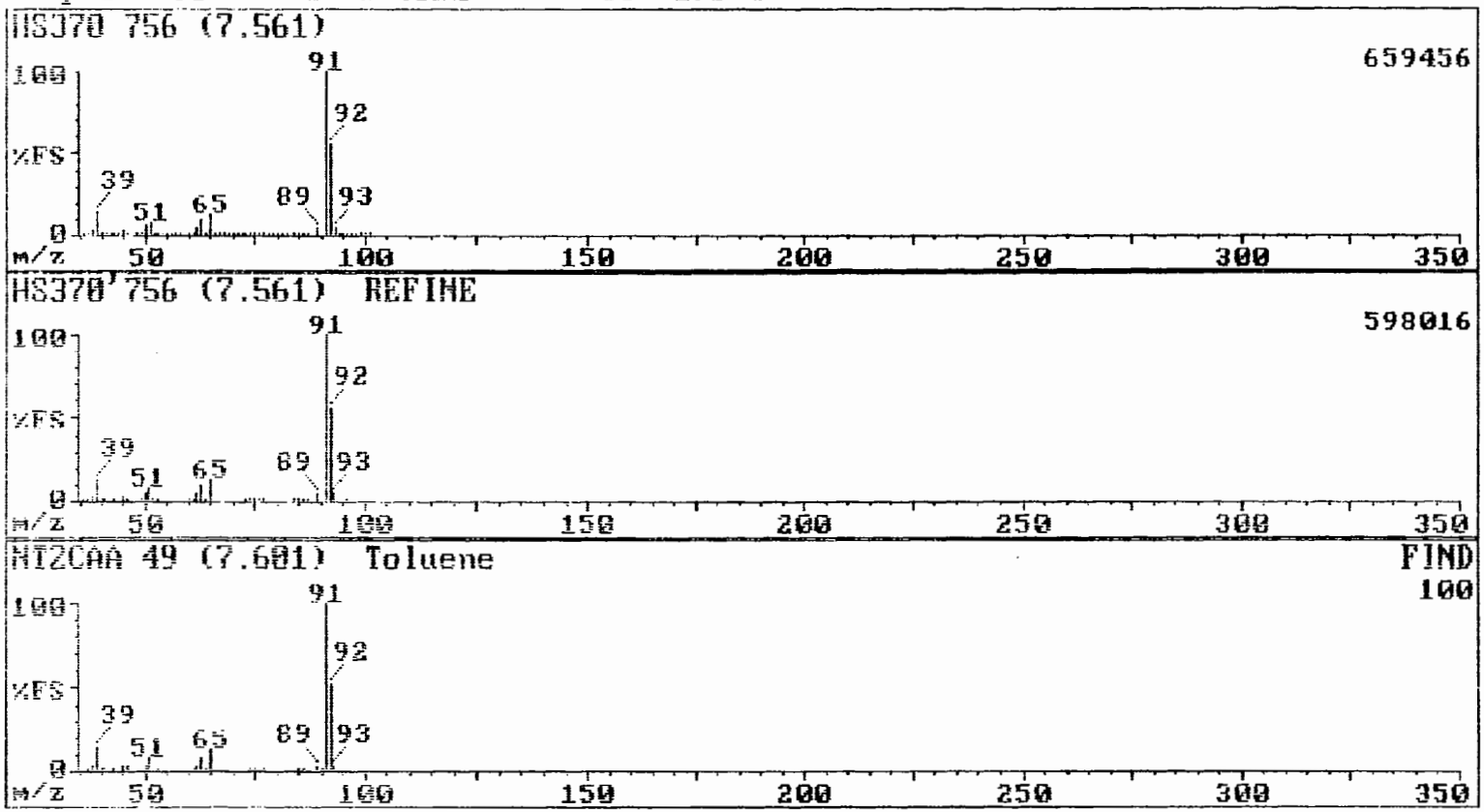
07-09-97 15:32 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 3 TUBEA/B T/TC 173-46-12A/B TLI#42284 Instrument H



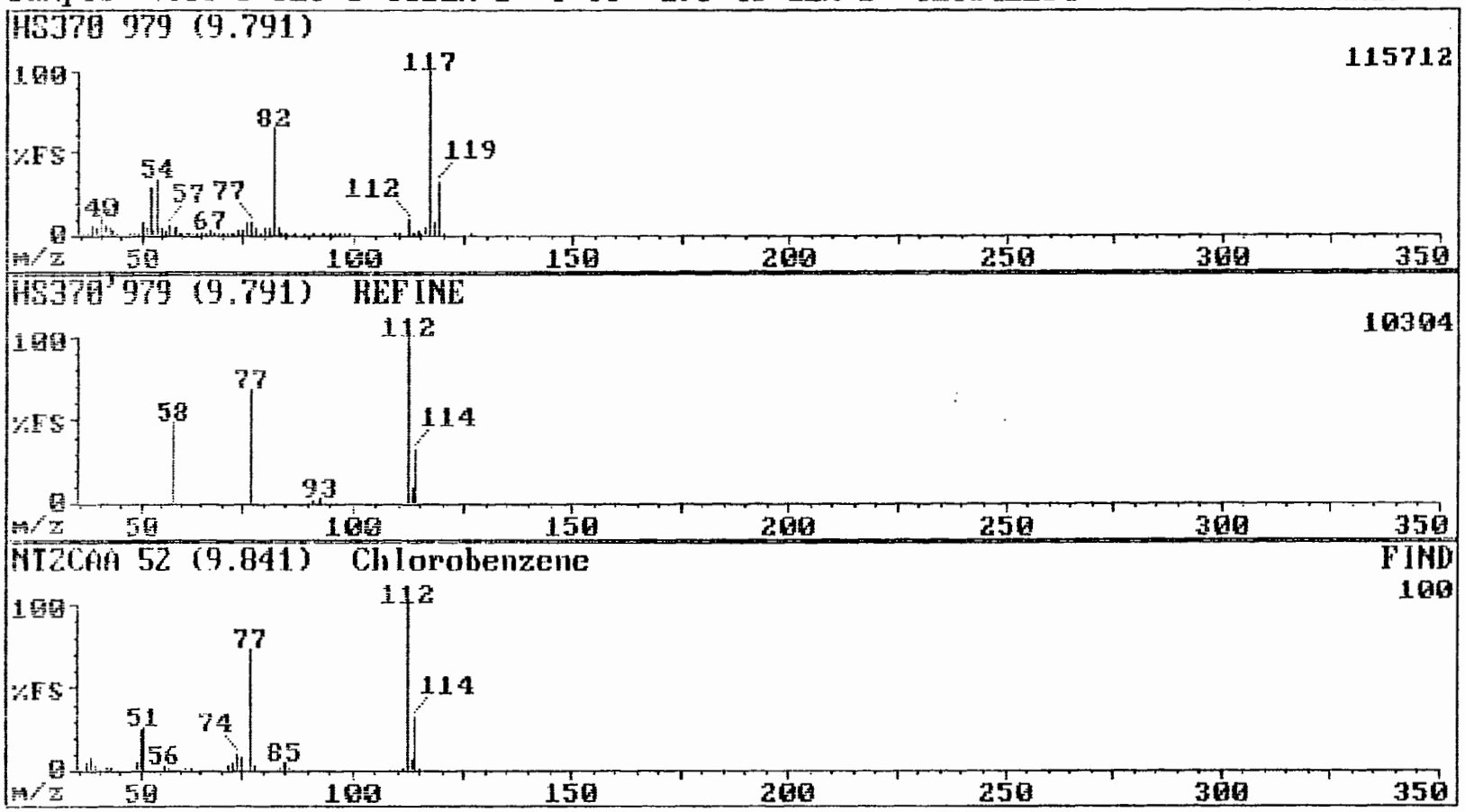
07-09-97 15:32 Trianyle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 3 TUBEA/B T/TC 173-46-12A/B TLI#42284 Instrument H



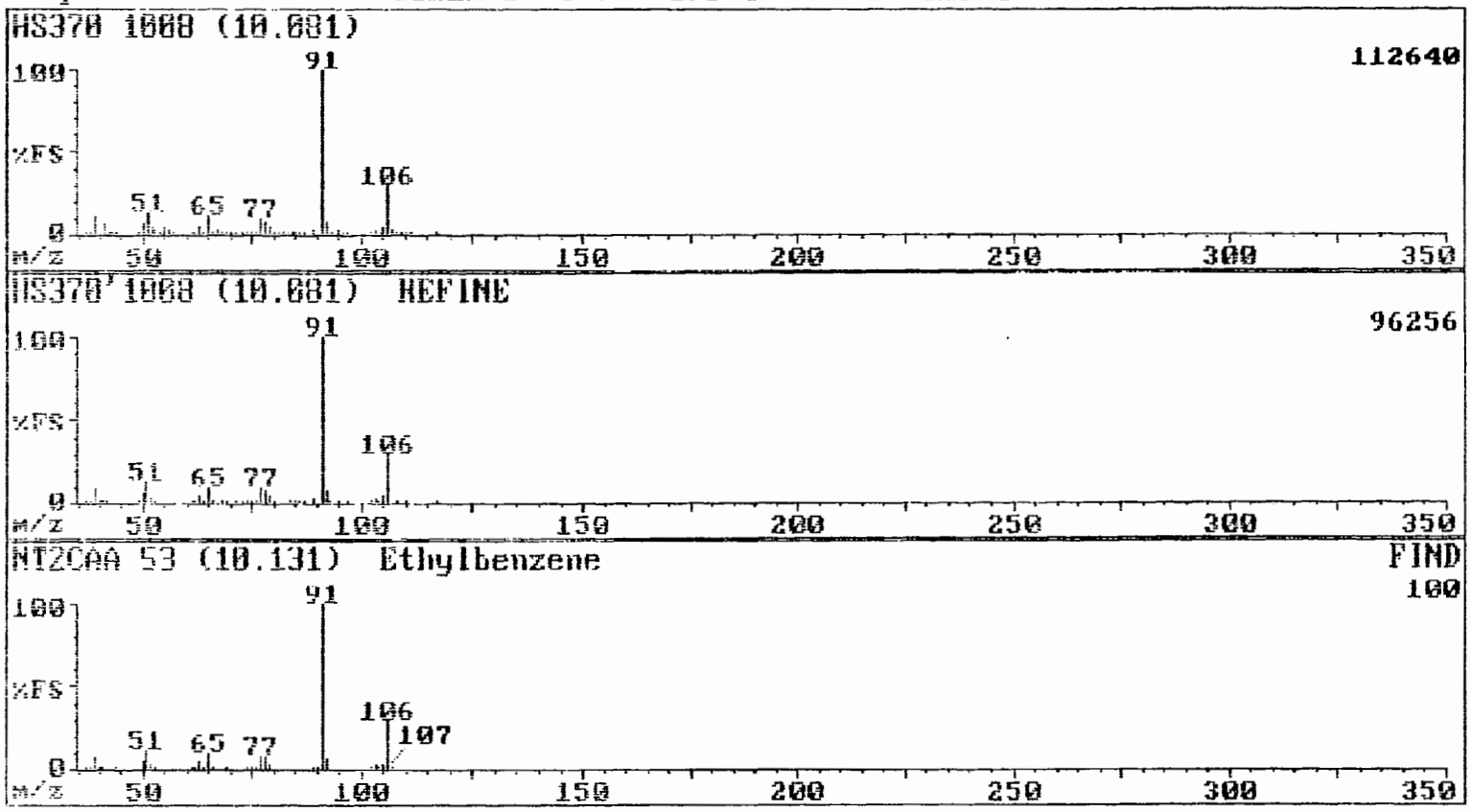
07-09-97 15:32 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 3 TUBEA/B T/TC 173-46-12A/B TLI#42284 Instrument H



07-09-97 15:32 Triangle Laboratories of RTP, Inc. (919) 544-5729

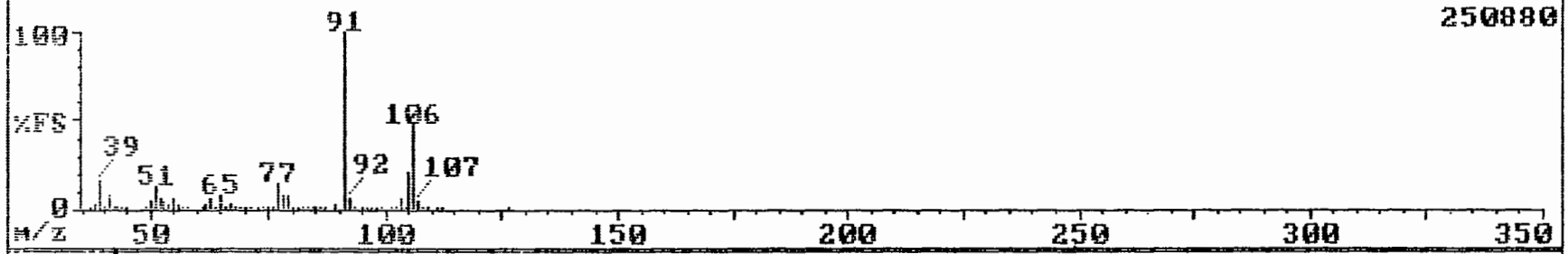
Sample: VOST-3 SET 3 TUBEA/B T/TC 173-46-12A/B TLI#42284 Instrument H



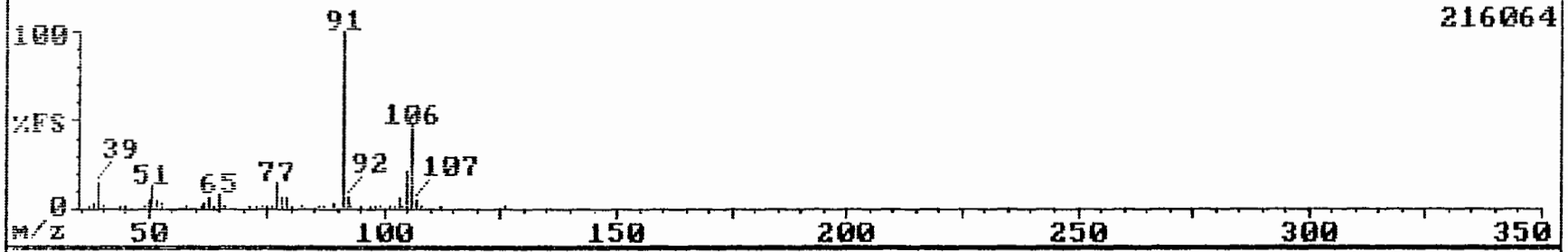
07-09-97 15:32 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 3 TUBEA/B T/TC 173-46-12A/B TLI#42284 Instrument H

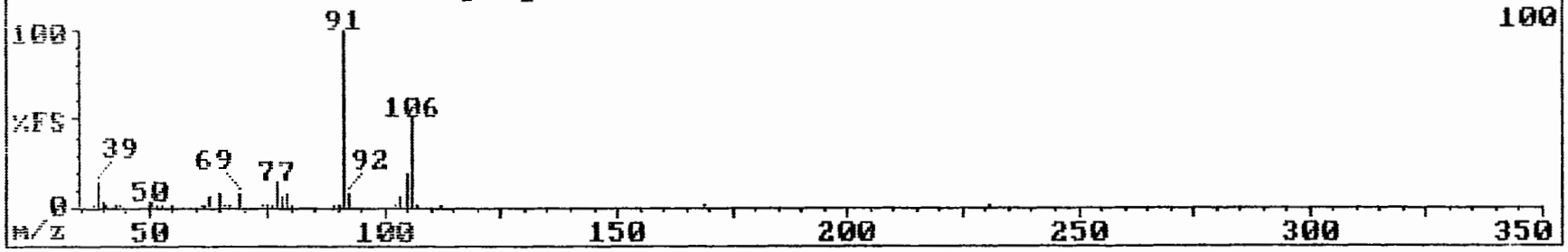
HS370 1031 (10.311) 250880



HS370 1031 (10.311) REFINE 216064

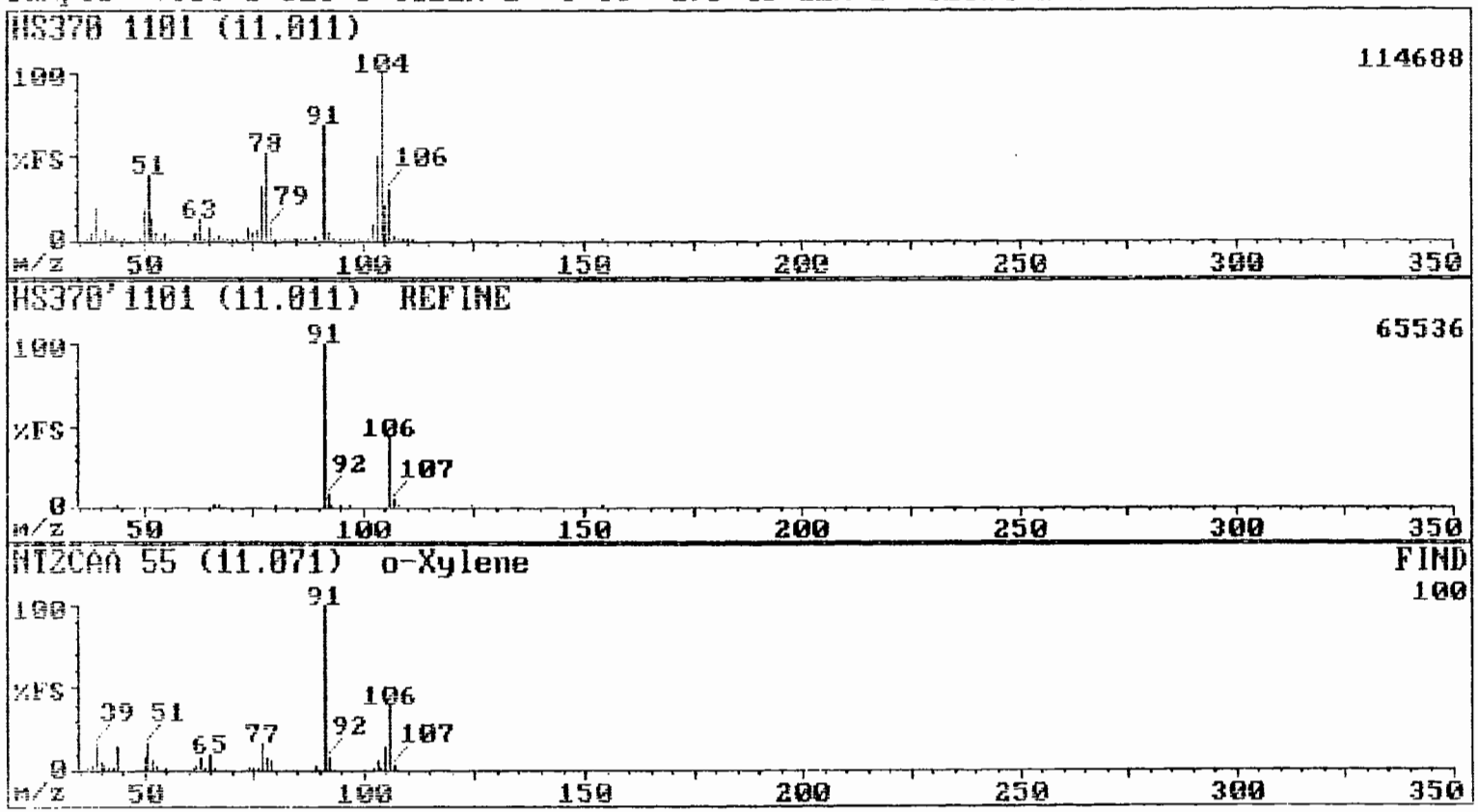


NT2CAA 54 (10.371) m-/p-Xylene FIND 100



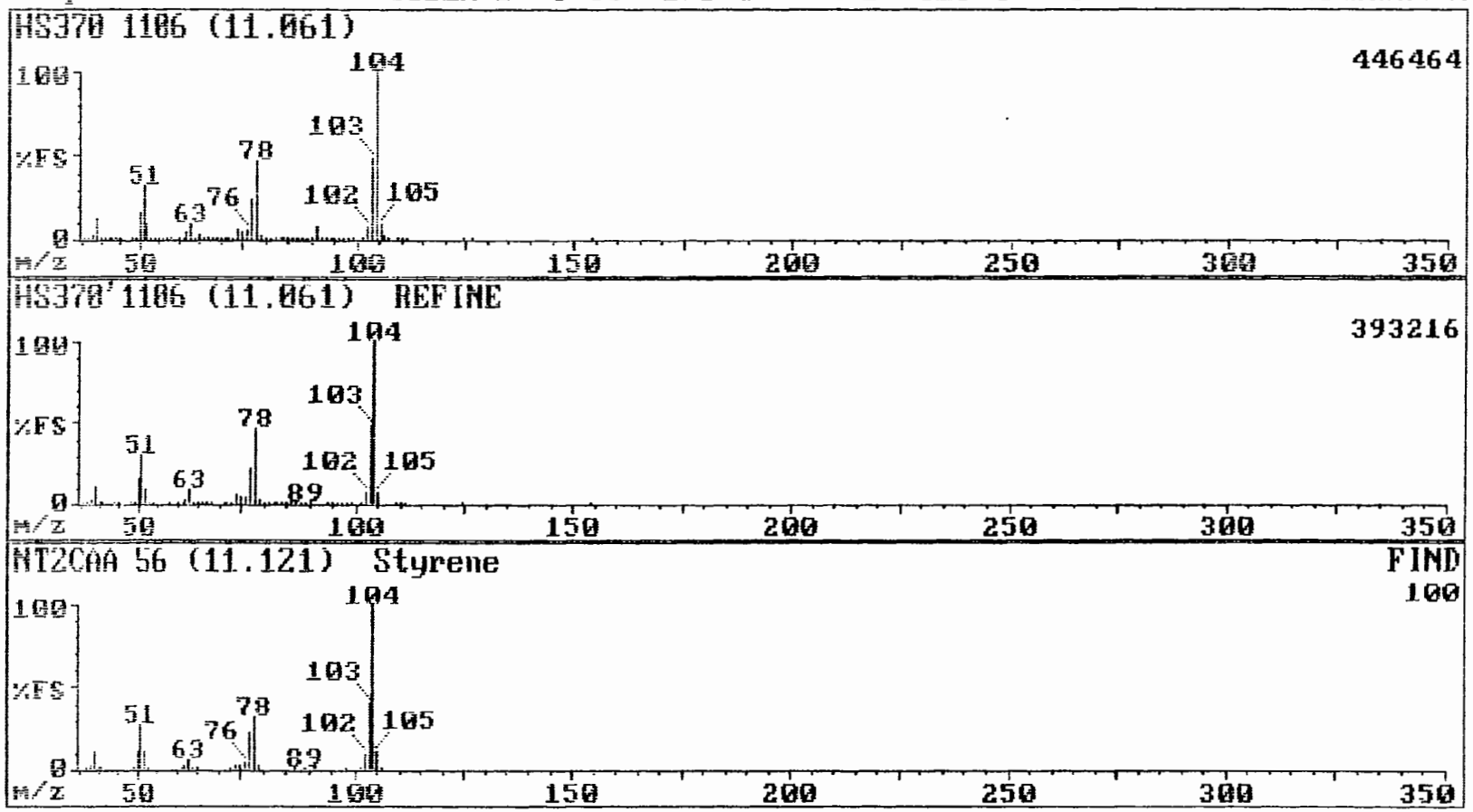
07-09-97 15:32 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 3 TUBEA/B T/TC 173-46-12A/B TLI#42284 Instrument H



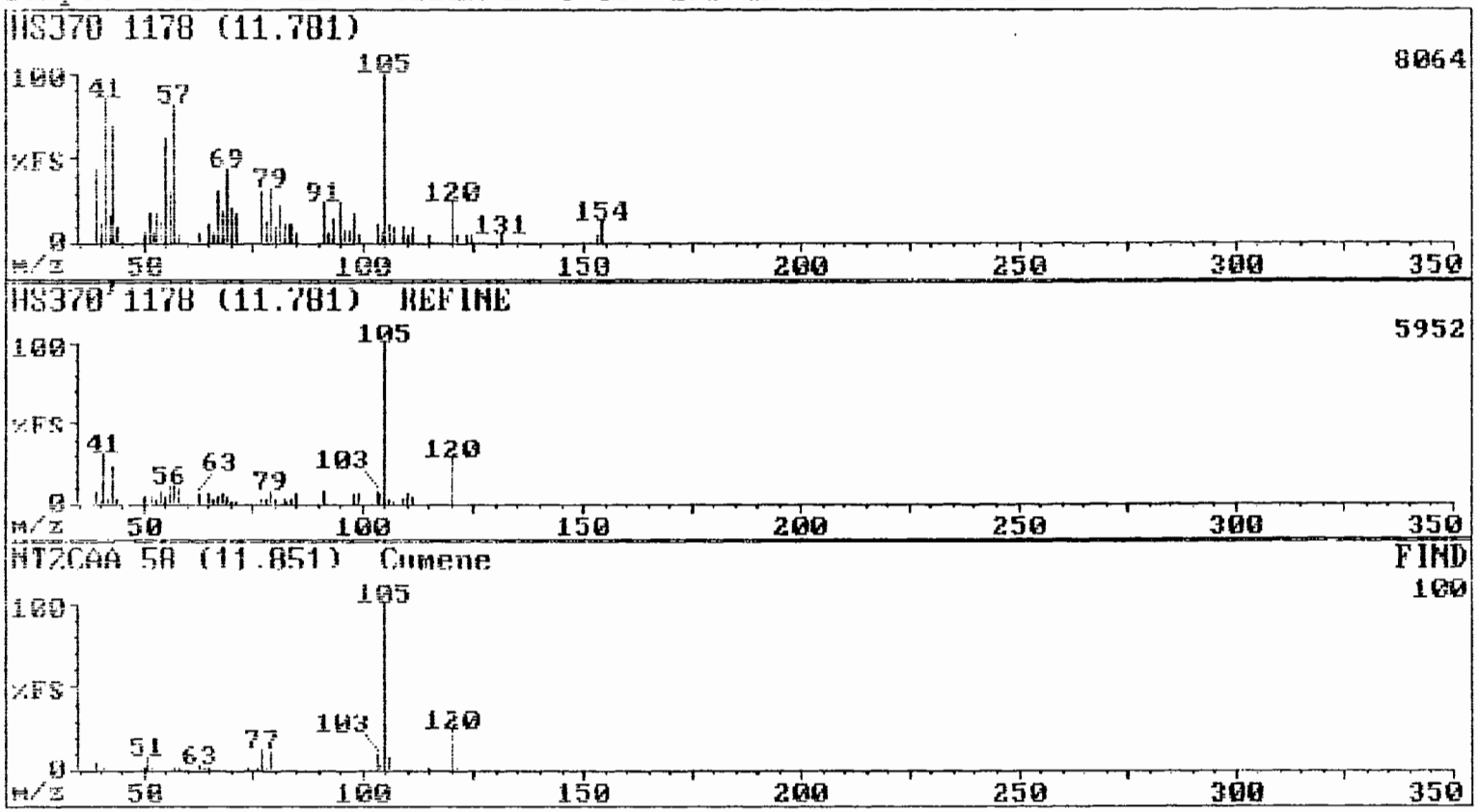
07-09-97 15:32 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 3 TUBEA/B T/TC 173-46-12A/B TLI#42284 Instrument H



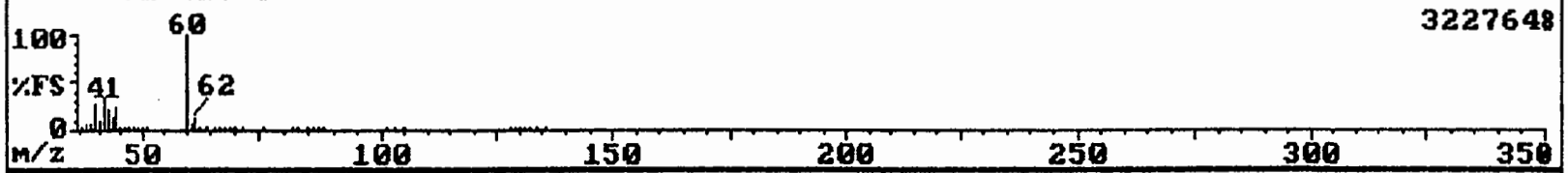
07 09-97 15:32 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 3 TUBEA/B T/TC 173-46-12A/B TLI#42284 Instrument H

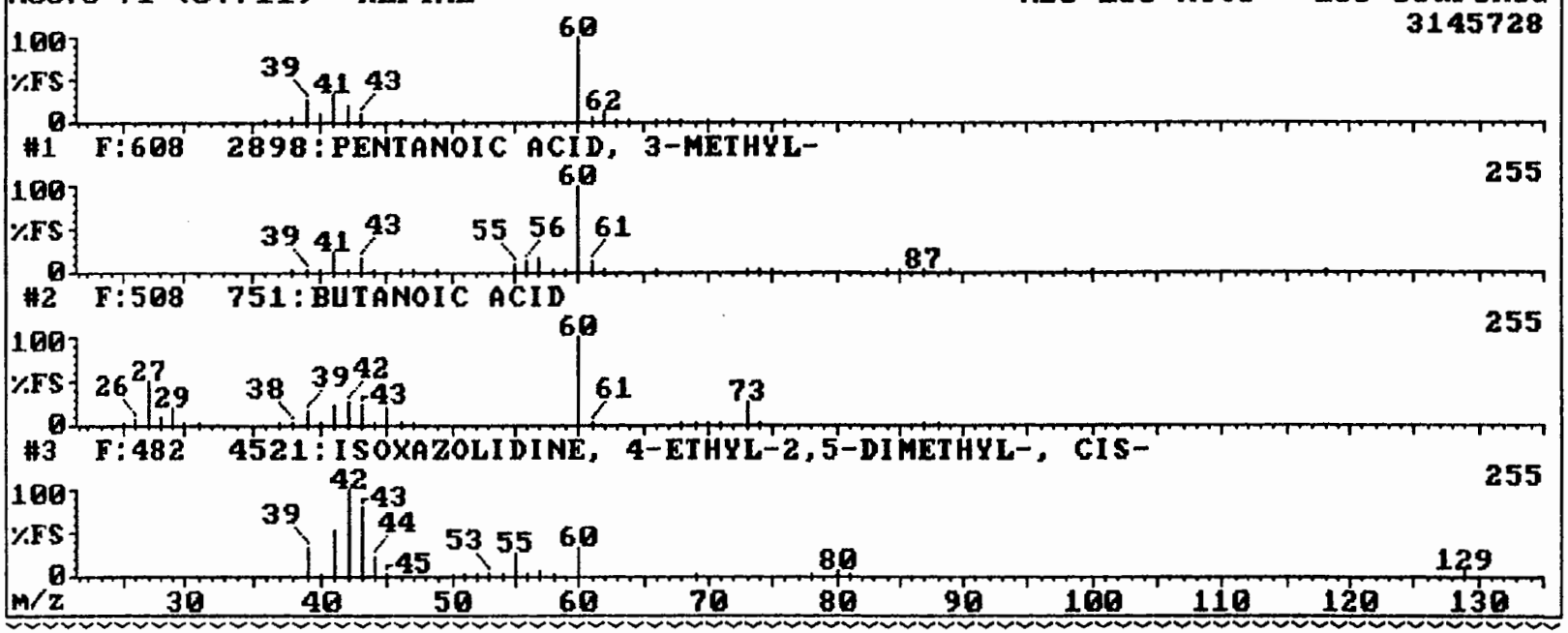


09-Jul-97 15:32 Triangle Laboratories of RTP, Inc. (919) 544-5729
Sample: VOST-3 SET 3 TUBEA/B T/TC 173-46-12A/B TLI#42284 Instrument H

HS370 71 (0.710) 3227648

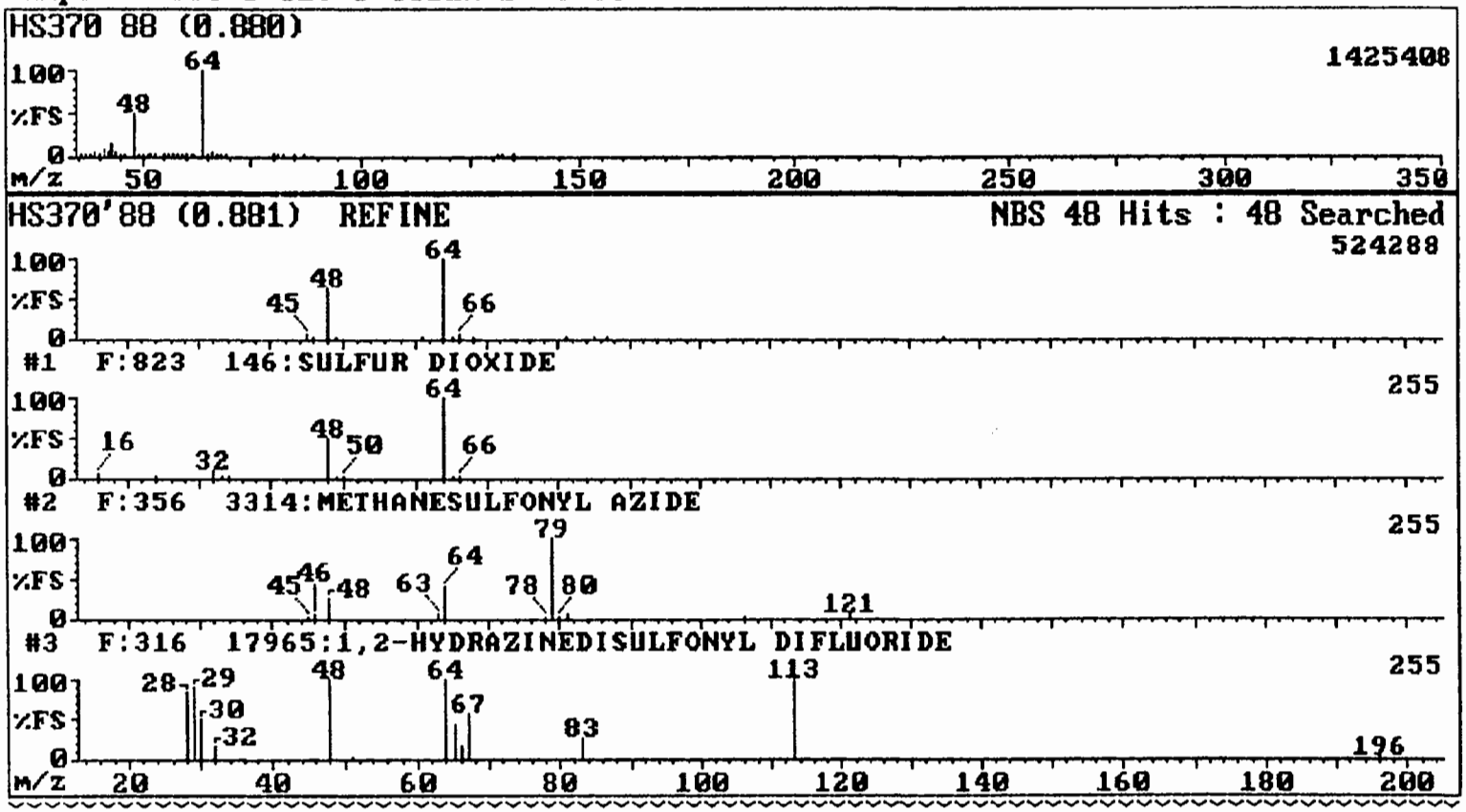


HS370'71 (0.711) REFINE NBS 258 Hits : 258 Searched



09-Jul-97 15:32 Triangle Laboratories of RTP, Inc. (919) 544-5729

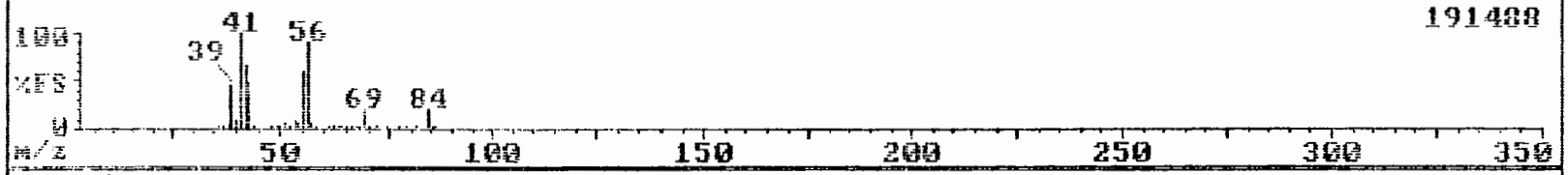
Sample: VOST-3 SET 3 TUBEA/B T/TC 173-46-12A/B TLI#42284 Instrument H



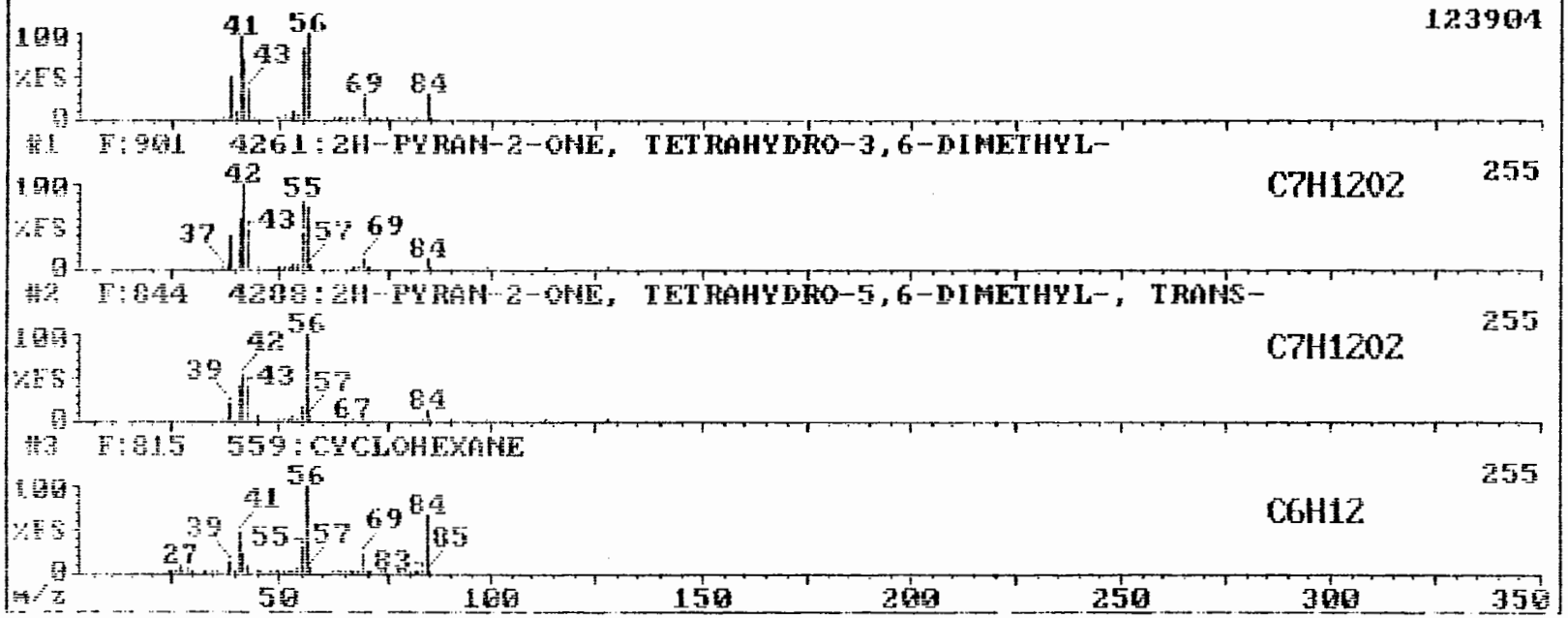
07/09/97 15:32 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 3 TUBEA/B T/TC 173-46-12A/B TLI#42284 Instrument: H

HS370 345 (3.450) NBS 191488



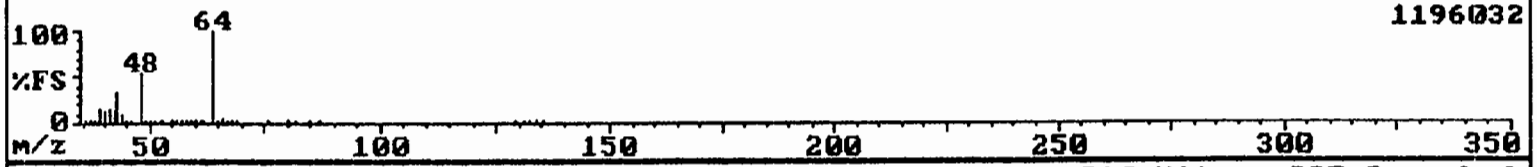
HS370'345 (3.451) REFINE NBS 61 Hits : 61 Searched 123904



09-Jul-97 15:32 Triangle Laboratories of RTP, Inc. (919) 544-5729

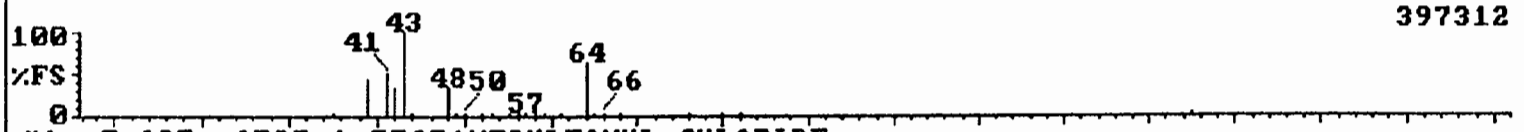
Sample: VOST-3 SET 3 TUBEA/B T/TC 173-46-12A/B TLI#42284 Instrument H

HS370 85 (0.850) 1196032



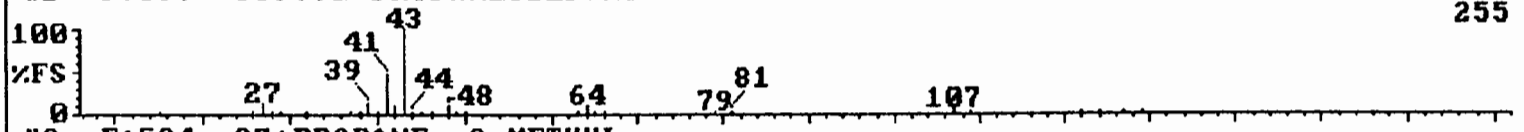
HS370'85 (0.851) REFINE NBS 397 Hits : 397 Searched

397312



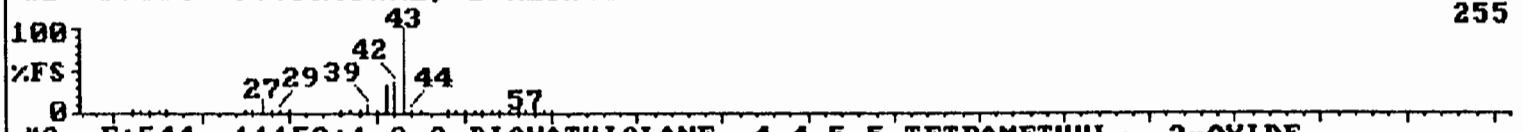
#1 F:697 6597:1-PROPANESULFONYL CHLORIDE

255



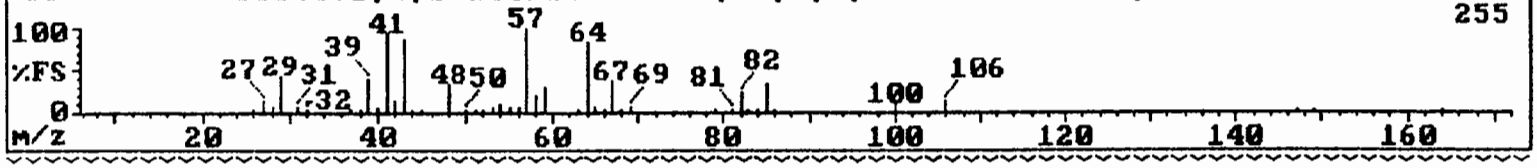
#2 F:584 97:PROPANE, 2-METHYL-

255



#3 F:544 11153:1,3,2-DIOXATHIOLANE, 4,4,5,5-TETRAMETHYL-, 2-OXIDE

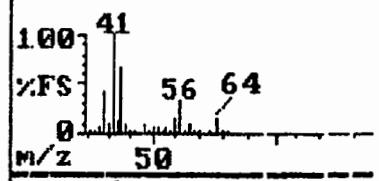
255



09-Jul-97 15:32 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 3 TUBEA/B T/TC 173-46-12A/B TLI#42284 Instrument H

HS370 102 (1.020)

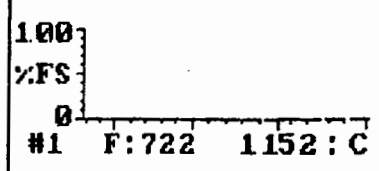


614400

100 150 200 250 300 350

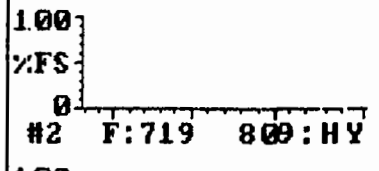
HS370 102 (1.021) REFINE NBS 58 Hits : 58 Searched

626688



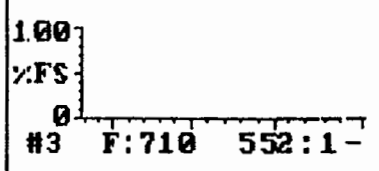
#1 F:722 1152:CYCLOBUTANONE, 3,3-DIMETHYL-

255



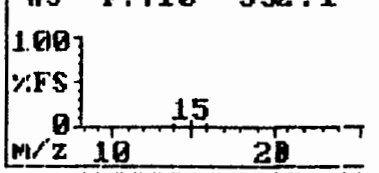
#2 F:719 809:HYDROXYLAMINE, O-(2-METHYLPROPYL)-

255



#3 F:710 552:1-PENTENE, 4-METHYL-

255

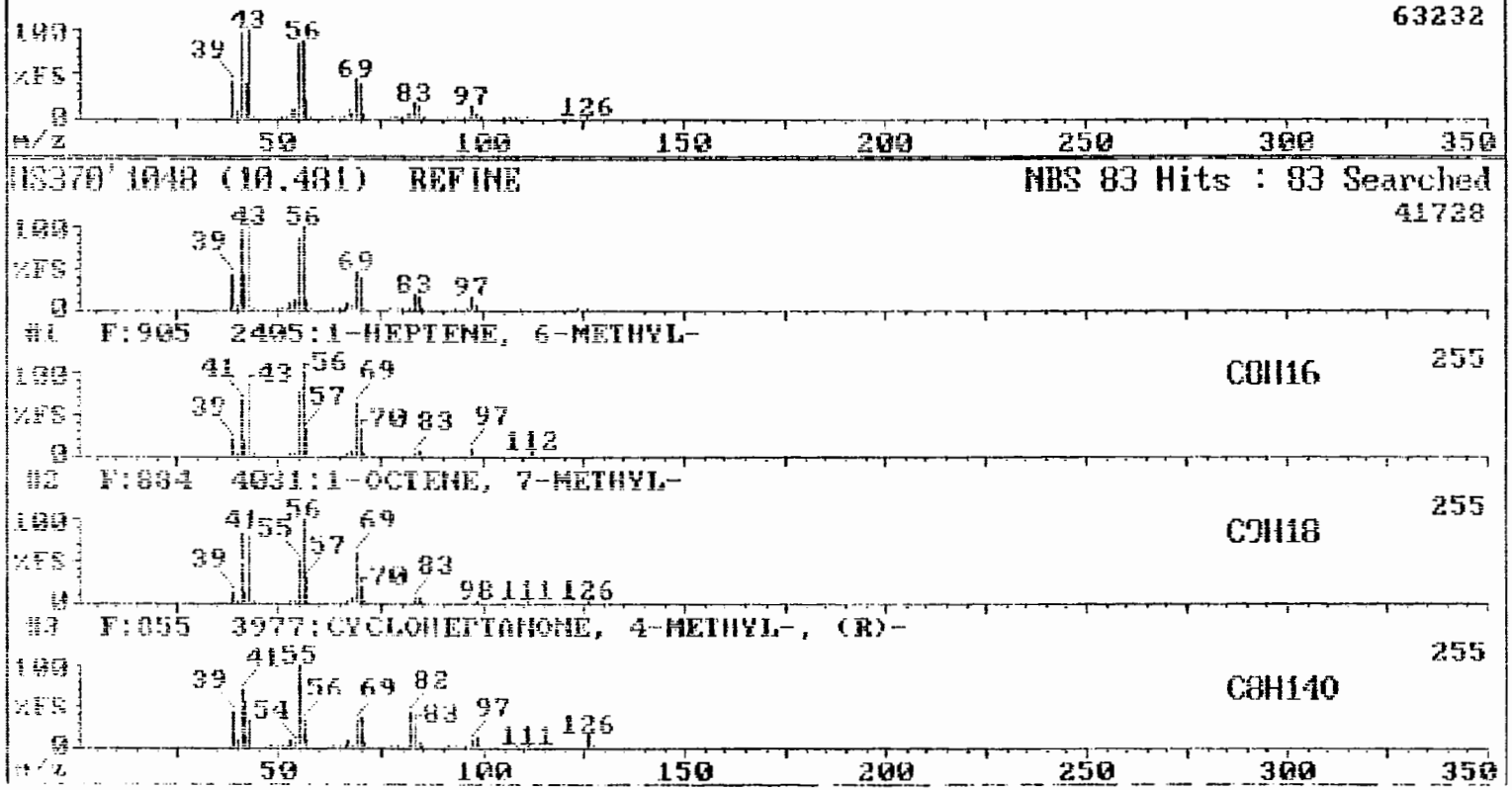


30 40 50 60 70 80 90 100

07/09/97 15:32 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 3 TUBEA/B T/TC 173-46-12A/B TLI#42284 Instrument: H

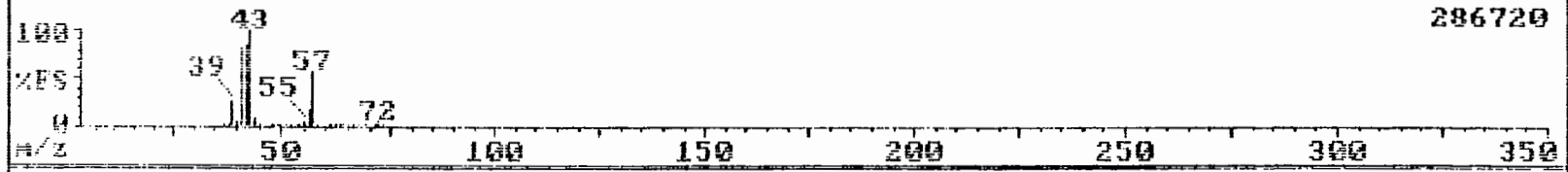
HS370 1048 (10.481) NBS 63232



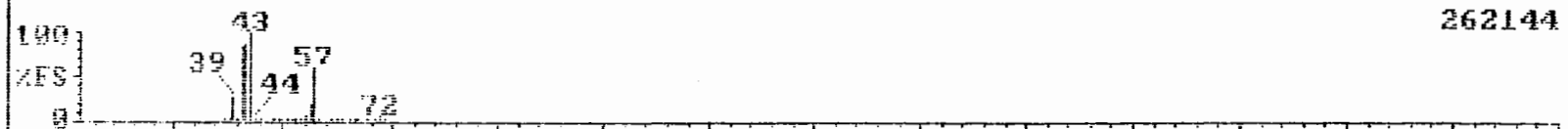
07/09/97 15:32 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 3 TUBEA/B T/TC 173-46-12A/B TLI#42284 Instrument: H

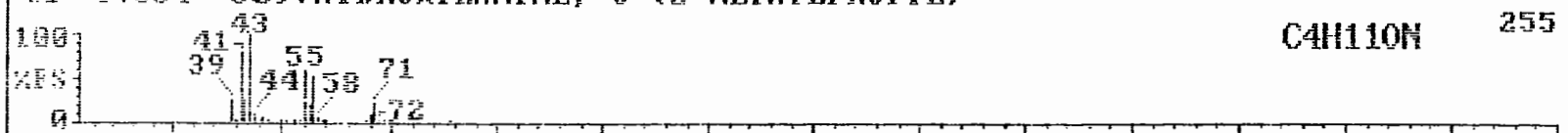
MS370 162 (1.620) NBS 286720



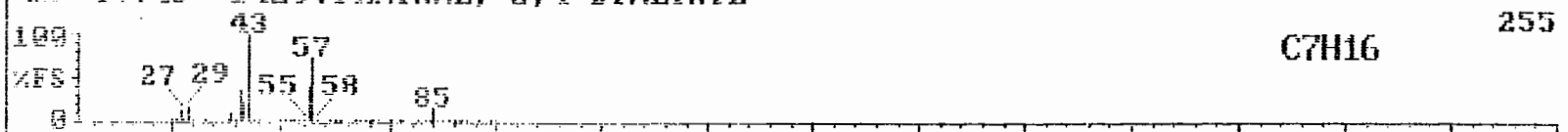
MS370 162 (1.621) REFINE NBS 242 Hits : 242 Searched 262144



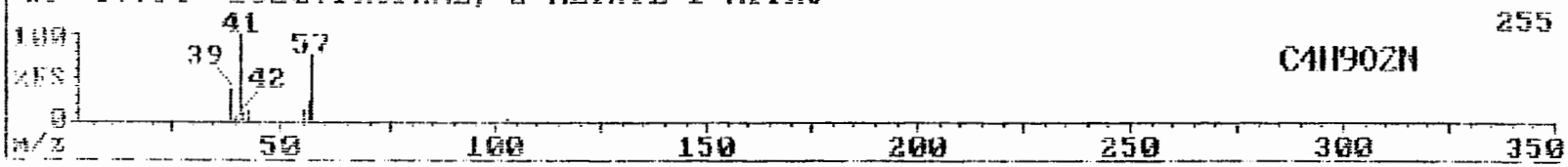
#1 F:834 809:HYDROXYLAMINE, O-(2-METHYLPROPYL)- C4H11ON 255



#2 F:746 1429:PENTANE, 2,4-DIMETHYL- C7H16 255



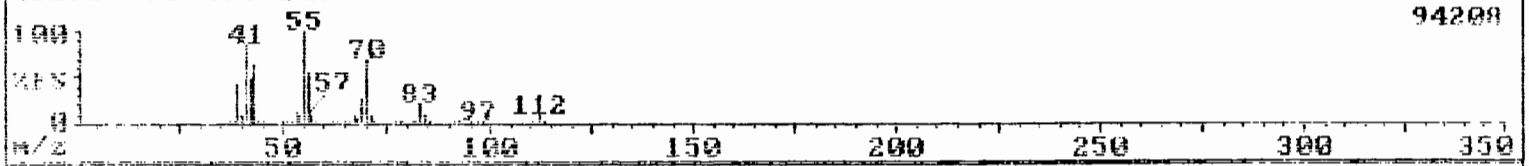
#3 F:734 1620:PROPANE, 2-METHYL-1-NITRO- C4H9O2N 255



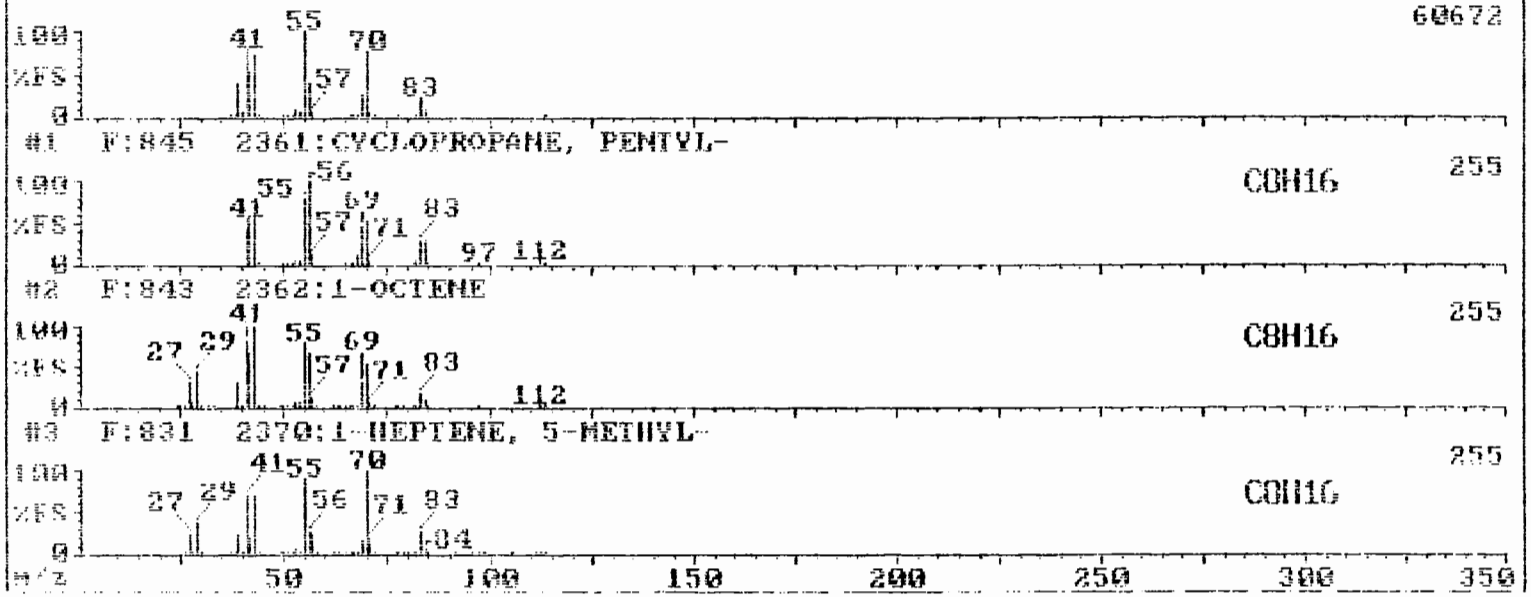
07/09/97 15:32 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 3 TUBEA/B T/TC 173-46-12A/B TLI#42284 Instrument: H

HS370 779 (7.791) NBS 94200



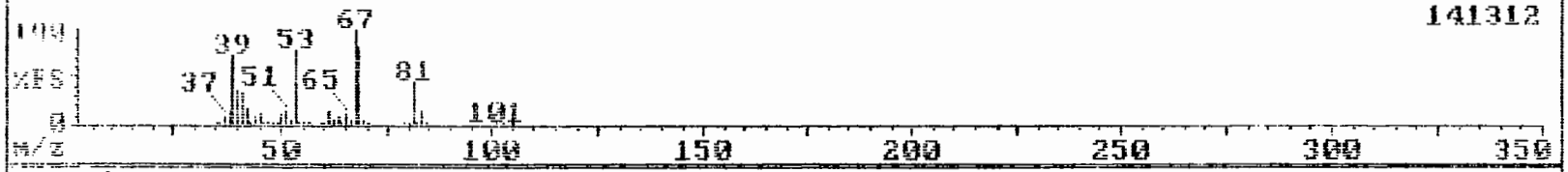
HS370'779 (7.791) REFINE NBS 112 Hits : 112 Searched



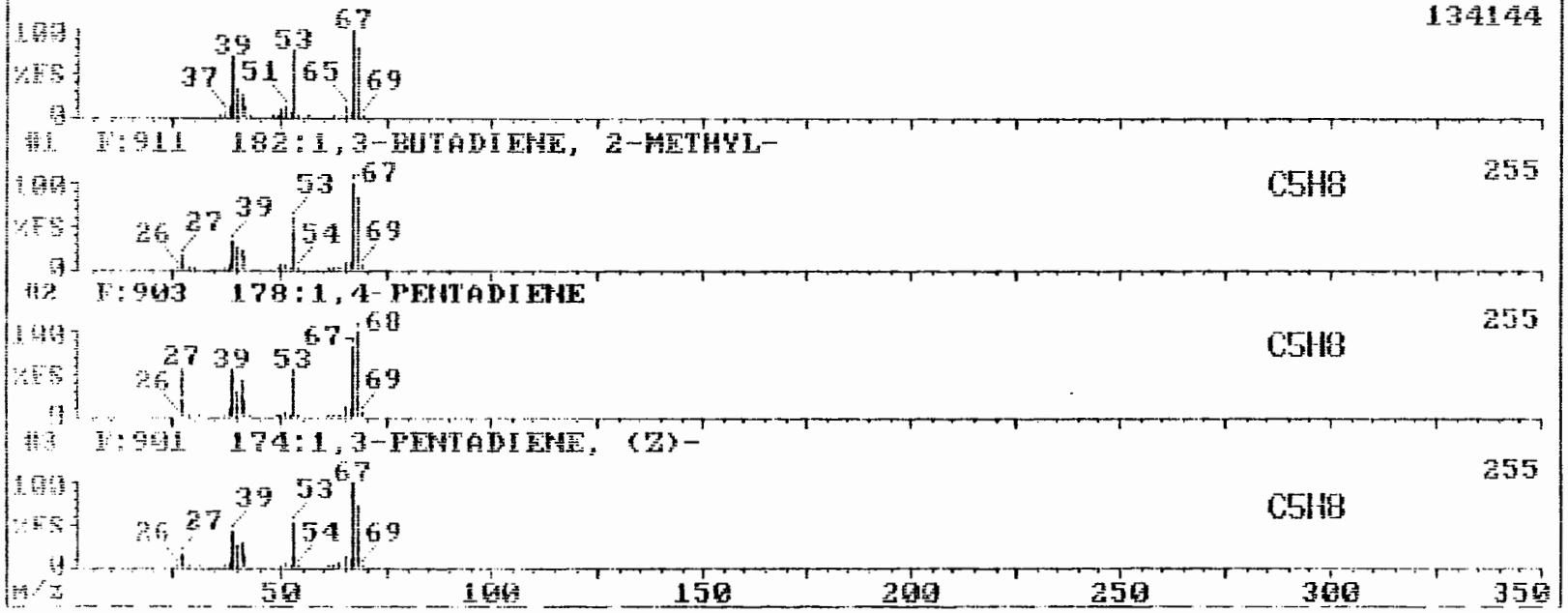
07/09/97 15:32 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 3 TUBEA/B T/TC 173-46-12A/B TLI#42284 Instrument: H

MS370 218 (2.180) NBS 141312

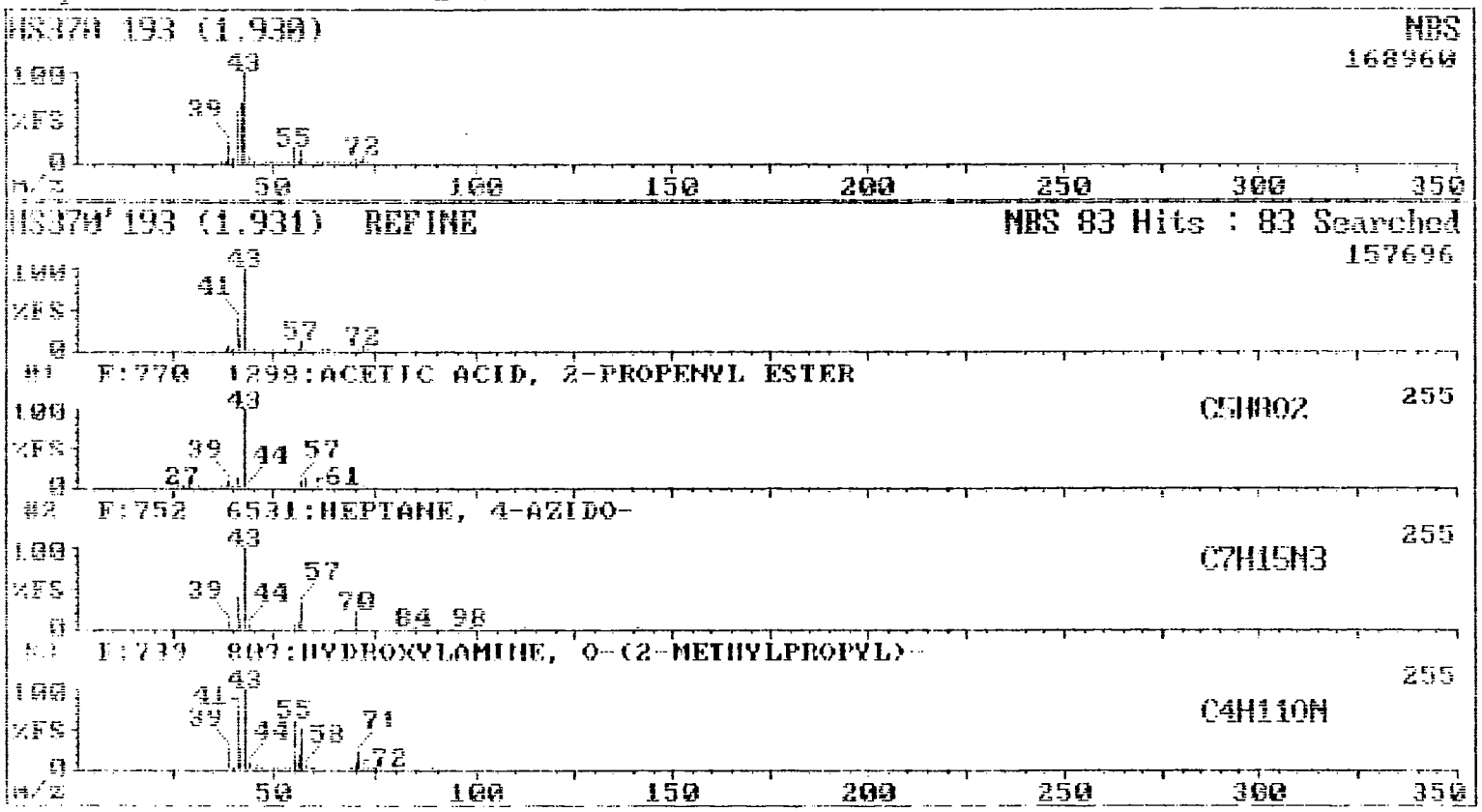


MS370'218 (2.181) REFINE NBS 33 Hits : 33 Searched 134144



07/09/97 15:32 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 3 TUBEA/B T/TC 173-46-12A/B TLI#42284 Instrument: H



Pacific Environmental Services

Project Number: 42284 | **Method 8240A VOST**
Sample File: HS371 | **Sample ID: VOST-3 SET 4 TUBEA/B T/TC**

Client Project: S407-003 | **Date Received: 06/30/97** | **Response File: ICALH708**
TLI ID: 173-46-13A,B
Date Analyzed : 07/09/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
Bromochloromethane		IS 1	4.48		
Chloromethane	0.287		0.92		0.05
Vinyl Chloride		U		0.001	0.05
1,3-Butadiene	0.714		1.08		0.05
Bromomethane	0.020	J	1.41		0.05
Chloroethane	0.137		1.53		0.05
Vinyl bromide		U		0.001	0.05
Trichlorofluoromethane	0.031	J	1.82		0.05
1,1-Dichloroethene		U		0.001	0.05
Iodomethane		U		0.001	0.05
Carbon disulfide	1.107	E	2.48		0.05
Acetone	0.136	B	2.55		0.05
Allyl chloride		U		0.001	0.05
Methylene chloride	1.275	BE	2.95		0.05
trans-1,2-Dichloroethene		U		0.001	0.05
tert-Butyl methyl ether		U		0.001	0.05
Acrylonitrile	6.424	E	3.25		0.05
n-Hexane	0.517		3.54		0.05
1,1-Dichloroethane		U		0.001	0.05
1,2-Epoxybutane		U		0.003	0.05
cis-1,2-Dichloroethene		U		0.001	0.05
Chloroform		U		0.001	0.05
1,2-Dichloroethane		U		0.001	0.05
Isooctane		U		0.001	0.05
1,4-Difluorobenzene		IS 2	5.63		
Vinyl acetate		U		0.001	0.05

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

Pacific Environmental Services

Project Number: 42284 | **Method 8240A VOST**
Sample File: HS371 | **Sample ID: VOST-3 SET 4 TUBEA/B T/TC**

Client Project: S407-003 | **Date Received: 06/30/97** | **Response File: ICALH708**
TLI ID: 173-46-13A,B
Date Analyzed : 07/09/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
2-Butanone	0.019	J	4.35		0.05
1,1,1-Trichloroethane		U		0.001	0.05
Carbon tetrachloride		U		0.001	0.05
Benzene	1.838	BE	5.10		0.05
Trichloroethene		U		0.001	0.05
1,2-Dichloropropane		U		0.001	0.05
Ethyl acrylate		U		0.001	0.05
Methyl methacrylate	0.103		6.45		0.05
Bromodichloromethane		U		0.001	0.05
cis-1,3-Dichloropropene		U		0.001	0.05
trans-1,3-Dichloropropene		U		0.001	0.05
1,1,2-Trichloroethane		U		0.001	0.05
Dibromochloromethane		U		0.001	0.05
Ethylene dibromide		U		0.001	0.05
Bromoform		U		0.001	0.05
Chlorobenzene-d_5		IS 3	9.74		
4-Methyl-2-pentanone		U		0.001	0.05
Toluene	1.099	BE	7.56		0.05
Tetrachloroethene		U		0.001	0.05
2-Hexanone		U		0.001	0.05
Chlorobenzene	0.012	J	9.79		0.05
Ethylbenzene	0.175		10.08		0.05
m-/p-Xylene	0.252		10.31		0.10
o-Xylene	0.092		11.03		0.05
Styrene	1.987	E	11.08		0.05
1,1,2,2-Tetrachloroethane		U		0.001	0.05

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

Triangle Laboratories of RTP, Inc.
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Savar v3.5
Printed: 15:03 07/22/1997

Pacific Environmental Services

Project Number: 42284 | **Method 8240A VOST**
Sample File: HS371 | **Sample ID: VOST-3 SET 4 TUBEA/B T/TC**

Client Project: S407-003 | **Date Received: 06/30/97** | **Response File: ICALH708**
TLI ID: 173-46-13A,B
Date Analyzed : 07/09/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
Cumene	0.006	J	11.79		0.05

Surrogate Summary	Amount (ug)	RT	IS Ref	%REC
1,2-Dichloroethane-d_4	0.217	5.08	1	87
Benzene-d_6	0.255	5.06	2	102
Toluene-d_8	0.281	7.47	3	112

Reviewed by TW Date 7/22/97

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

Triangle Laboratories of RTP, Inc.
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Savar v3.5
Printed: 15:03 07/22/1997

Pacific Environmental Services

Project Number: 42284 Method 8240A

Sample File: HS371 Sample ID: VOST-3 SET 4 TUBEA/B T/TC

Client Project:	S407-003	Date Received:	06/30/97
TLI ID:	173-46-13A,B	Date Analyzed:	07/09/97
	Dilution Factor:	1.00	

Tentatively Identified Compounds

Name	RT	Area	IS RT	IS Area	Amount, ug
Unknown	0.711	46039136	9.741	12110536	0.950
Hexamethylcyclotrisiloxane	8.651	28698900	9.741	12110536	0.592
C6H12 Isomer	3.450	28282712	9.741	12110536	0.584
C4H8 Isomer	1.011	24188248	9.741	12110536	0.499
Sulfur Dioxide	0.891	24188248	9.741	12110536	0.499
C7H14 Isomer	5.421	21905056	9.741	12110536	0.452
C8H16 Isomer	7.791	16296904	9.741	12110536	0.336
Methylbutane Isomer	1.620	15291239	9.741	12110536	0.316
C5H8 Isomer	2.180	13215533	9.741	12110536	0.273
C9H18 Isomer	10.481	10799890	9.741	12110536	0.223

Triangle Laboratories, Inc.
801 Capitola Drive * Durham, North Carolina 27713
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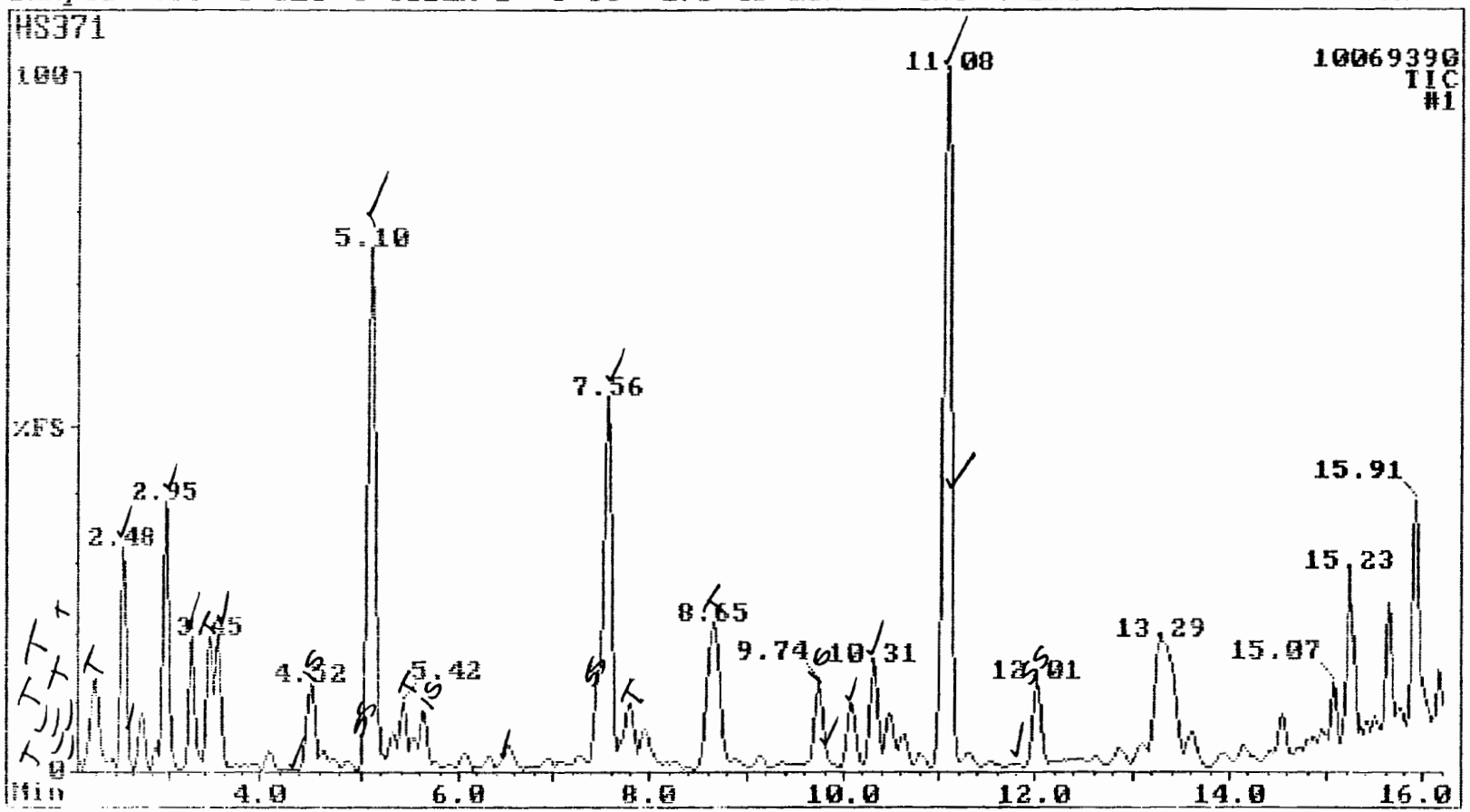
Printed: 22:30 07/25/97

07-09-97 15:56 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 4 TUBEA/B T/TC 173-46-13A/B TLI#42284 Instrument H



Data Review: TW
Date: 7-20-97

JUAN-03 : 48371 LAB-BASE QUNN 07-09-97 16:25

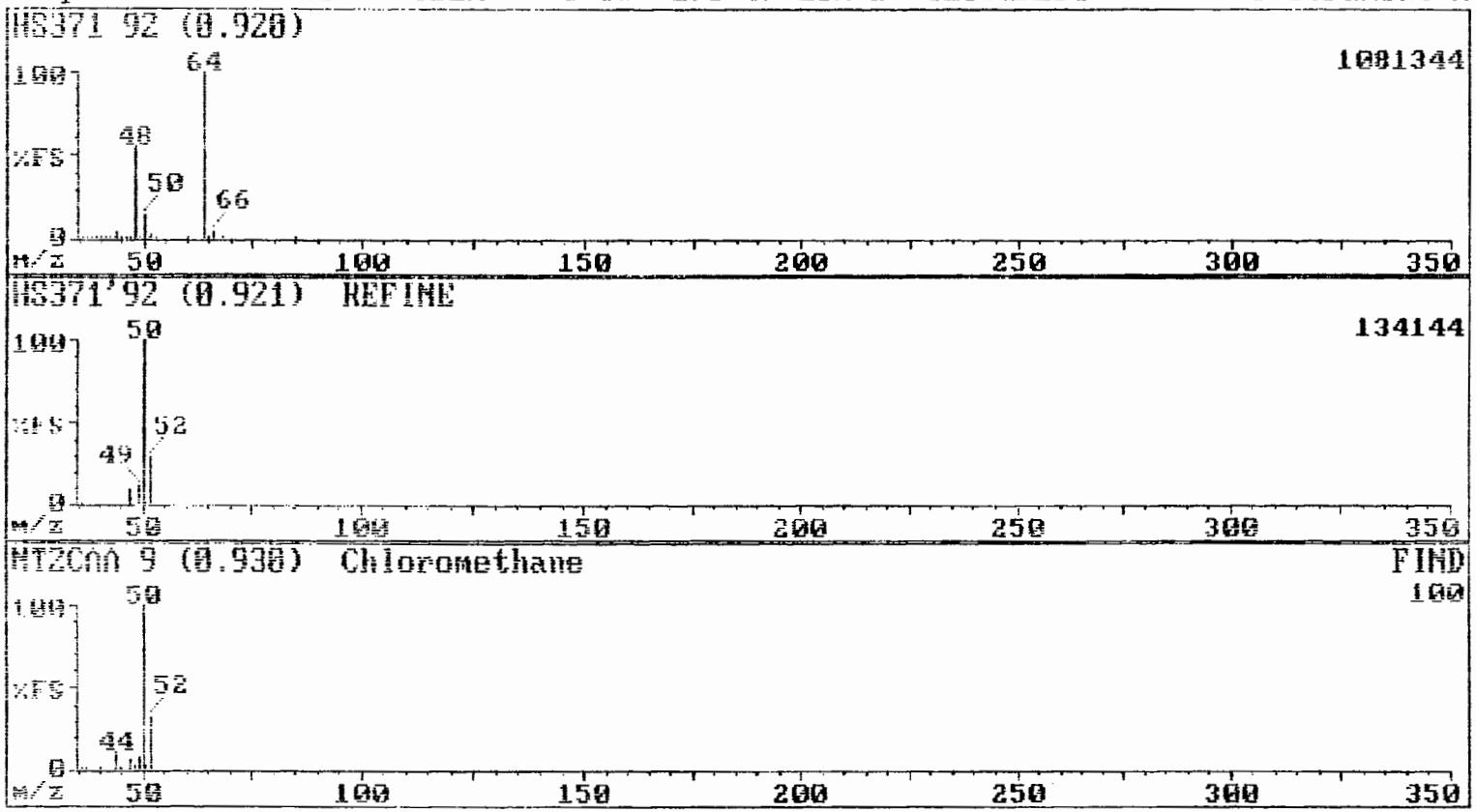
No.	MCT	FOR	REV	Delta	Area	P.Flags	RT	QM	Name
1	96	73	97	-3	376939	bb	4.45	128	Bromochloromethane
2	100	88	97	1	2132016	bb	5.63	114	1,4-Difluorobenzene
3	100	95	95	-1	2894056	bv	9.74	117	Chlorobenzene-d5
4	46	16	55	1	880782	bv	5.08	63	1,2-Dichloroethane-d4
5	97	78	80	0	2509729	bb	5.06	84	Benzene-d6
6	100	85	95	1	3697340	bv	7.47	98	Toluene-d8
~~7~~	~~26~~	~~11~~	~~66~~	~~-11~~	~~27144~~	~~vv~~	~~12.36~~	~~95~~	o-Xylene-d10 FP TW
8	100	85	94	1	1870107	vv	12.01	95	4-Bromofluorobenzene
9	56	44	45	0	910284	vv	0.92	50	Chloromethane
10	0	0	0	0	0		0.00	62	Vinyl Chloride
11	100	85	100	0	2840338	vv	1.08	39	1,3-Butadiene
12	86	42	95	0	66628	bb	1.41	94	Bromomethane
13	48	26	51	0	287459	A	1.53	64	Chloroethane
14	0	0	0	0	0		0.00	106	Vinyl bromide
15	61	24	77	-1	134848	bb	1.82	101	Trichlorofluoromethane
16	0	0	0	0	0		0.00	96	1,1-Dichloroethene
17	0	0	0	0	0		0.00	142	Iodomethane
18	100	84	99	0	10531810	bv	2.48	76	Carbon disulfide
19	99	74	87	0	268592	bb	2.55	43	Acetone
~~20~~	~~67~~	~~44~~	~~63~~	~~1~~	~~12392~~	~~vb~~	~~2.80~~	76	Allyl chloride FP TW
21	100	84	95	0	3787636	vb	2.95	84	Methylene chloride
22	0	0	0	0	0		0.00	96	trans-1,2-Dichloroethene
~~23~~	~~46~~	~~36~~	~~42~~	~~1~~	~~11652~~	~~A~~	~~3.30~~	73	tert-Butyl methyl ether FP TW
24	100	88	93	0	4174516	bv	3.25	53	Acrylonitrile
25	100	98	100	-1	3648092	vv	3.54	57	n-Hexane
26	0	0	0	0	0		0.00	63	1,1-Dichloroethane
~~27~~	~~55~~	~~44~~	~~55~~	~~7~~	~~167487~~	~~bv~~	~~4.09~~	42	1,2-Epoxybutane FP TW
28	0	0	0	0	0		0.00	96	cis-1,2-Dichloroethene
29	0	0	0	0	0		0.00	83	Chloroform
30	0	0	0	0	0		0.00	62	1,2-Dichloroethane
~~31~~	~~43~~	~~56~~	~~63~~	~~27~~	~~957654~~	~~vv~~	~~5.53~~	57	Isooctane
~~32~~	~~32~~	~~30~~	~~61~~	~~-28~~	~~3784173~~	~~vv~~	~~3.54~~	43	Vinyl acetate FP TW
33	79	54	74	-1	6560	bb	4.35	72	2-Butanone
34	0	0	0	0	0		0.00	97	1,1,1-Trichloroethane
35	0	0	0	0	0		0.00	117	Carbon tetrachloride
36	100	95	99	0	19864530	bv	5.10	78	Benzene
37	0	0	0	0	0		0.00	130	Trichloroethene
~~38~~	~~41~~	~~35~~	~~60~~	~~20~~	~~20996~~	~~vb~~	~~5.91~~	63	1,2-Dichloropropane FP TW
~~39~~	~~39~~	~~30~~	~~63~~	~~13~~	~~335075~~	~~bv~~	~~6.05~~	55	Ethyl acrylate
40	100	83	95	-1	212580	bb	6.45	69	Methyl methacrylate
41	0	0	0	0	0		0.00	83	Bromodichloromethane
42	0	0	0	0	0		0.00	75	cis-1,3-Dichloropropene
43	0	0	0	0	0		0.00	75	trans-1,3-Dichloropropen
44	0	0	0	0	0		0.00	97	1,1,2-Trichloroethane
45	0	0	0	0	0		0.00	129	Dibromochloromethane
46	0	0	0	0	0		0.00	107	Ethylene dibromide
47	0	0	0	0	0		0.00	173	Bromoform
~~48~~	~~38~~	~~32~~	~~78~~	~~19~~	~~224189~~	~~vv~~	~~7.26~~	43	4-Methyl-2-pentanone FP TW
49	100	95	99	1	9412800	bv	7.56	92	Toluene
50	0	0	0	0	0		0.00	164	Tetrachloroethene

Data Review: TW
Date: 7-20-97

No.	MAT	FOR	REV	Delta	Area	P.Flags	RT	QM	Name
~~51~~	~~40~~	~~18~~	~~61~~	~~0~~	~~758604~~	~~bb~~	~~8.69~~	43	2-Hexanone
52	63	28	78	1	138792	bb	9.79	112	Chlorobenzene
53	100	92	99	1	1036980	bv	10.08	106	Ethylbenzene
54	100	85	93	0	1859664	vv	10.31	106	m-/p-Xylene
55	0	0	0	0	651819		11.03 ~~9.50~~	106	o-Xylene
56	100	98	99	3	23184720	bv	11.08	104	Styrene
~~57~~	~~26~~	~~5~~	~~49~~	~~6~~	~~47340~~	~~n~~	~~12.29~~	83	1,1,2,2-Tetrachloro[illegible]
58	67	36	73	1	151785	bv	11.79	105	Cumene

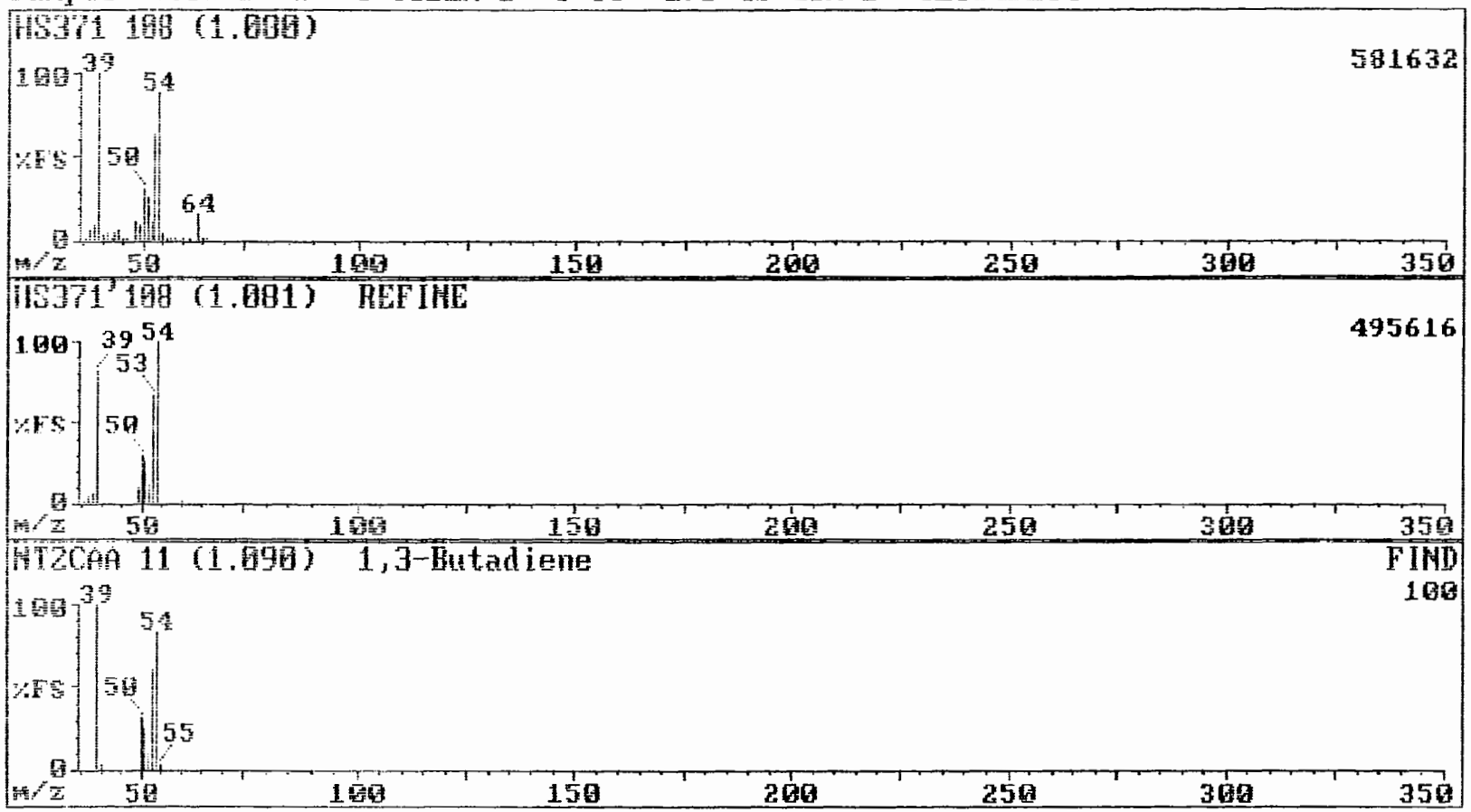
07-09-97 15:56 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 4 TUBEA/B T/TC 173-46-13A/B TL1#42284 Instrument H



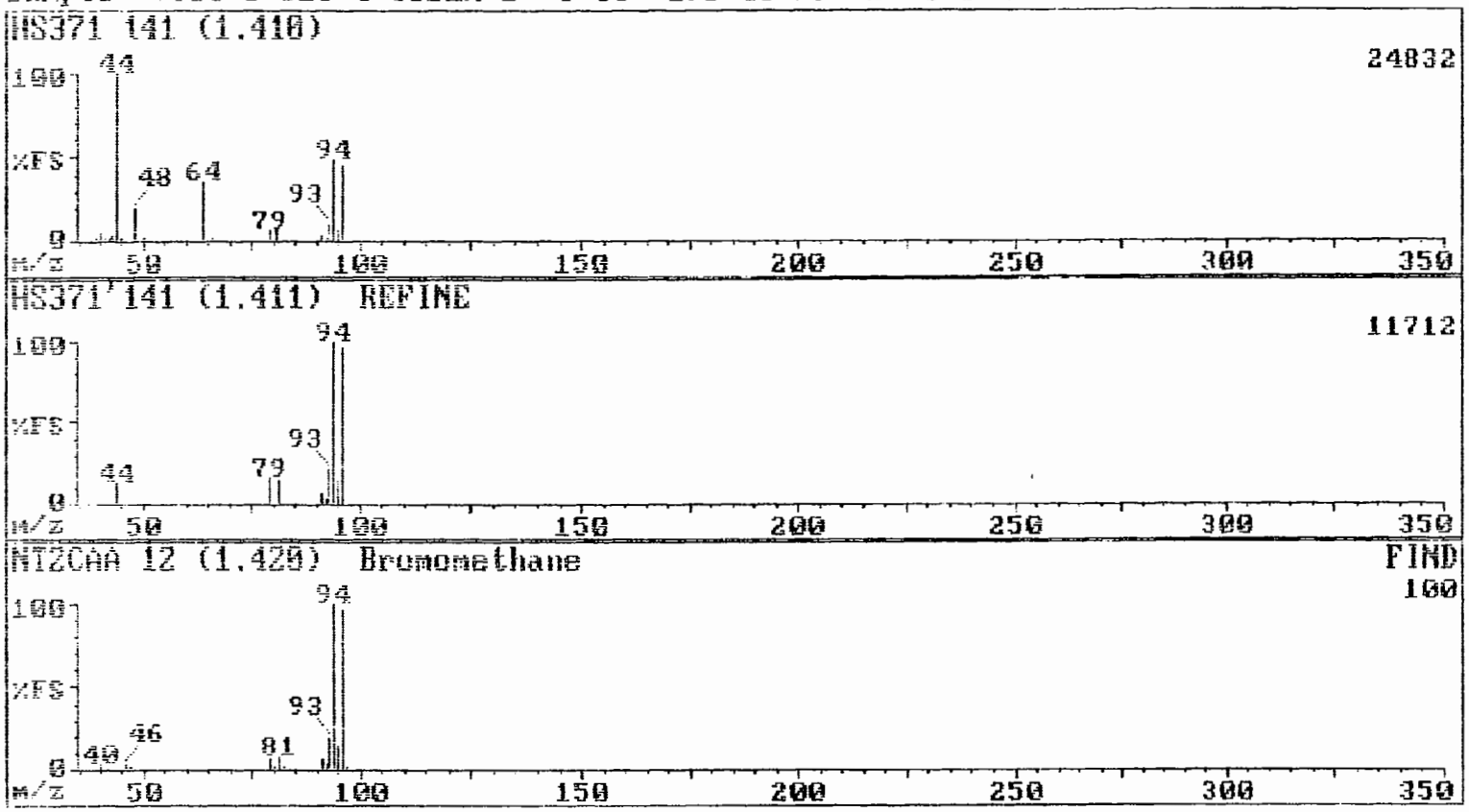
07-09-97 15:56 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 4 TUBEA/B T/TC 173-46-13A/B TLI#42284 Instrument H



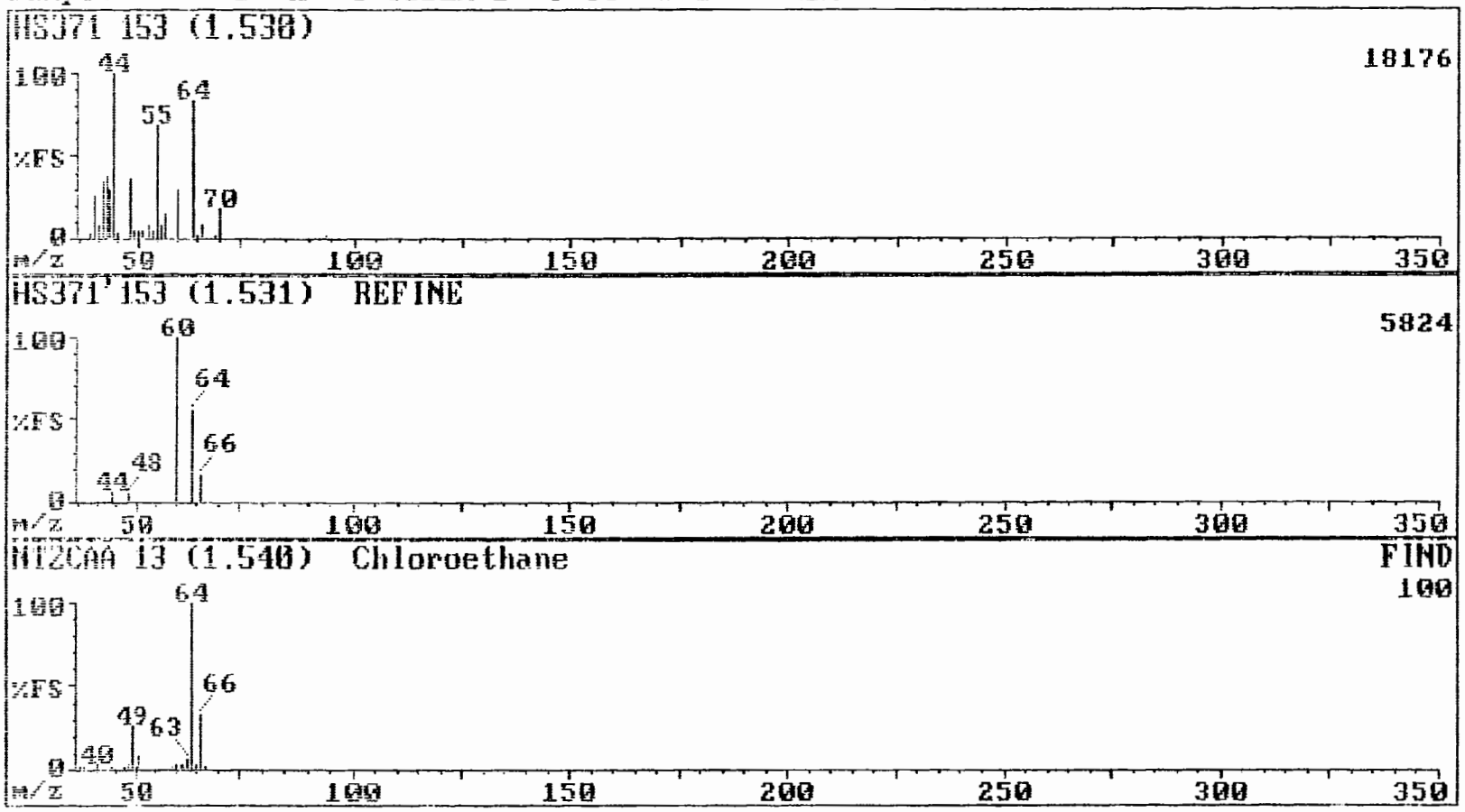
07-09-97 15:56 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 4 TUBEA/B T/TC 173-46-13A/B TLI#42284 Instrument H



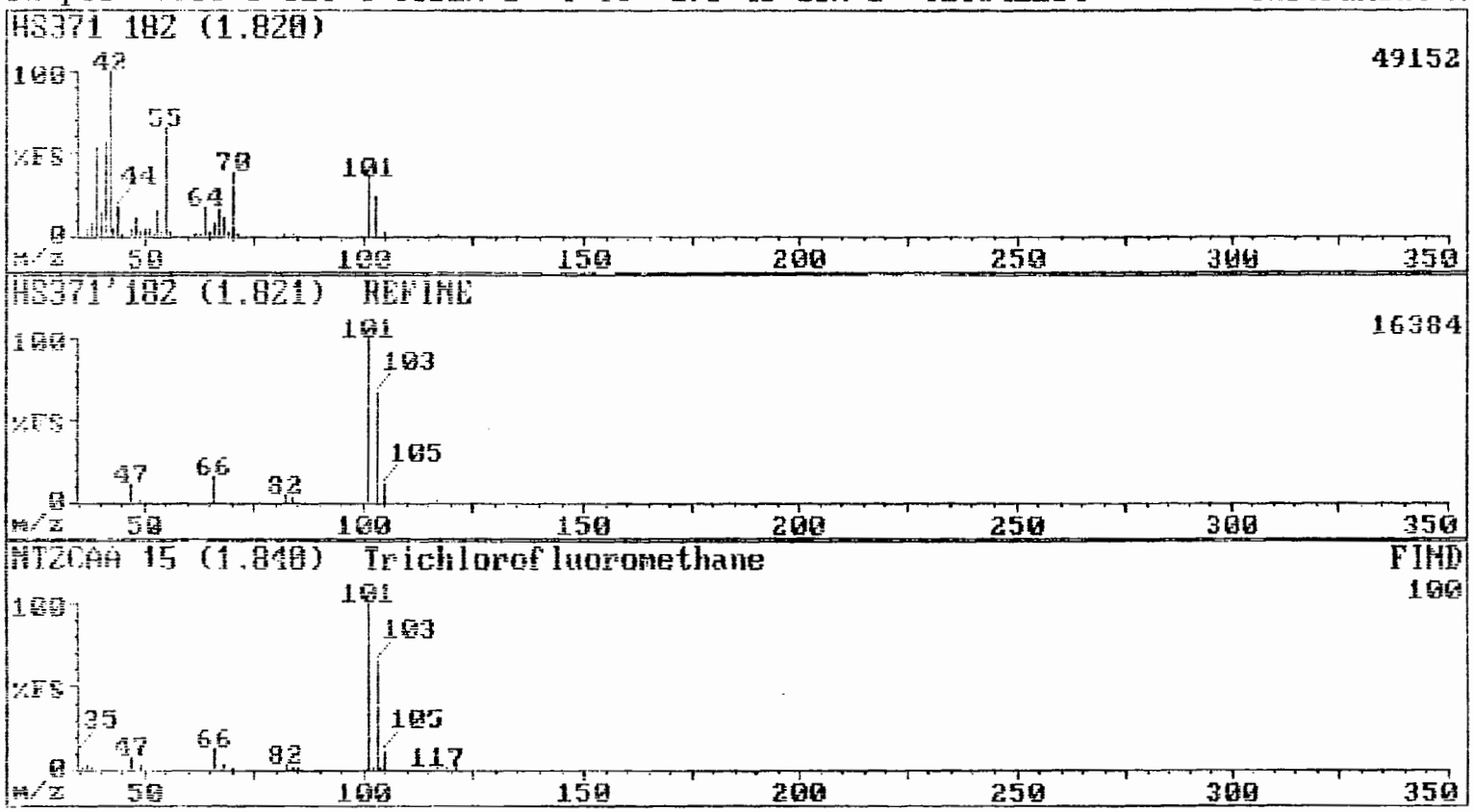
07-09-97 15:56 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 4 TUBEA/B T/TC 173-46-13A/B TLI#42284 Instrument H



07 08 97 15:56 Triangle Laboratories of RTP, Inc. (919) 544-5729

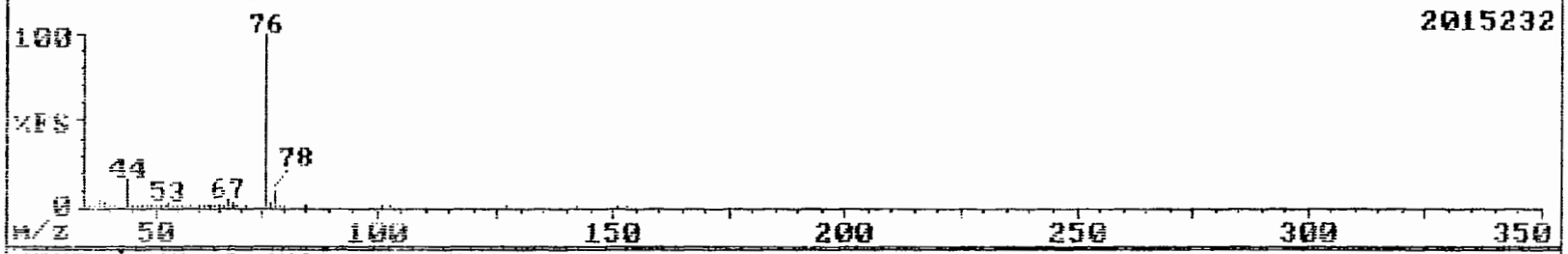
Sample: VOST-3 SET 4 TUBEA/B T/TC 173-46-13A/B TLI#42284 Instrument H



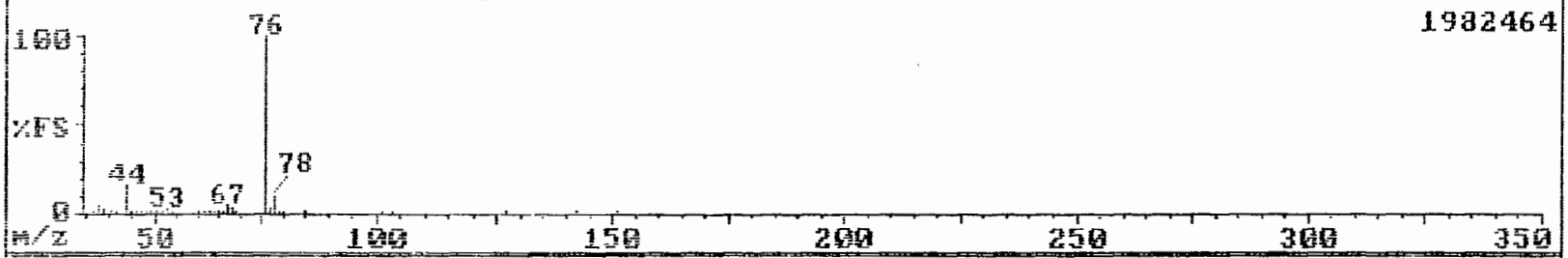
07-09-97 15:56 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 4 TUBEA/B T/TC 173-46-13A/B TLI#42284 Instrument H

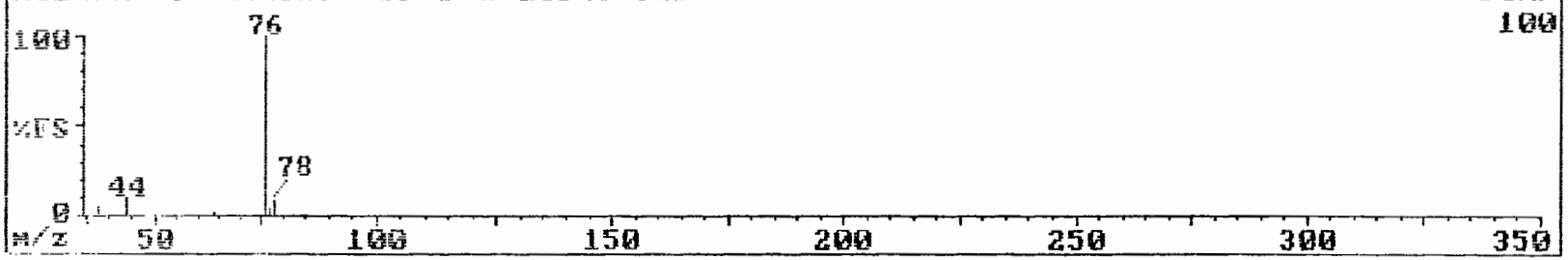
HS371 248 (2.480) 2015232



HS371'248 (2.481) REFINE 1982464

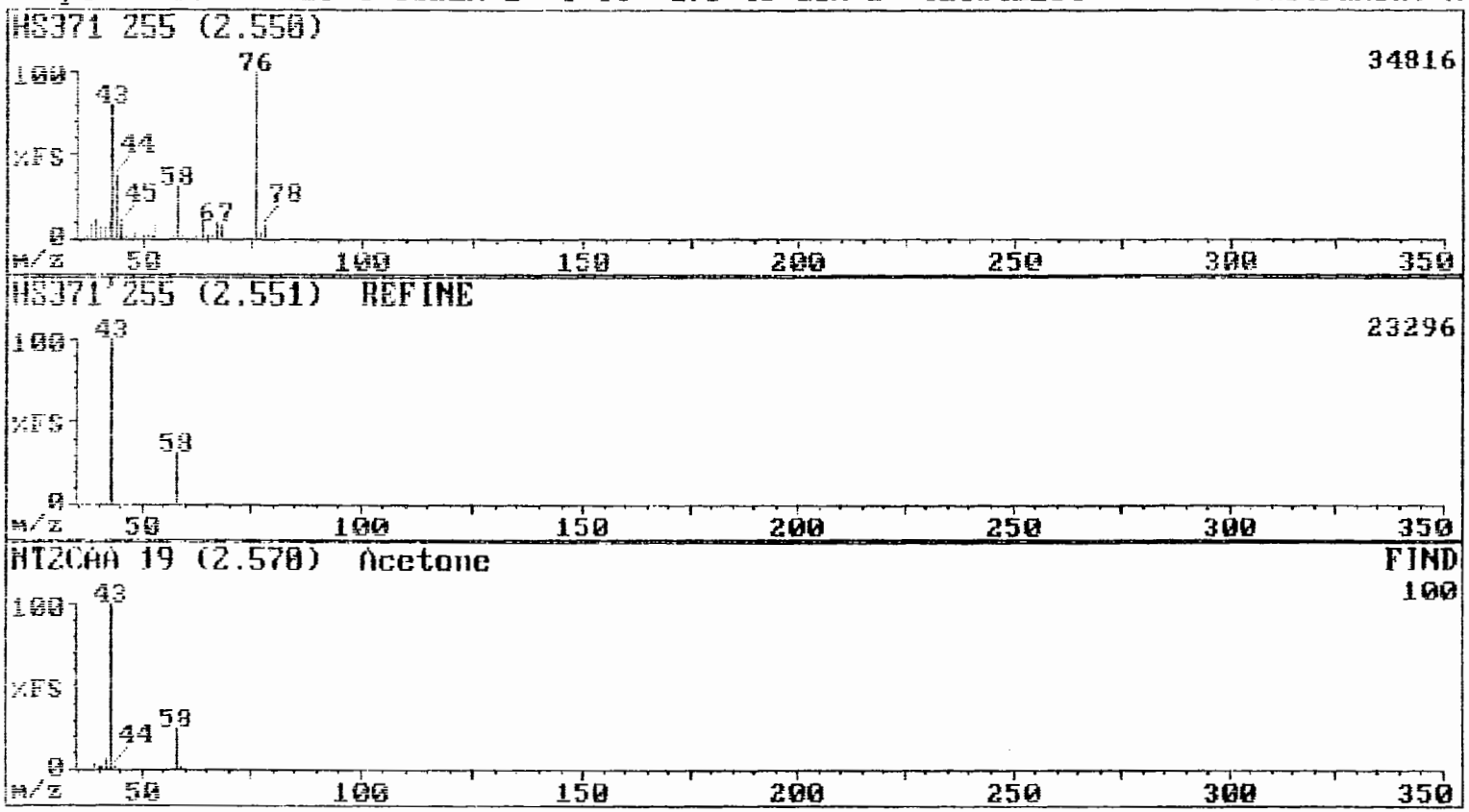


NT2CAA 18 (2.500) Carbon disulfide FIND 100



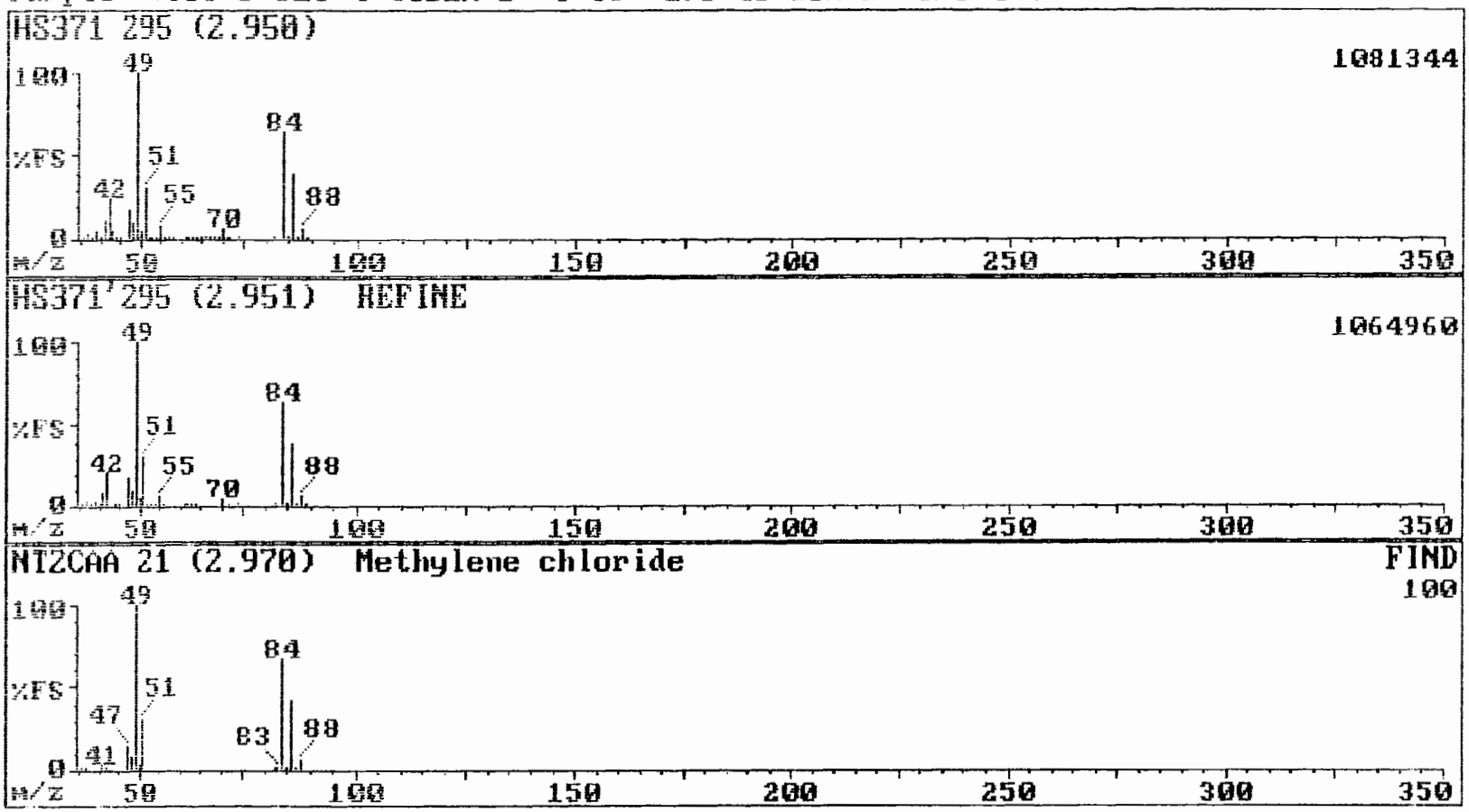
07-09-97 15:56 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 4 TUBEA/B T/TC 173-46-13A/B TLI#42204 Instrument H



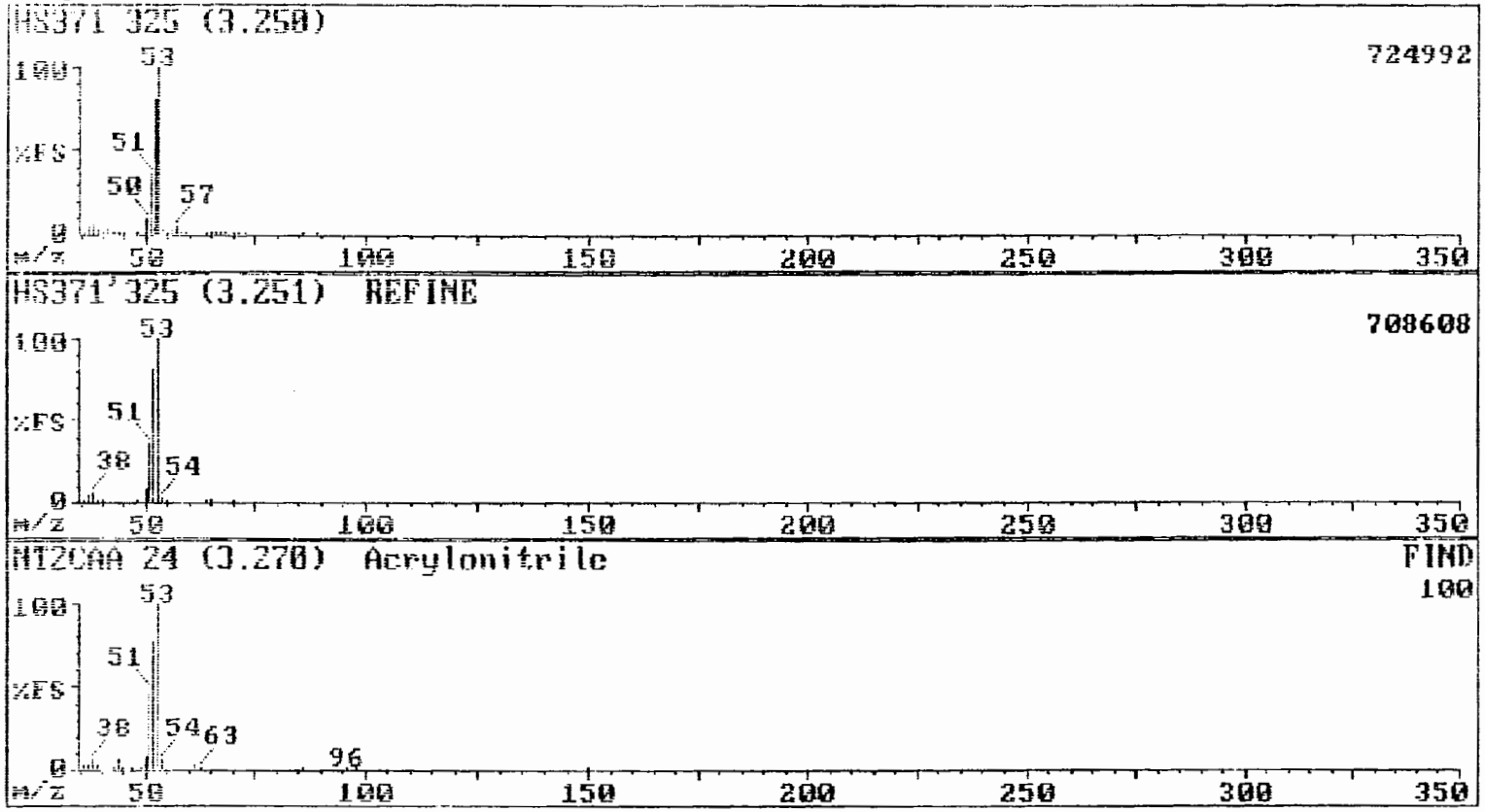
07-09-97 15:56 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 4 TUBEA/B T/TC 173-46-13A/B TLI#42284 Instrument H



07-09-97 15:56 Triangle Laboratories of RTP, Inc. (919) 544-5729

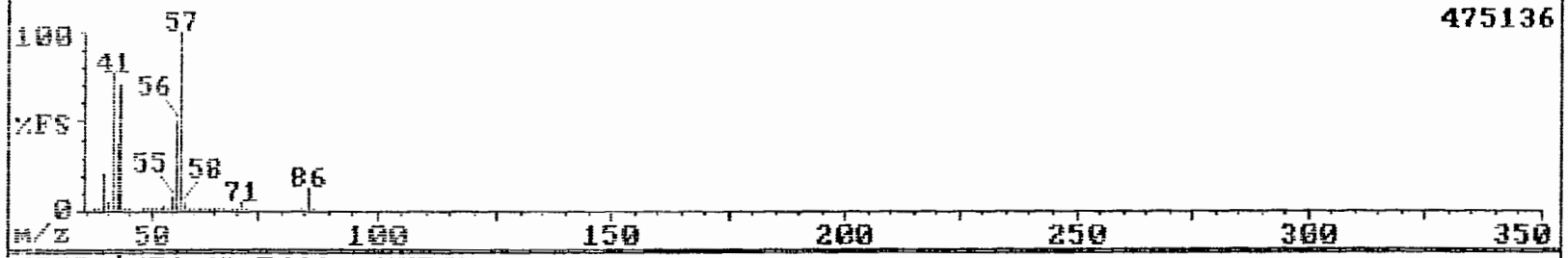
Sample: VOST-3 SET 4 TUBEA/B T/TC 173-46-13A/B TLI#42284 Instrument H



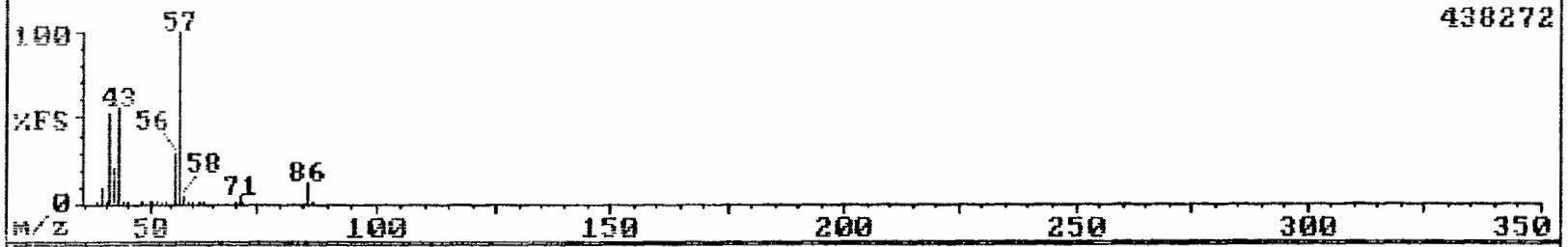
07-09-97 15:56 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 4 TUBEA/B T/TC 173-46-13A/B TLI#42284 Instrument H

HS371 354 (3.540)

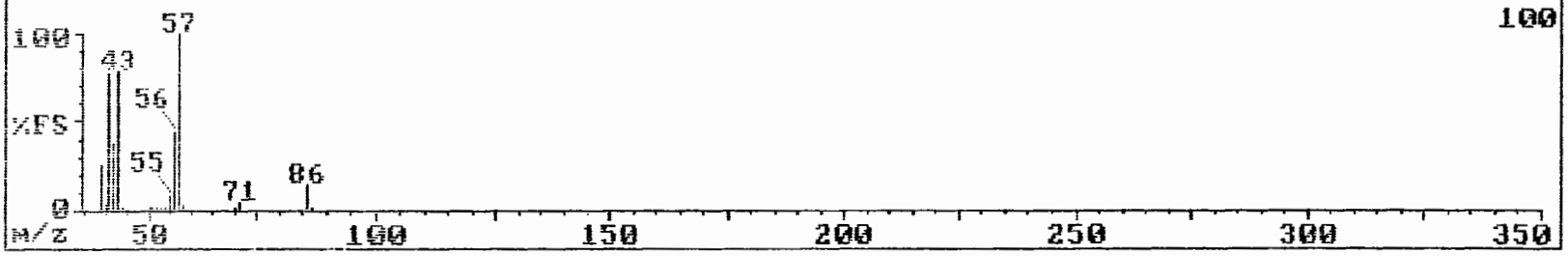


HS371'354 (3.541) REFINE



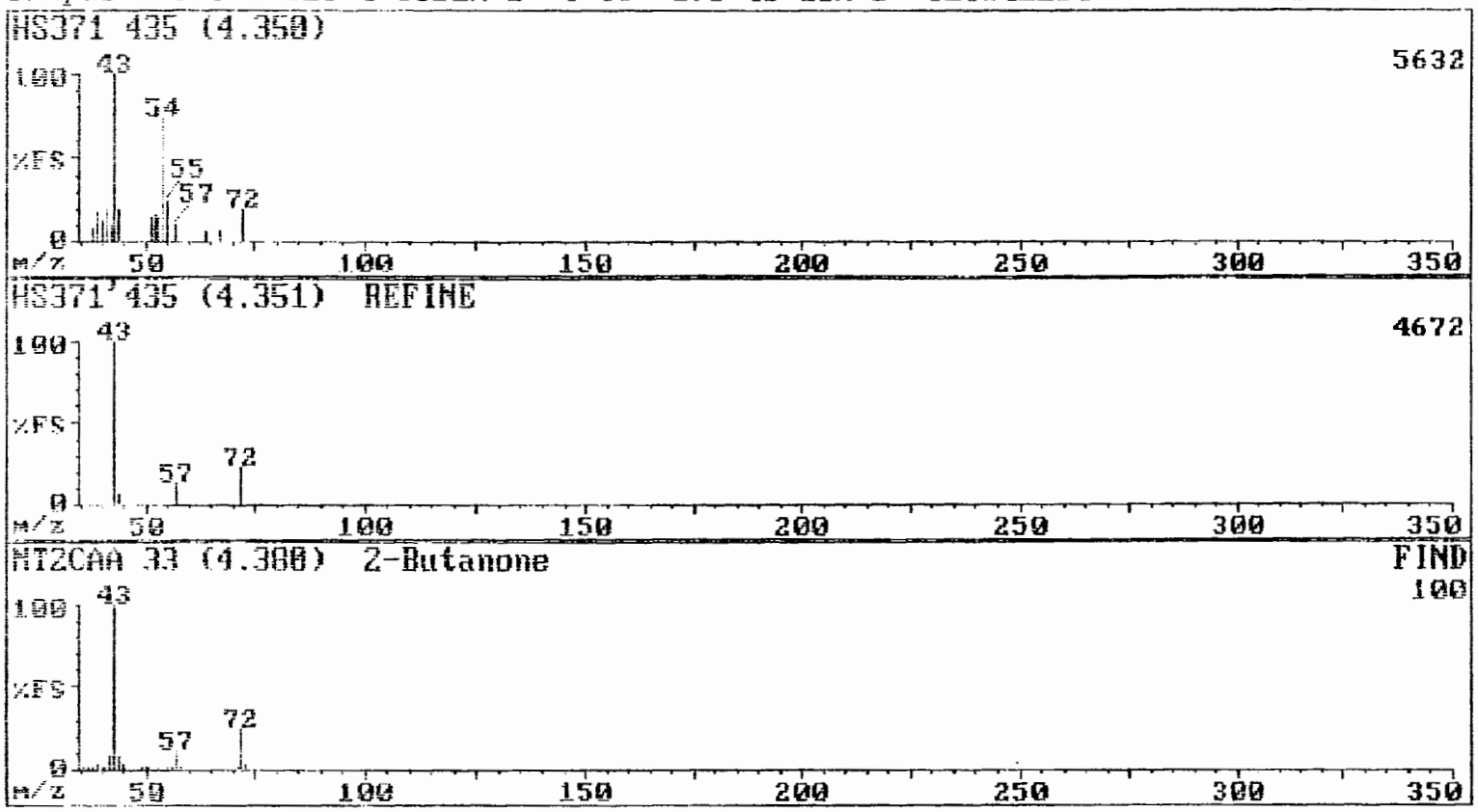
MTZCAA 25 (3.570) n-Hexane

FIND 100



07-09 97 15:56 Triangle Laboratories of RTP, Inc. (919) 544-5729

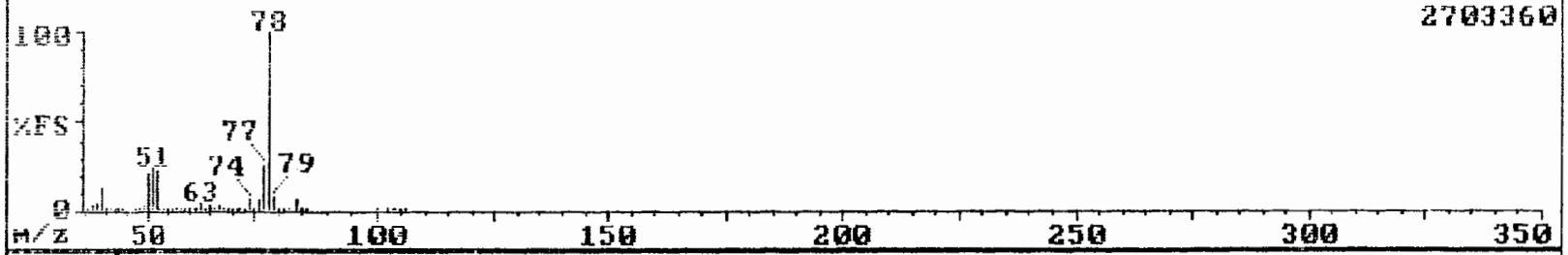
Sample: WOST-3 SET 4 TUBEA/B T/TC 173-46-13A/B TLI#42284 Instrument H



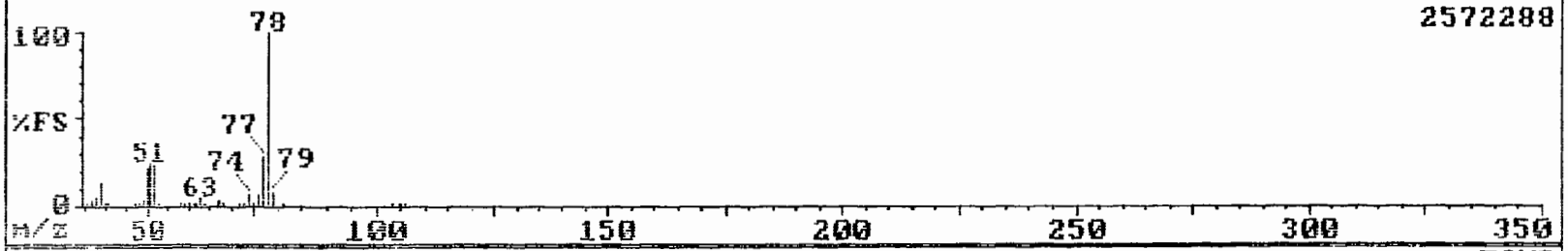
07-09-97 15:56 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 4 TUBEA/B T/TC 173-46-13A/B TLI#42284 Instrument H

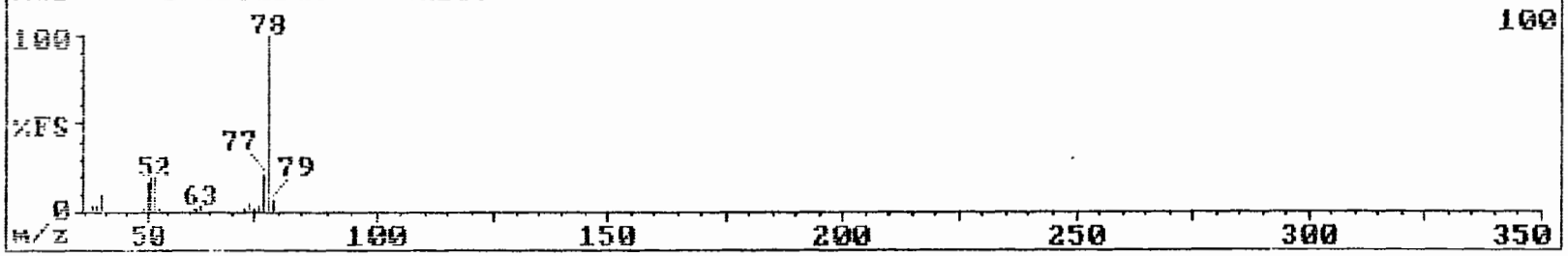
HS371 510 (5.101) 2703360



HS371'510 (5.101) REFINE 2572288

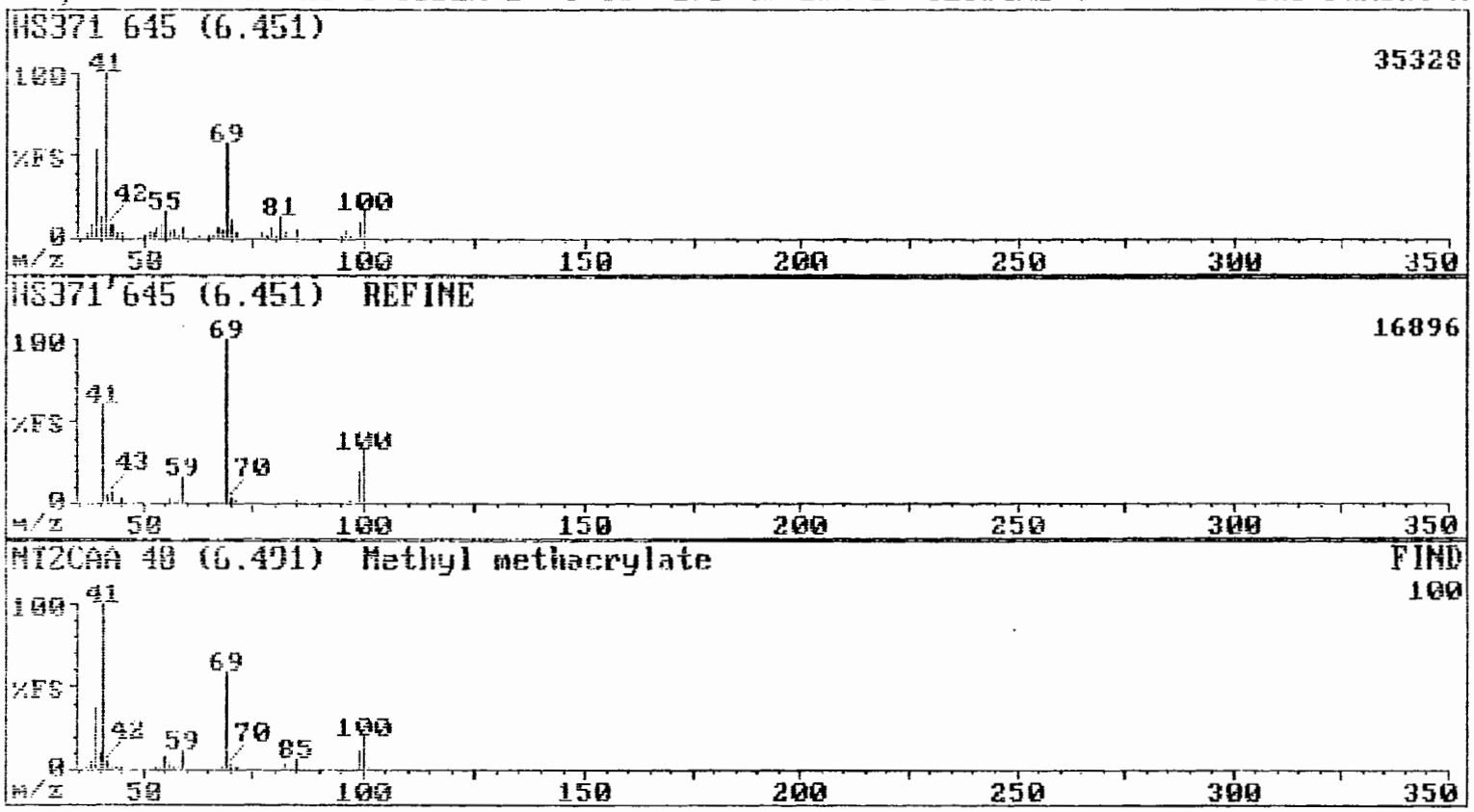


NT2CAA 36 (5.131) Benzene FIND 100



07-09-97 15:56 Triangle Laboratories of RTP, Inc. (919) 544-5729

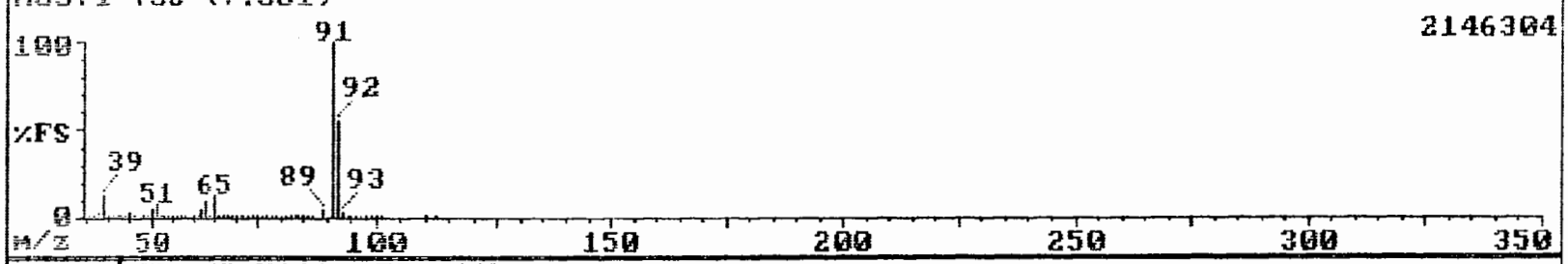
Sample: VOST-3 SET 4 TUBEA/B T/TC 173-46-13A/B TLI#42284 Instrument H



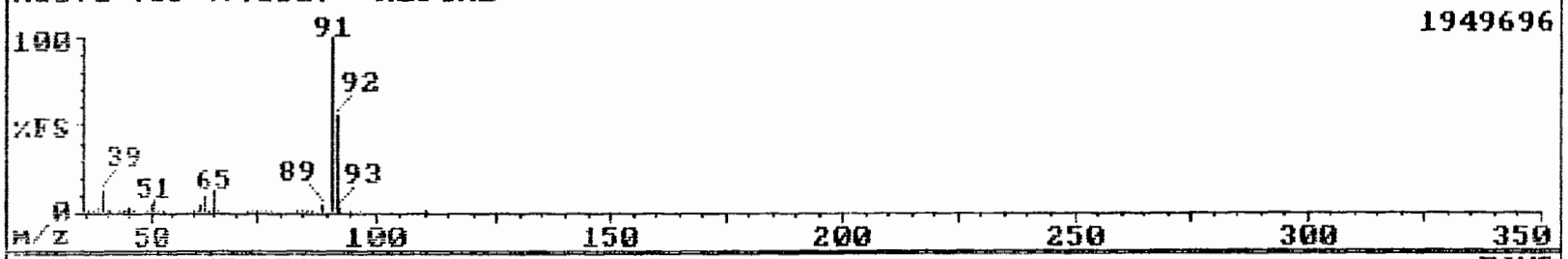
07-09-97 15:56 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 4 TUBEA/B T/TC 173-46-13A/B TLI#42284 Instrument H

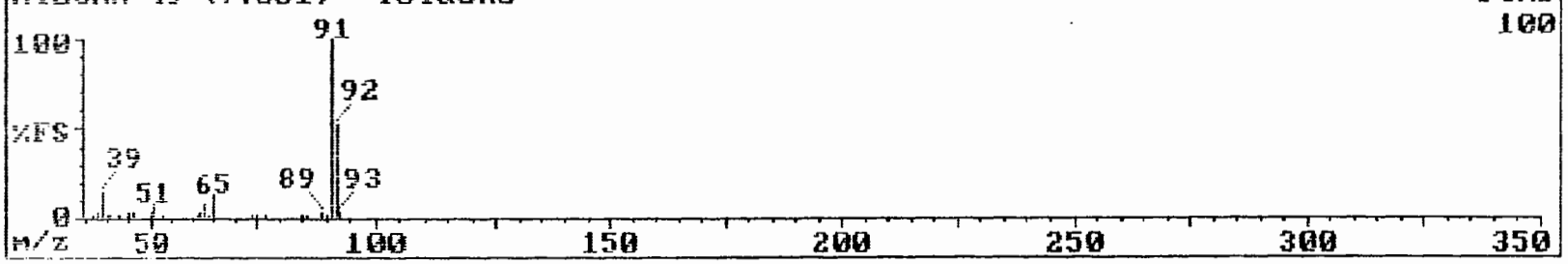
HS371 756 (7.561)



HS371'756 (7.561) REFINE

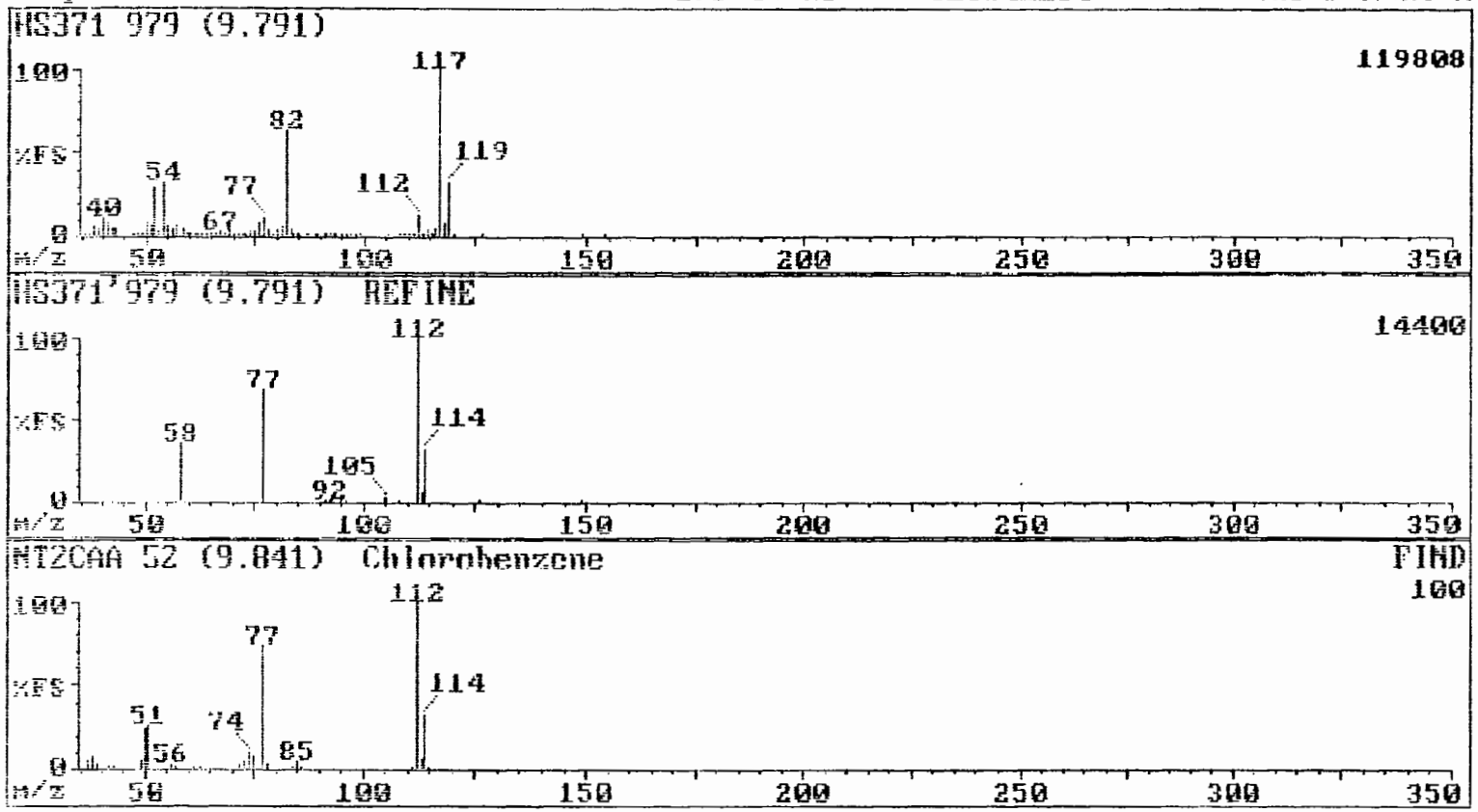


NT2CAA 49 (7.601) Toluene FIND 100



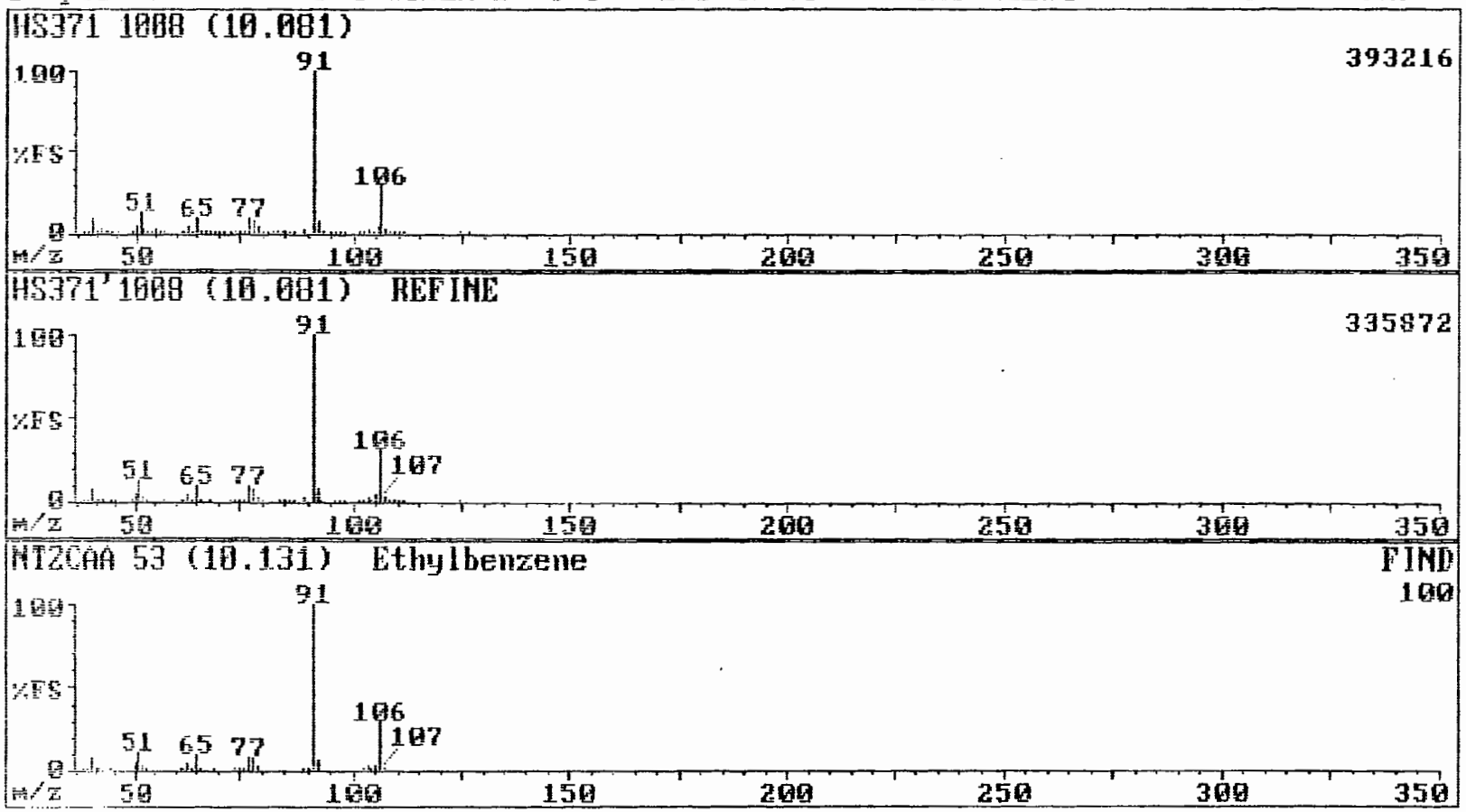
07 09 97 15:56 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 4 TUBEA/B T/TC 173-46-13A/B TLI#42284 Instrument H



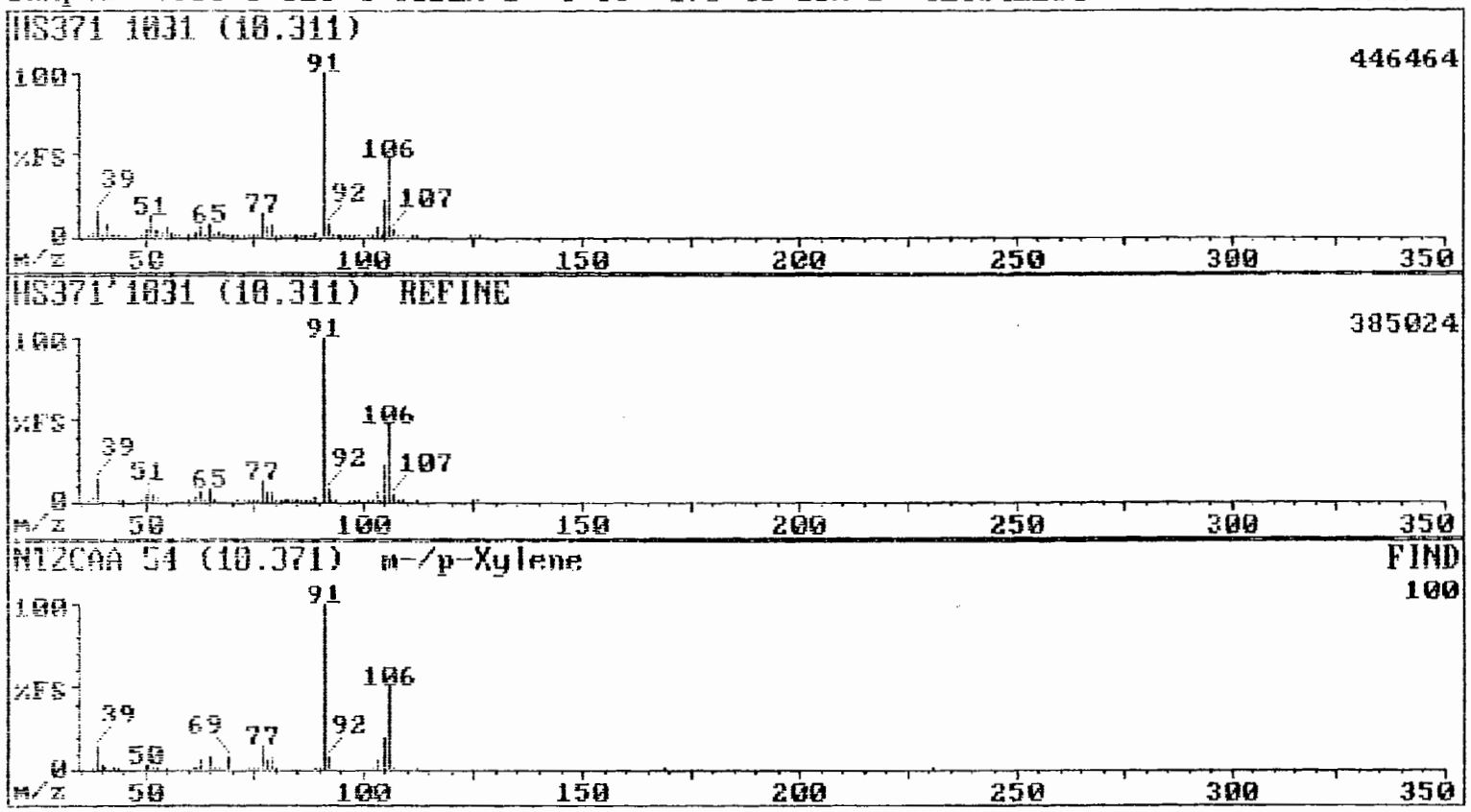
07-09-97 15:56 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 4 TUBEA/B T/TC 173-46-13A/B TLI#42284 Instrument H



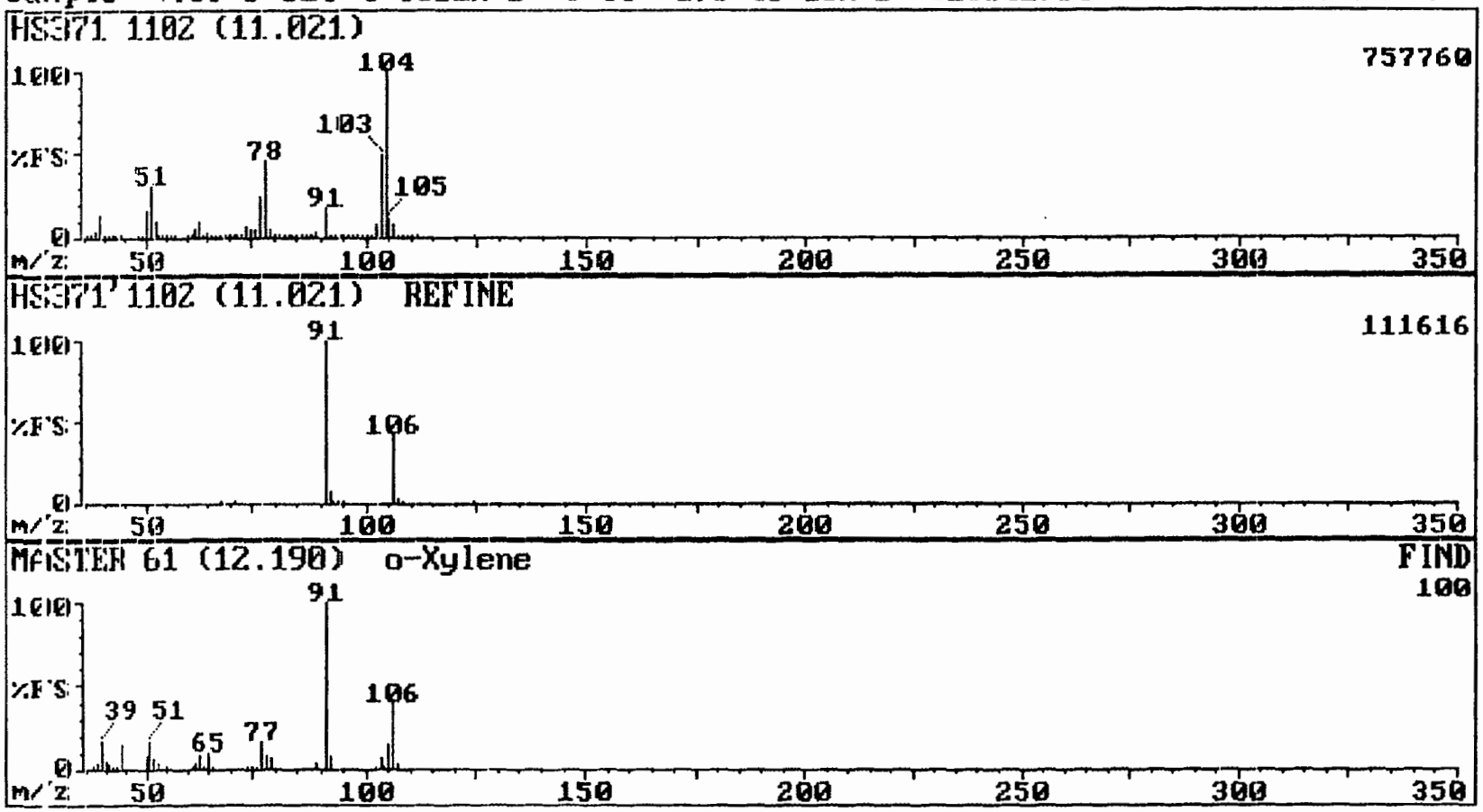
07-09-97 15:56 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 4 TUBEA/B T/TC 173-46-13A/B TLI#42284 Instrument H



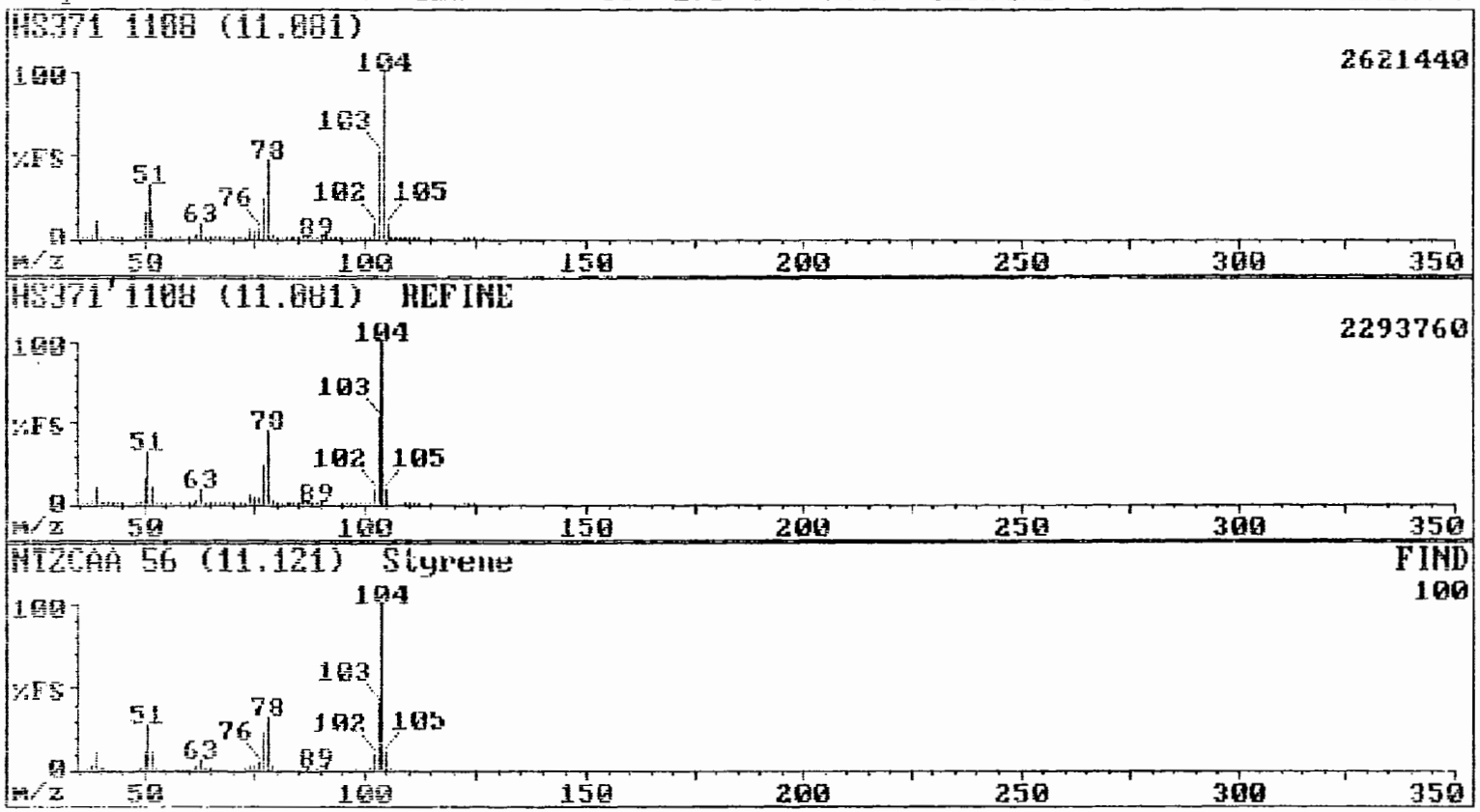
09-Jul-97 15:56 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 4 TUBEA/B T/TC 173-46-13A/B TLI#42284 Instrument H



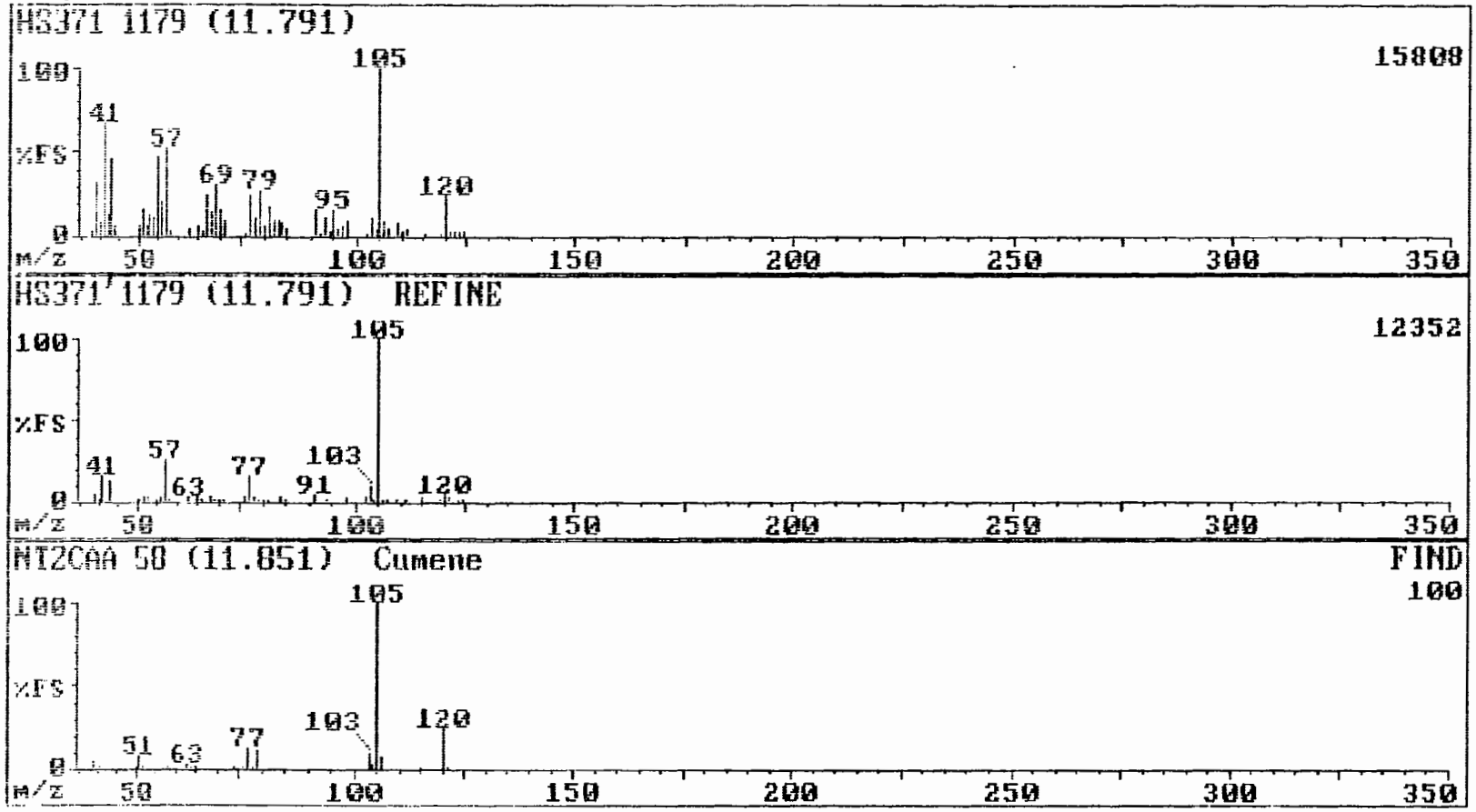
07-09-97 15:56 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 4 TUBEA/B T/TC 173-46-13A/B TLI#42284 Instrument H

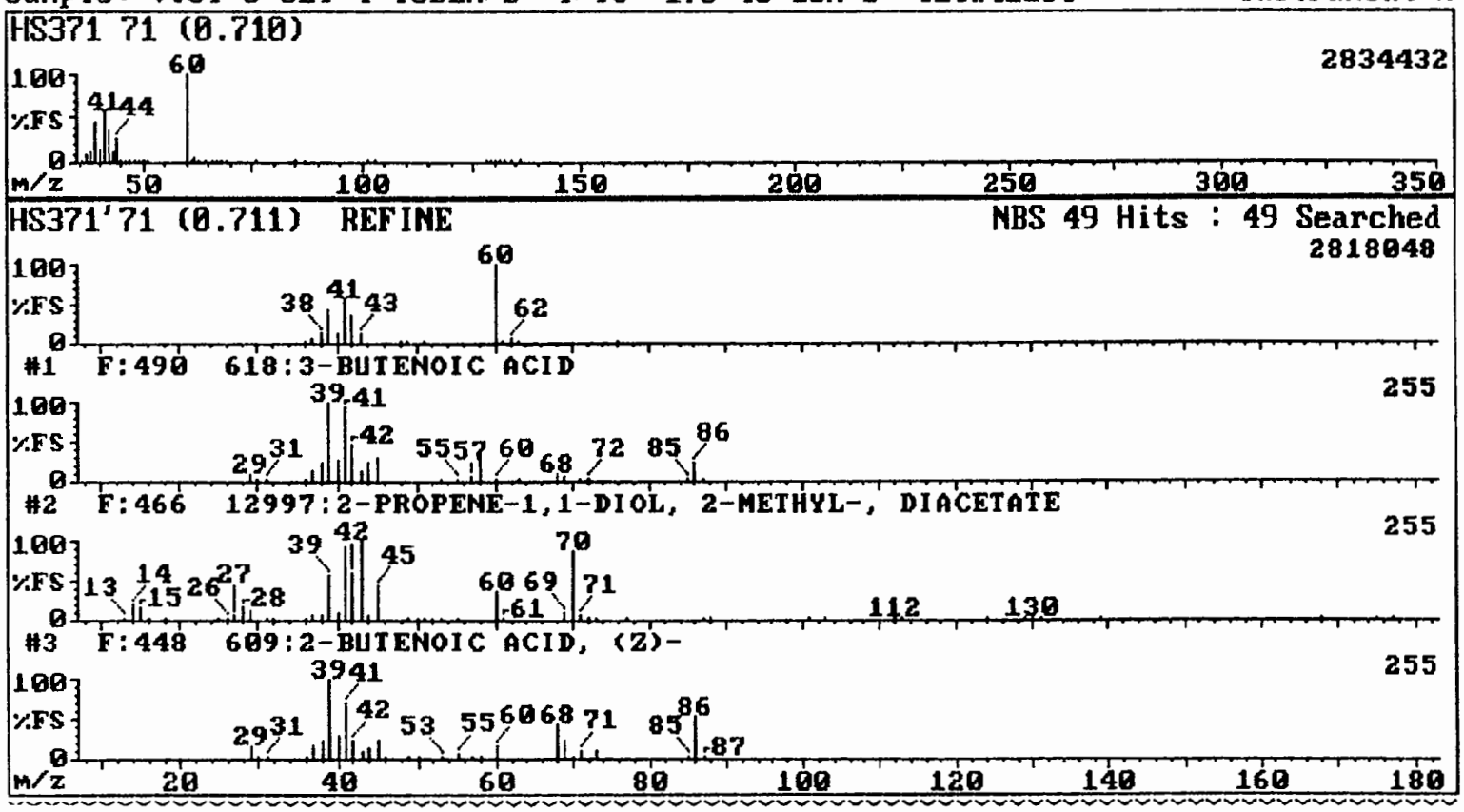


07-09-97 15:56 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 4 TUBEA/B T/TC 173-46-13A/B TLI#42284 Instrument H



09-Jul-97 15:56 Triangle Laboratories of RTP, Inc. (919) 544-5729
Sample: VOST-3 SET 4 TUBEA/B T/TC 173-46-13A/B TLI#42284 Instrument H



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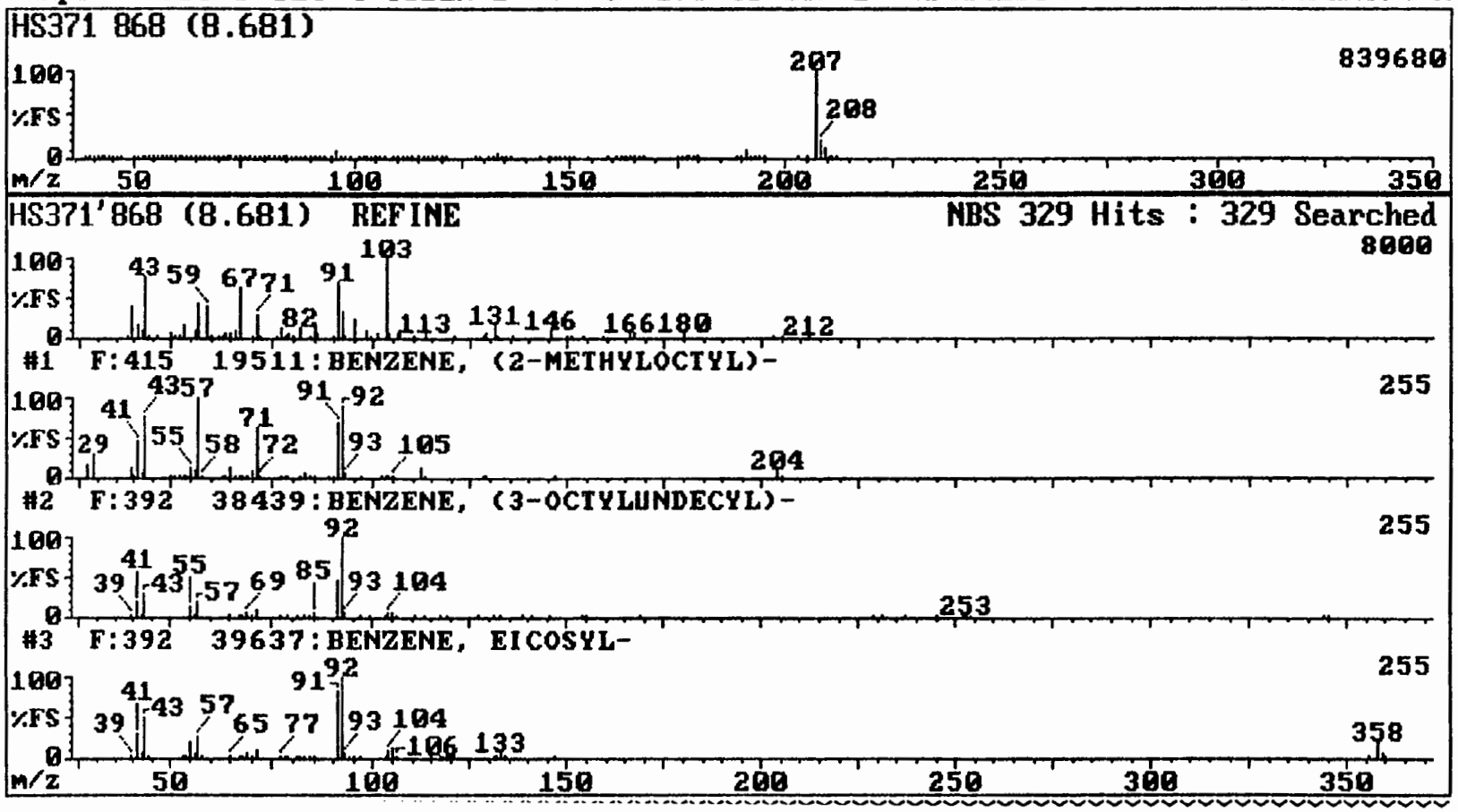
Sample: VOST-3 SET 4 TUBEA/B T/TC 173-46-13A/B TLI#42284 Instrument H

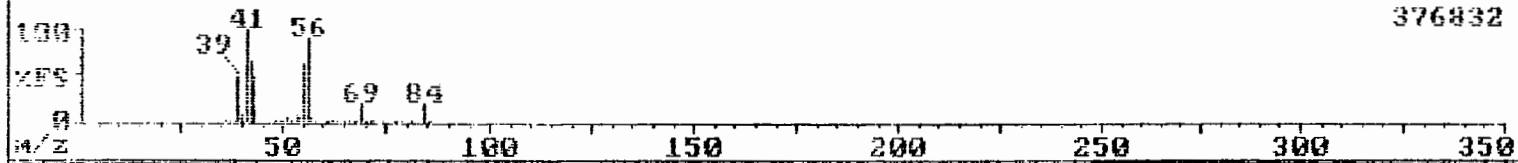


07/09/97 15:56 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 4 TUBEA/B T/TC 173-46-13A/B TL1#42284 Instrument: H

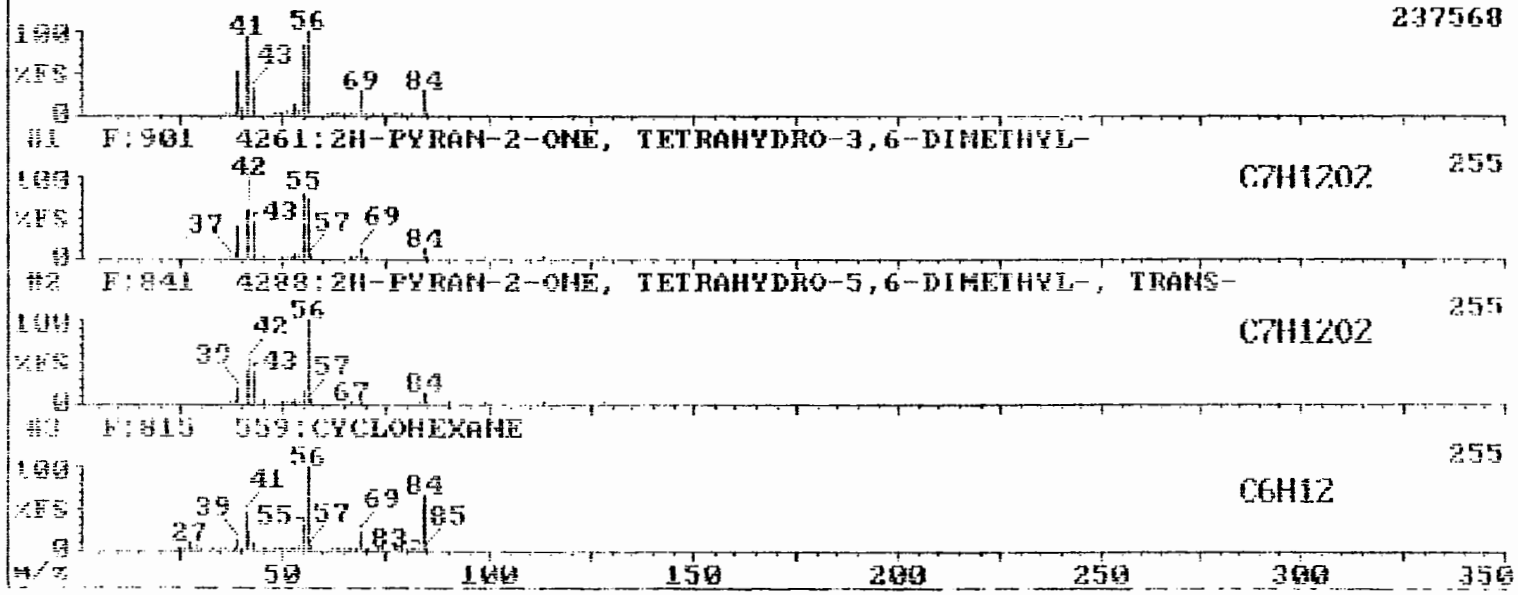
MS371 345 (3.450) NBS

376832



MS371'345 (3.451) REFINE NBS 61 Hits : 61 Searched

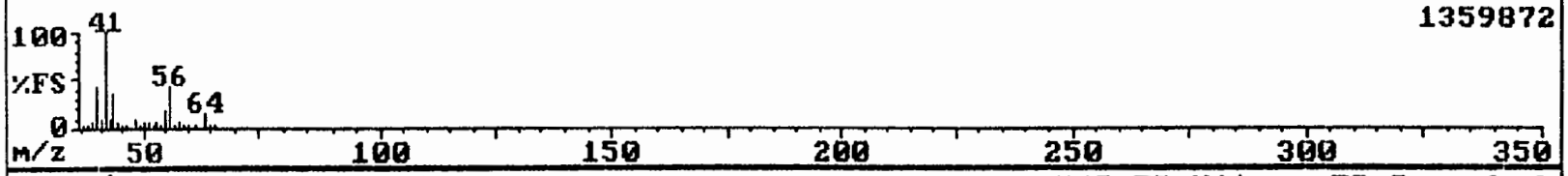
237568



09-Jul-97 15:56 Triangle Laboratories of RTP, Inc. (919) 544-5729

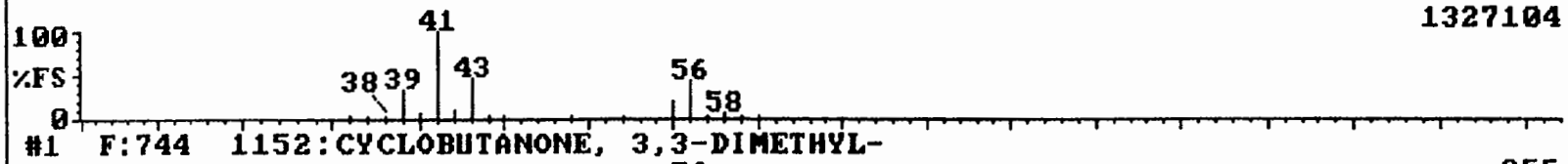
Sample: VOST-3 SET 4 TUBEA/B T/TC 173-46-13A/B TLI#42284 Instrument H

HS371 101 (1.010) 1359872

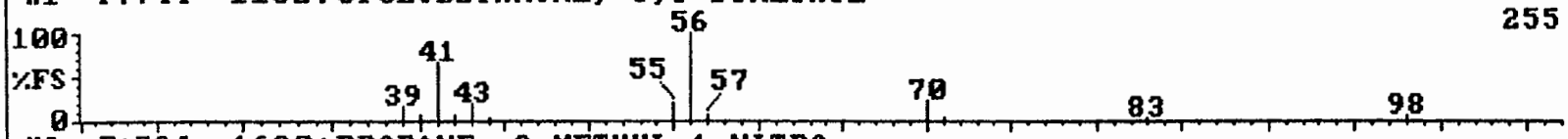


HS371'101 (1.011) REFINE NBS 58 Hits : 58 Searched

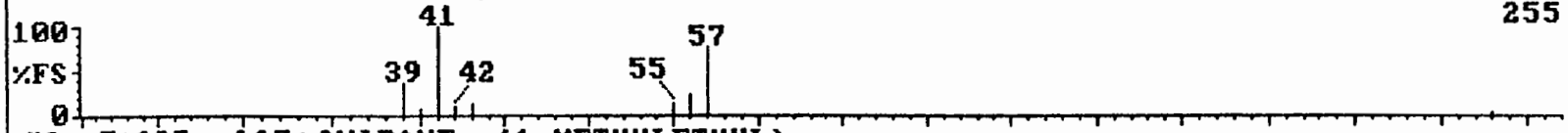
1327104



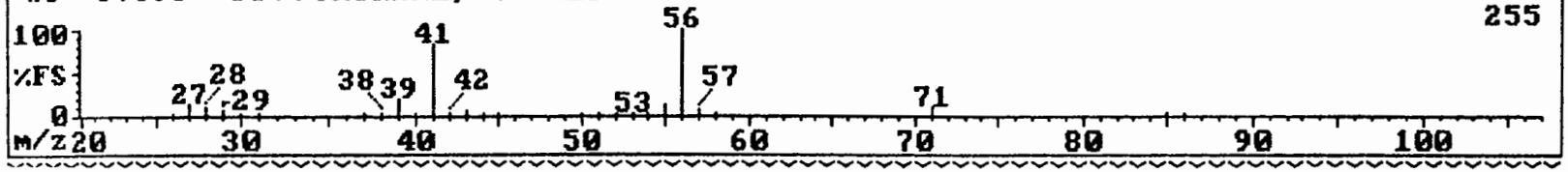
#1 F:744 1152:CYCLOBUTANONE, 3,3-DIMETHYL- 255



#2 F:724 1620:PROPANE, 2-METHYL-1-NITRO- 255



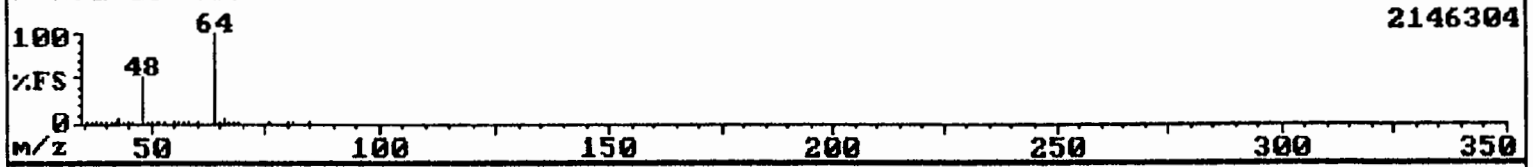
#3 F:695 667:OXIRANE, (1-METHYLETHYL)- 255



09-Jul-97 15:56 Triangle Laboratories of RTP, Inc. (919) 544-5729

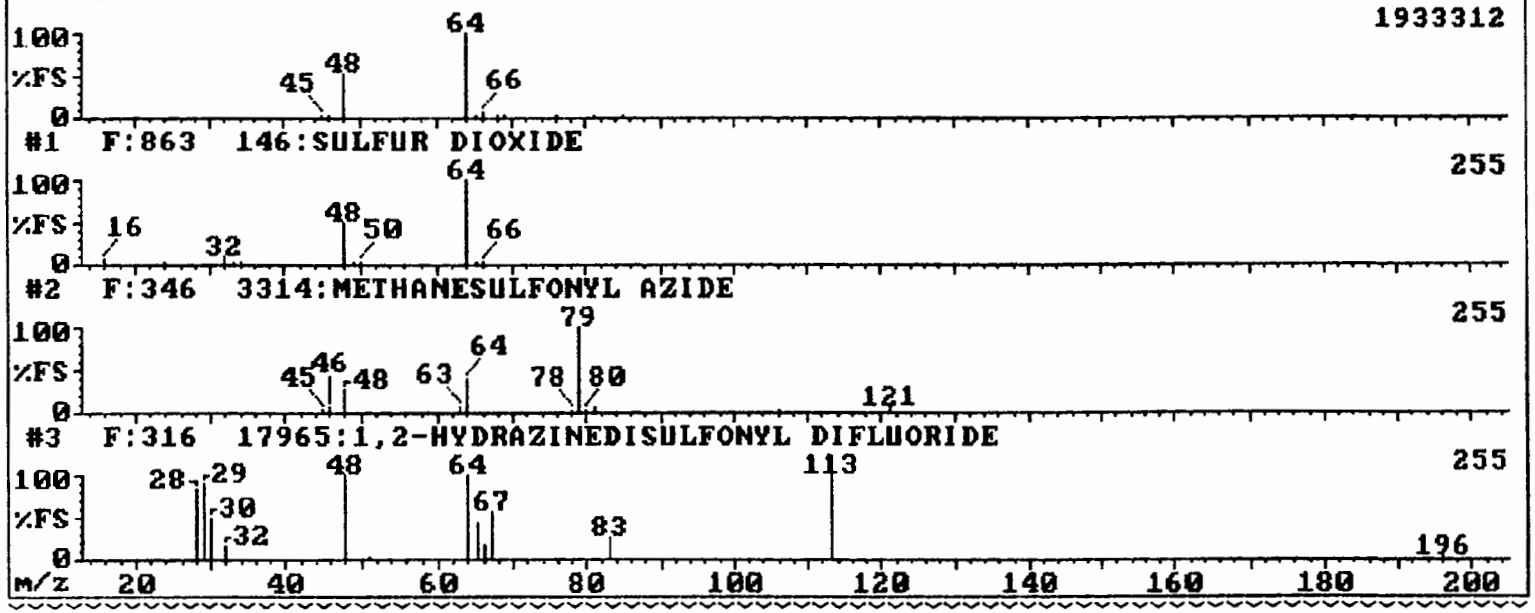
Sample: VOST-3 SET 4 TUBEA/B T/TC 173-46-13A/B TLI#42284 Instrument H

HS371 89 (0.890) 2146304



HS371'89 (0.891) REFINE NBS 49 Hits : 49 Searched

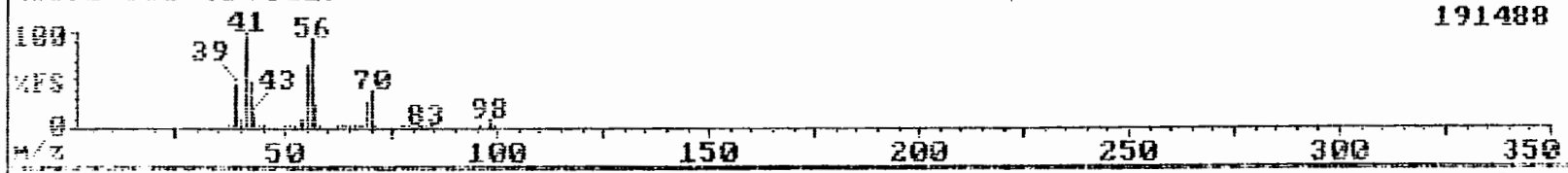
1933312



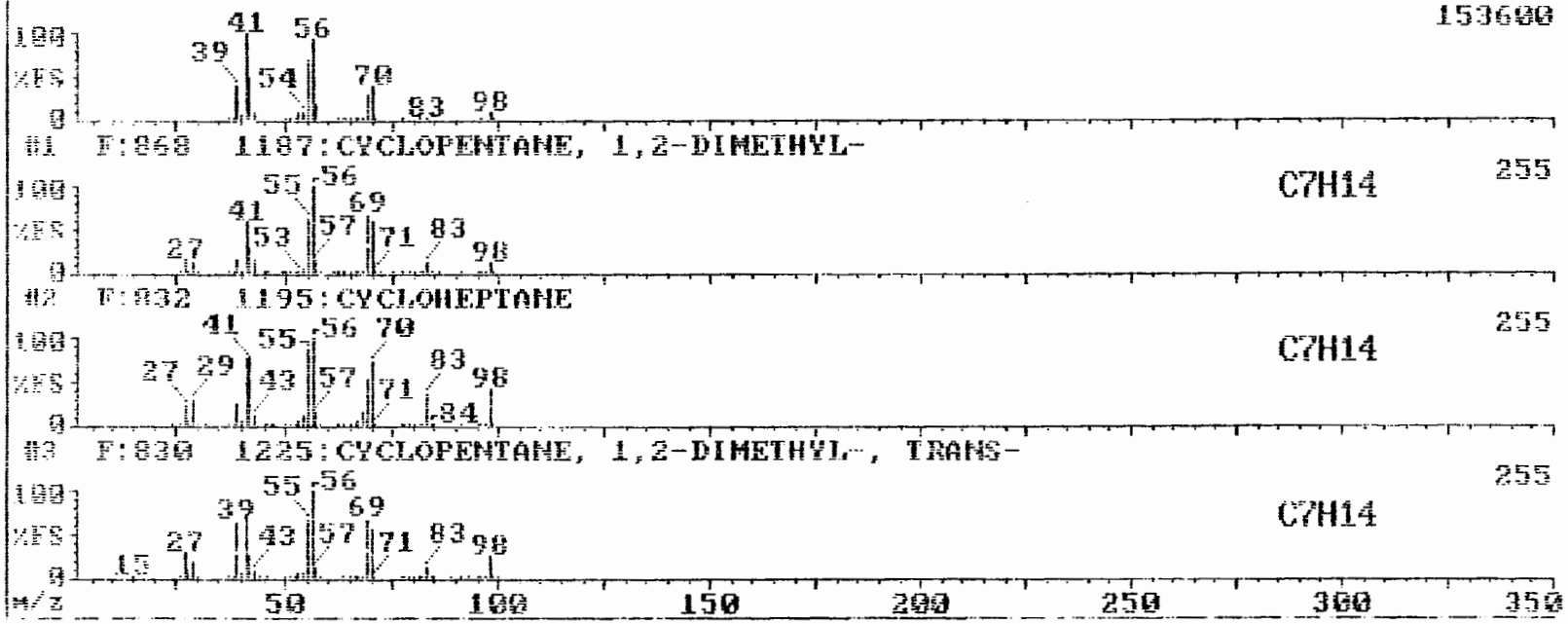
07/09/97 15:56 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 4 TUBEA/B T/TC 173-46-13A/B TLI#42284 Instrument: H

HS371 542 (5.421) NBS 191488



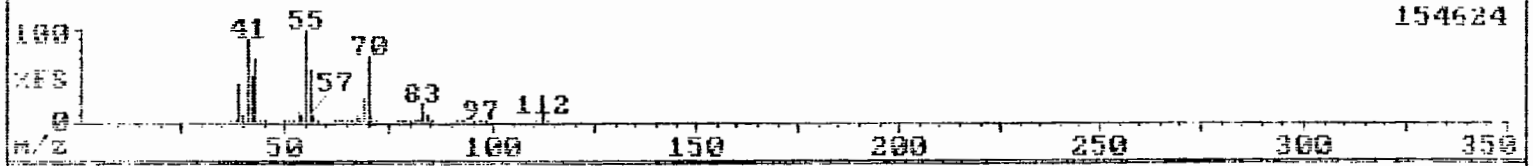
HS371'542 (5.421) REFINE NBS 56 Hits : 56 Searched 153600



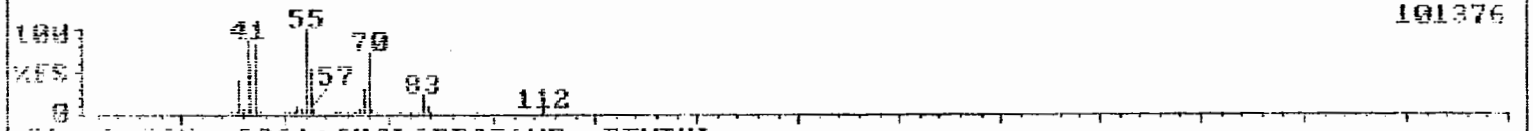
07/09/97 15:56 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 4 TUBEA/B T/TC 173-46-13A/B TLI#42284 Instrument: H

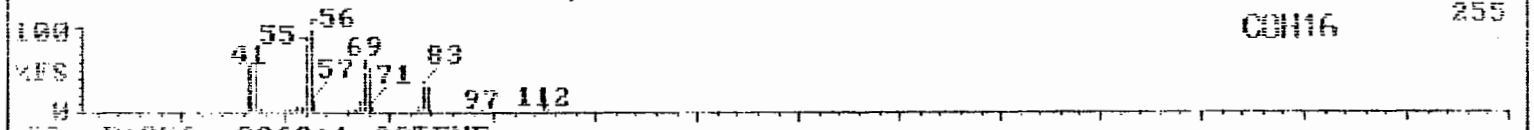
HS371 779 (7.791) NBS 154624



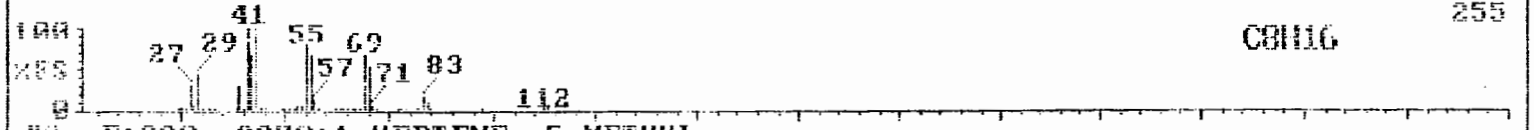
HS371 779 (7.791) REFINE NBS 112 Hits : 112 Searched 101376



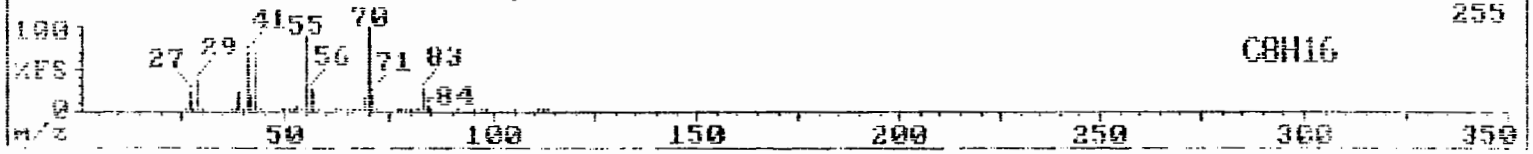
#1 F:867 2361:CYCLOPROPANE, PENTYL- C8H16 255



#2 F:856 2362:1-OCTENE C8H16 255



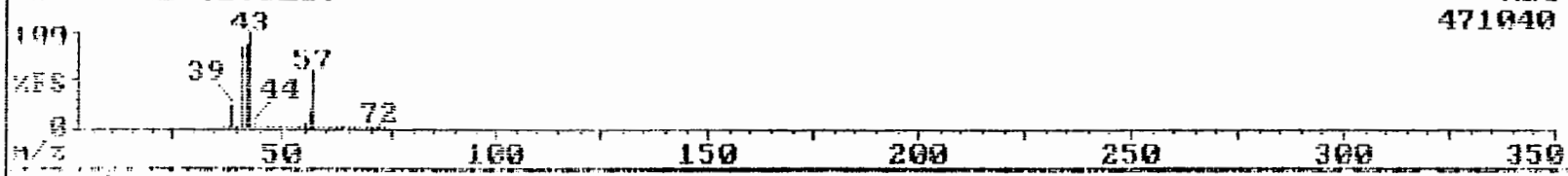
#3 F:030 2370:1-HEPTENE, 5-METHYL- C8H16 255



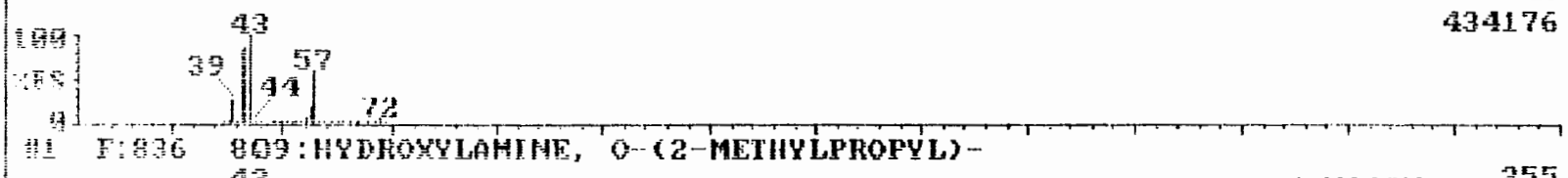
07/09/97 15:56 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 4 TUBEA/B T/TC 173-46-13A/B TLI#42284 Instrument: H

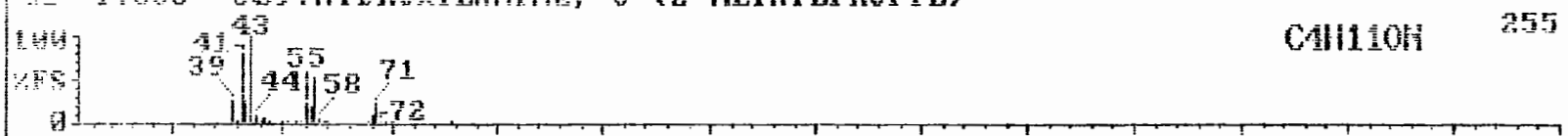
MS371 I62 (1.620) NBS 471040



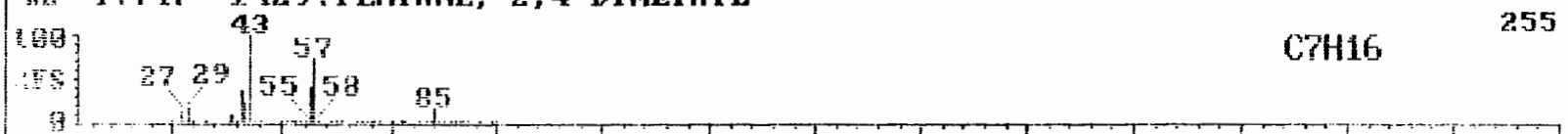
MS371 I62 (1.621) REFINE NBS 242 Hits : 242 Searched 434176



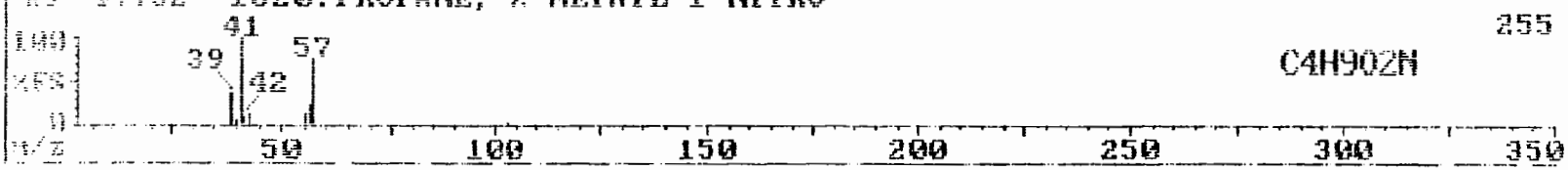
#1 F:836 809:HYDROXYLAMINE, O-(2-METHYLPROPYL)- C4H11ON 255



#2 F:747 1429:PENTANE, 2,4-DIMETHYL- C7H16 255



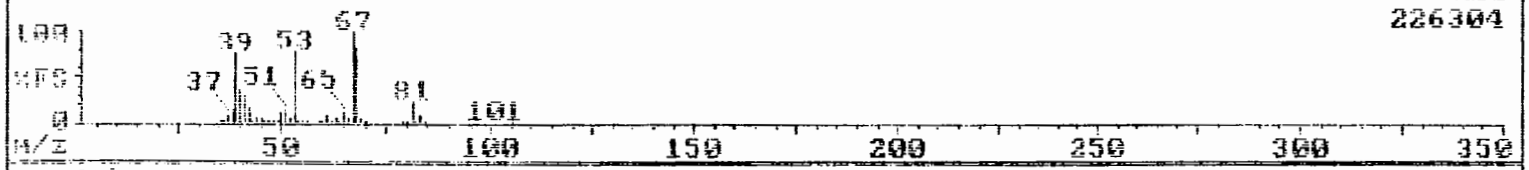
#3 F:732 1620:PROPANE, 2-METHYL-1-NITRO- C4H9O2N 255



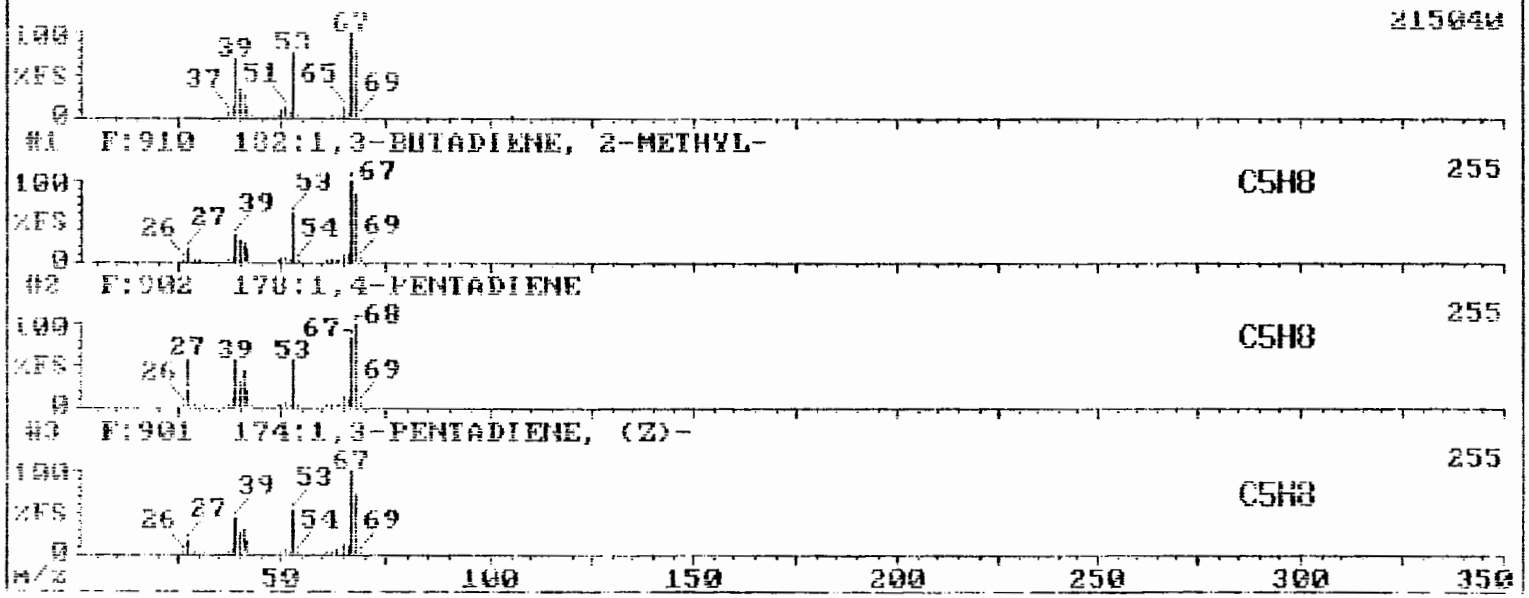
07/09/97 15:56 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 4 TUBEA/B T/TC 173-46-13A/B TLI#42284 Instrument: H

MS371 218 (2.180) NBS 226304



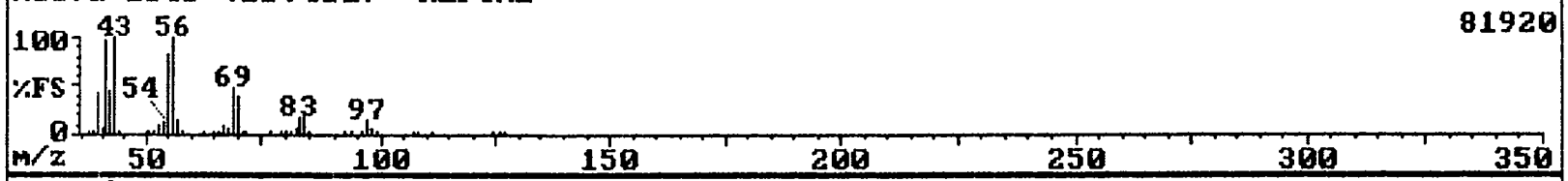
MS371 218 (2.181) REFINE NBS 33 Hits : 33 Searched 215040



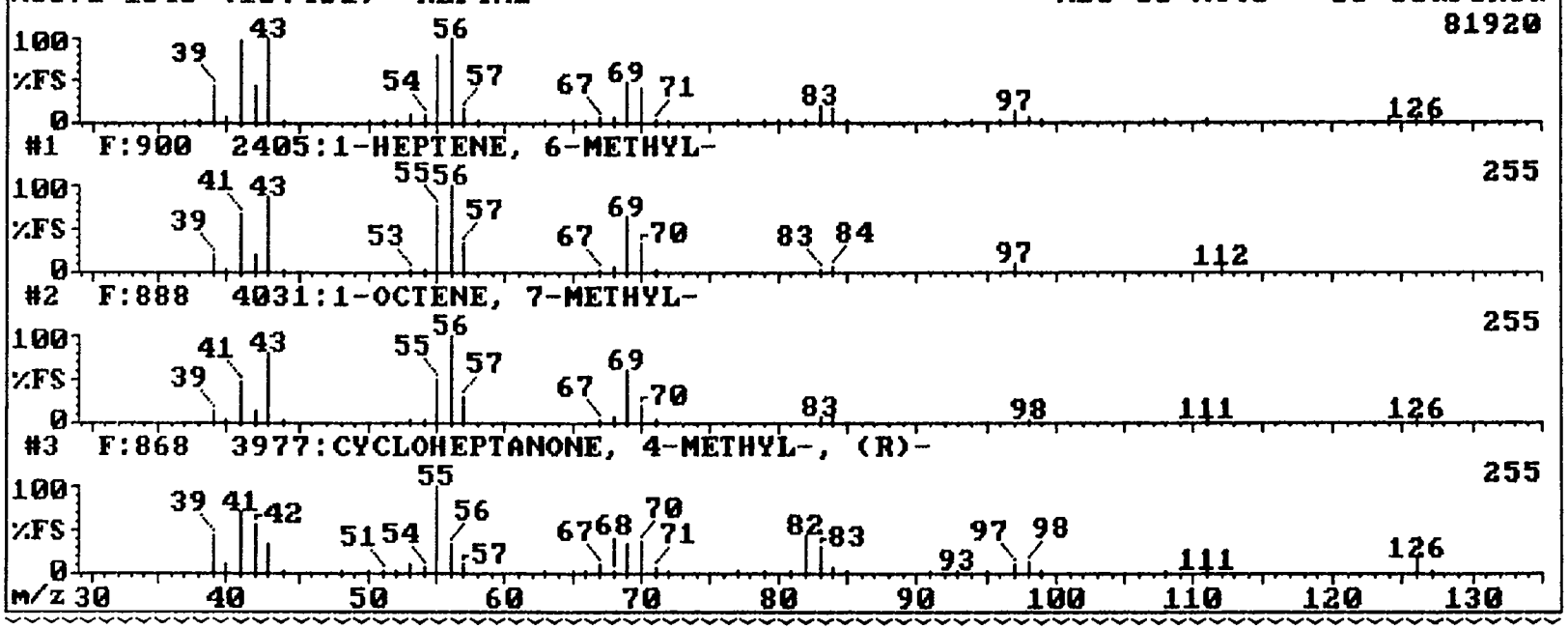
09-Jul-97 15:56 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-3 SET 4 TUBEA/B T/TC 173-46-13A/B TLI#42284 Instrument H

HS371'1048 (10.481) REFINE



HS371'1048 (10.481) REFINE NBS 83 Hits : 83 Searched



Pacific Environmental Services

Project Number: 42284 | **Method 8240A VOST**
Sample File: HS349 | **Sample ID: VOST FB 2 TUBEA/B T/TC**

Client Project: S407-003 | **Date Received: 06/30/97** | **Response File: ICALH708**
TLI ID: 173-46-14A,B
Date Analyzed : 07/08/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
Bromochloromethane		IS 1	4.51		
Chloromethane	0.005	J	0.94		0.05
Vinyl Chloride		U		0.001	0.05
1,3-Butadiene		U		0.001	0.05
Bromomethane	0.004	J	1.42		0.05
Chloroethane		U		0.001	0.05
Vinyl bromide		U		0.001	0.05
Trichlorofluoromethane	0.014	J	1.84		0.05
1,1-Dichloroethene		U		0.001	0.05
Iodomethane		U		0.001	0.05
Carbon disulfide		U		0.001	0.05
Acetone	0.045	BJ	2.57		0.05
Allyl chloride		U		0.001	0.05
Methylene chloride	1.547	BE	2.97		0.05
trans-1,2-Dichloroethene		U		0.001	0.05
tert-Butyl methyl ether		U		0.001	0.05
Acrylonitrile		U		0.003	0.05
n-Hexane	0.950		3.57		0.05
1,1-Dichloroethane		U		0.001	0.05
1,2-Epoxybutane		U		0.003	0.05
cis-1,2-Dichloroethene		U		0.001	0.05
Chloroform	0.001	J	4.66		0.05
1,2-Dichloroethane		U		0.001	0.05
Isooctane	0.042	J	5.29		0.05
1,4-Difluorobenzene		IS 2	5.66		
Vinyl acetate		U		0.001	0.05

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

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Printed: 15:01 07/22/1997

Pacific Environmental Services

Project Number: 42284 | **Method 8240A VOST**
Sample File: HS349 | **Sample ID: VOST FB 2 TUBEA/B T/TC**

Client Project: S407-003 | **Date Received: 06/30/97** | **Response File: ICALH708**
TLI ID: 173-46-14A,B
Date Analyzed : 07/08/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
2-Butanone		U		0.005	0.05
1,1,1-Trichloroethane		U		0.001	0.05
Carbon tetrachloride	0.003	J	4.91		0.05
Benzene	0.042	BJ	5.14		0.05
Trichloroethene		U		0.001	0.05
1,2-Dichloropropane		U		0.001	0.05
Ethyl acrylate		U		0.001	0.05
Methyl methacrylate		U		0.001	0.05
Bromodichloromethane		U		0.001	0.05
cis-1,3-Dichloropropene		U		0.001	0.05
trans-1,3-Dichloropropene		U		0.001	0.05
1,1,2-Trichloroethane		U		0.001	0.05
Dibromochloromethane		U		0.001	0.05
Ethylene dibromide		U		0.001	0.05
Bromoform		U		0.001	0.05
Chlorobenzene-d_5		IS 3	9.79		
4-Methyl-2-pentanone		U		0.001	0.05
Toluene	0.051	B	7.60		0.05
Tetrachloroethene		U		0.001	0.05
2-Hexanone		U		0.001	0.05
Chlorobenzene		U		0.001	0.05
Ethylbenzene	0.002	J	10.13		0.05
m-/p-Xylene	0.004	J	10.36		0.10
o-Xylene	0.002	J	11.07		0.05
Styrene	0.003	J	11.12		0.05
1,1,2,2-Tetrachloroethane		U		0.001	0.05

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

Pacific Environmental Services

Project Number: 42284 | **Method 8240A VOST**
Sample File: HS349 | **Sample ID: VOST FB 2 TUBEA/B T/TC**

Client Project: S407-003 | **Date Received: 06/30/97** | **Response File: ICALH708**
TLI ID: 173-46-14A,B
Date Analyzed : 07/08/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
Cumene	0.001	J	11.84		0.05

Surrogate Summary	Amount (ug)	RT	IS Ref	%REC
1,2-Dichloroethane-d_4	0.289	5.11	1	116
Benzene-d_6	0.286	5.09	2	114
Toluene-d_8	0.288	7.51	3	115

Reviewed by TW Date 7/22/97

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

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Pacific Environmental Services

Project Number: 42284 Method 8240A
Sample File: HS349 Sample ID: VOST FB 2 TUBEA/B T/TC

Client Project:	S407-003	Date Received:	06/30/97
TLI ID:	173-46-14A,B	Date Analyzed:	07/08/97
	Dilution Factor:	1.00	

Tentatively Identified Compounds

Name	RT	Area	IS RT	IS Area	Amount, ug
Methylbutane Isomer	1.630	27735310	4.511	3221199	2.153
Halogenated Hydrocarbon	2.160	5619273	4.511	3221199	0.436
Methyl Propane Isomer	0.86	4951311	4.511	3221199	0.384
Tetrahydrodimethyl Pyranone Isomer	4.120	2873874	4.511	3221199	0.223
Pentane	1.940	1721163	4.511	3221199	0.134
Alkane	3.250	1466024	4.511	3221199	0.114
Alkane	2.420	1084714	4.511	3221199	0.084
C4H8 Isomer	1.011	921672	4.511	3221199	0.072

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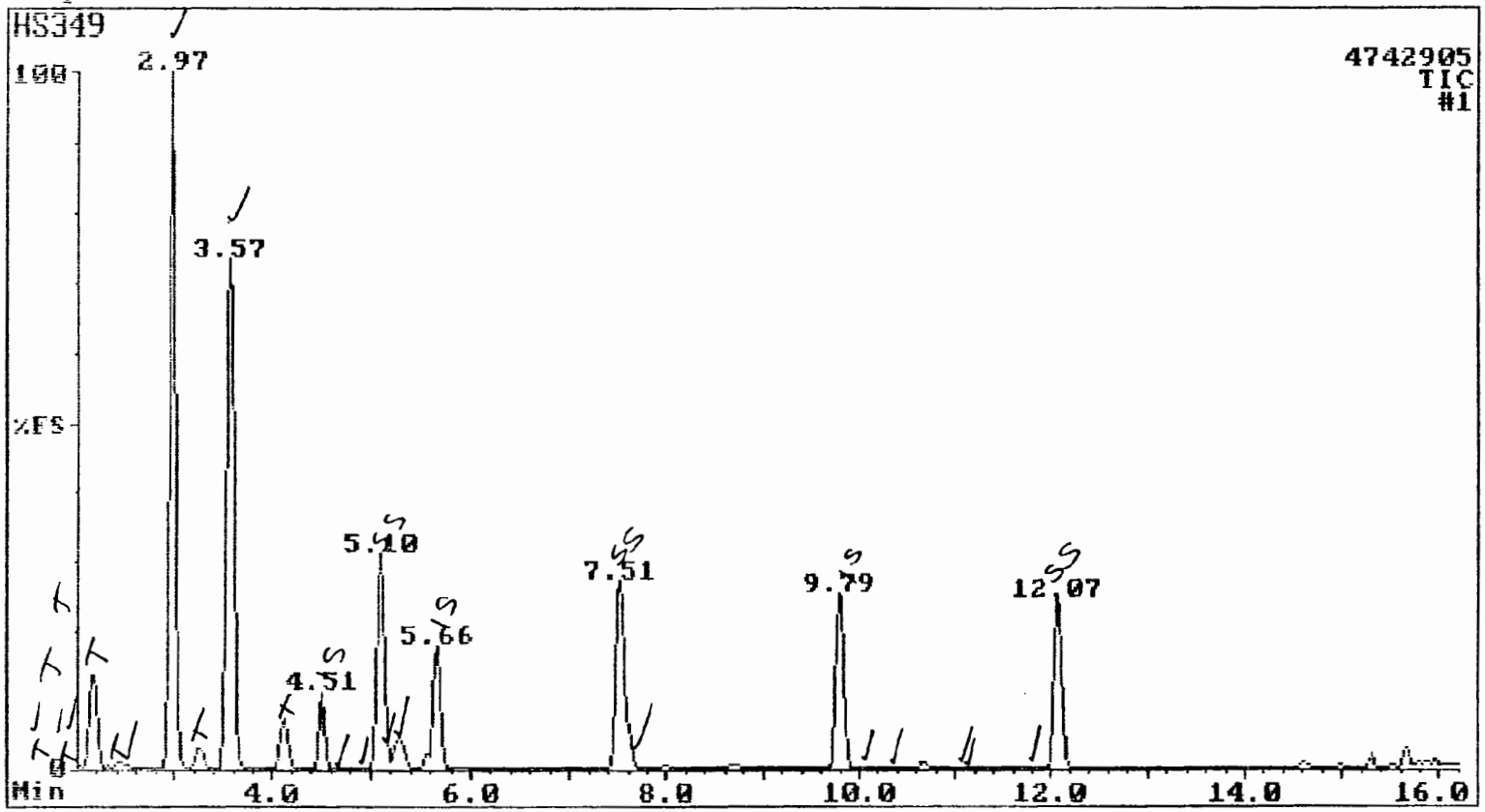
07-08-97 21:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST FB 2 TUBEA/B T/TC 173-46-14A/B TLI#42284 Instrument H



Data Review: TW
Date: 7-16-97

UAN DB : HS349 LAB-BASE QUAN 07-08-97 21:35

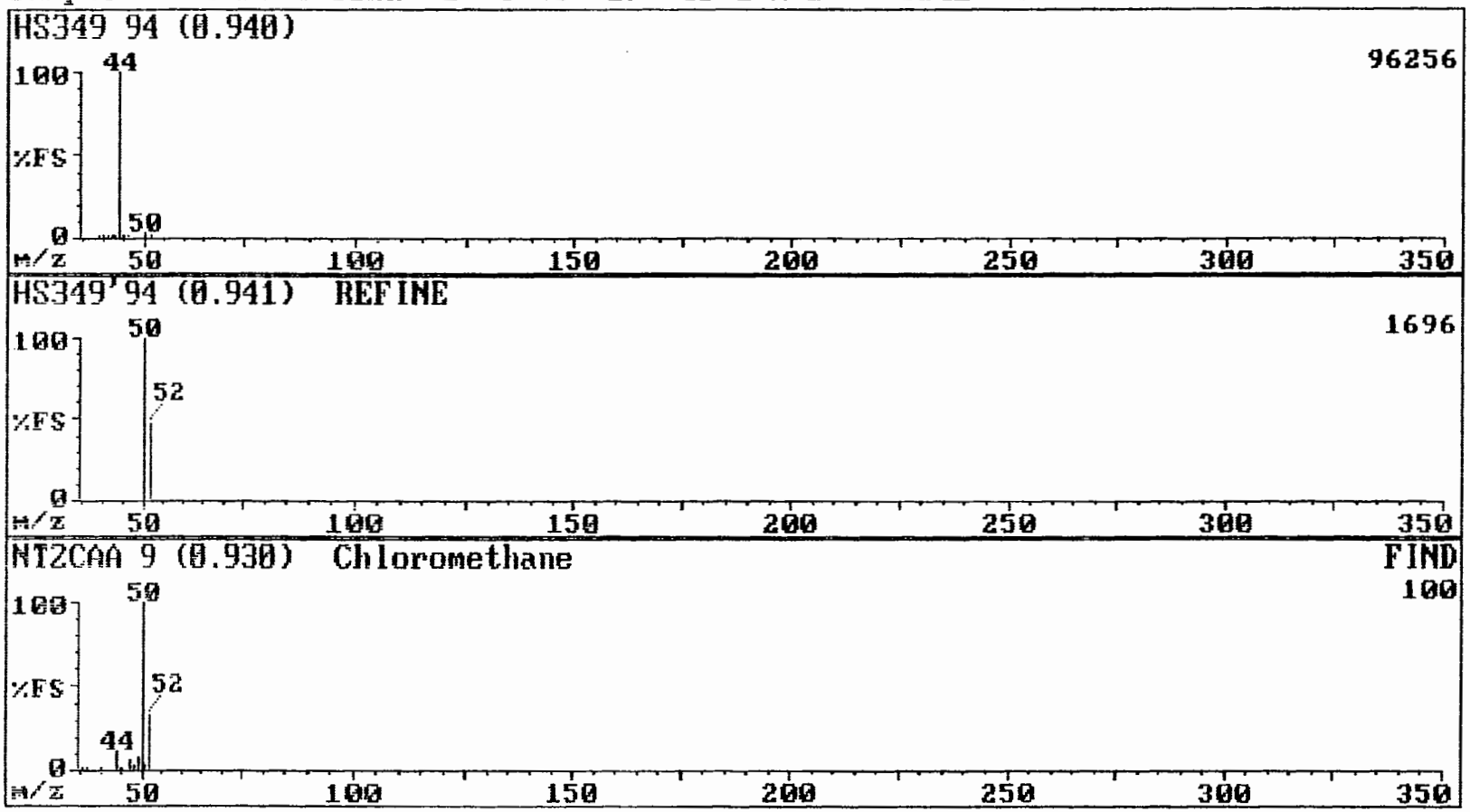
No.	MAT	FOR	REV	Delta	Area	P.Flags	RT	QM	Name
1	100	97	99	0	358608	bv	4.51	128	Bromochloromethane
2	100	95	97	0	2283036	bv	5.66	114	1,4-Difluorobenzene
3	100	98	98	-1	2790100	bv	9.79	117	Chlorobenzene-d5
4	75	37	85	1	1116032	bv	5.11	65	1,2-Dichloroethane-d4
5	100	82	83	0	3018588	bv	5.09	84	Benzene-d6
6	100	93	99	1	3652564	bv	7.51	98	Toluene-d8
7	0	0	0	0	0		0.00	98	o-Xylene-d10
8	100	88	93	1	1797144	bv	12.07	95	4-Bromofluorobenzene
9	22	17	18	1	13724	vv	0.94	50	Chloromethane
10	0	0	0	0	0		0.00	62	Vinyl Chloride
11	0	0	0	0	0		0.00	39	1,3-Butadiene
12	58	11	81	0	11452	bb	1.42	94	Bromomethane
13	0	0	0	0	0		0.00	64	Chloroethane
14	0	0	0	0	0		0.00	106	Vinyl bromide
15	84	42	94	0	59392	bb	1.84	101	Trichlorofluoromethane
~~16~~	~~27~~	~~14~~	~~53~~	~~-23~~	~~4116~~	~~A~~	~~2.15~~	96	1,1-Dichloroethene FP TW
17	0	0	0	0	0		0.00	142	Iodomethane
~~18~~	~~35~~	~~17~~	~~39~~	~~0~~	~~10372~~	~~bb~~	~~2.50~~	76	Carbon disulfide FP TW
19	81	64	66	0	84168	vv	2.57	43	Acetone
20	0	0	0	0	0		0.00	76	Allyl chloride
21	100	85	95	0	4370152	bv	2.97	84	Methylene chloride
22	0	0	0	0	0		0.00	96	trans-1,2-Dichloroethene
~~23~~	~~70~~	~~55~~	~~57~~	~~0~~	~~14832~~	~~A~~	~~3.33~~	73	tert-Butyl methyl ether
~~24~~	~~20~~	~~6~~	~~27~~	~~-2~~	~~13016~~	~~bb~~	~~3.25~~	53	Acrylonitrile FP TW
25	100	99	100	0	6374104	bv	3.57	57	n-Hexane
26	0	0	0	0	0		0.00	63	1,1-Dichloroethane
~~27~~	~~53~~	~~43~~	~~53~~	~~7~~	~~216404~~	~~bb~~	~~4.12~~	~~42~~	1,2-Epoxybutane FP TW
28	0	0	0	0	0		0.00	96	cis-1,2-Dichloroethene
29	51	19	64	0	3556	A	4.66	83	Chloroform
~~30~~	~~28~~	~~10~~	~~36~~	~~-1~~	~~26452~~	~~A~~	~~5.10~~	62	1,2-Dichloroethane FP TW
31	100	88	96	0	973516	vv	5.29	57	Isooctane
~~32~~	~~35~~	~~24~~	~~33~~	~~1~~	~~504~~	~~bb~~	~~3.85~~	43	Vinyl acetate FP TW
33	0	0	0	0	0		0.00	72	2-Butanone
~~34~~	~~28~~	~~10~~	~~36~~	~~0~~	~~2928~~	~~A~~	~~4.75~~	97	1,1,1-Trichloroethane FP TW
35	96	64	89	0	13832	A	4.91	117	Carbon tetrachloride
36	90	55	93	1	482677	bv	5.14	78	Benzene
~~37~~	~~45~~	~~22~~	~~51~~	~~1~~	~~368~~	~~bb~~	~~5.91~~	130	Trichloroethene FP TW
38	0	0	0	0	0		0.00	63	1,2-Dichloropropane
39	0	0	0	0	0		0.00	55	Ethyl acrylate
40	0	0	0	0	0		0.00	69	Methyl methacrylate
41	0	0	0	0	0		0.00	83	Bromodichloromethane
42	0	0	0	0	0		0.00	75	cis-1,3-Dichloropropene
43	0	0	0	0	0		0.00	75	trans-1,3-Dichloropropen
44	0	0	0	0	0		0.00	97	1,1,2-Trichloroethane
45	0	0	0	0	0		0.00	129	Dibromochloromethane
46	0	0	0	0	0		0.00	107	Ethylene dibromide
47	0	0	0	0	0		0.00	173	Bromoform
~~48~~	~~52~~	~~1~~	~~84~~	~~2~~	~~28212~~	~~bv~~	~~7.51~~	43	4-Methyl-2-pentanone FP TW
49	100	91	98	1	423336	bb	7.60	92	Toluene
~~50~~	~~24~~	~~17~~	~~22~~	~~0~~	~~360~~	~~bb~~	~~8.40~~	164	Tetrachloroethene FP TW

Data Review: TW
Date: 7-16-97

No.	MAT	FOR	REV	Delta	Area	P.Flags	RT	QM	Name
~~51~~	~~23~~	~~32~~	~~32~~	~~18~~	~~2348~~	~~bb~~	~~8.99~~	43	2-Hexanone
~~52~~	~~39~~	~~10~~	~~54~~	~~1~~	~~11784~~	~~bb~~	~~9.84~~	112	Chlorobenzene
53	88	69	76	1	10696	bb	10.13	106	Ethylbenzene
54	100	84	84	0	28044	bb	10.36	106	m-/p-Xylene
55	88	72	72	1	11656	A	11.07	106	o-Xylene
56	93	75	78	1	28176	bb	11.12	104	Styrene
57	0	0	0	0	0		0.00	83	1,1,2,2-Tetrachloroethan
58	81	65	75	2	20076	A	11.84	105	Cumene

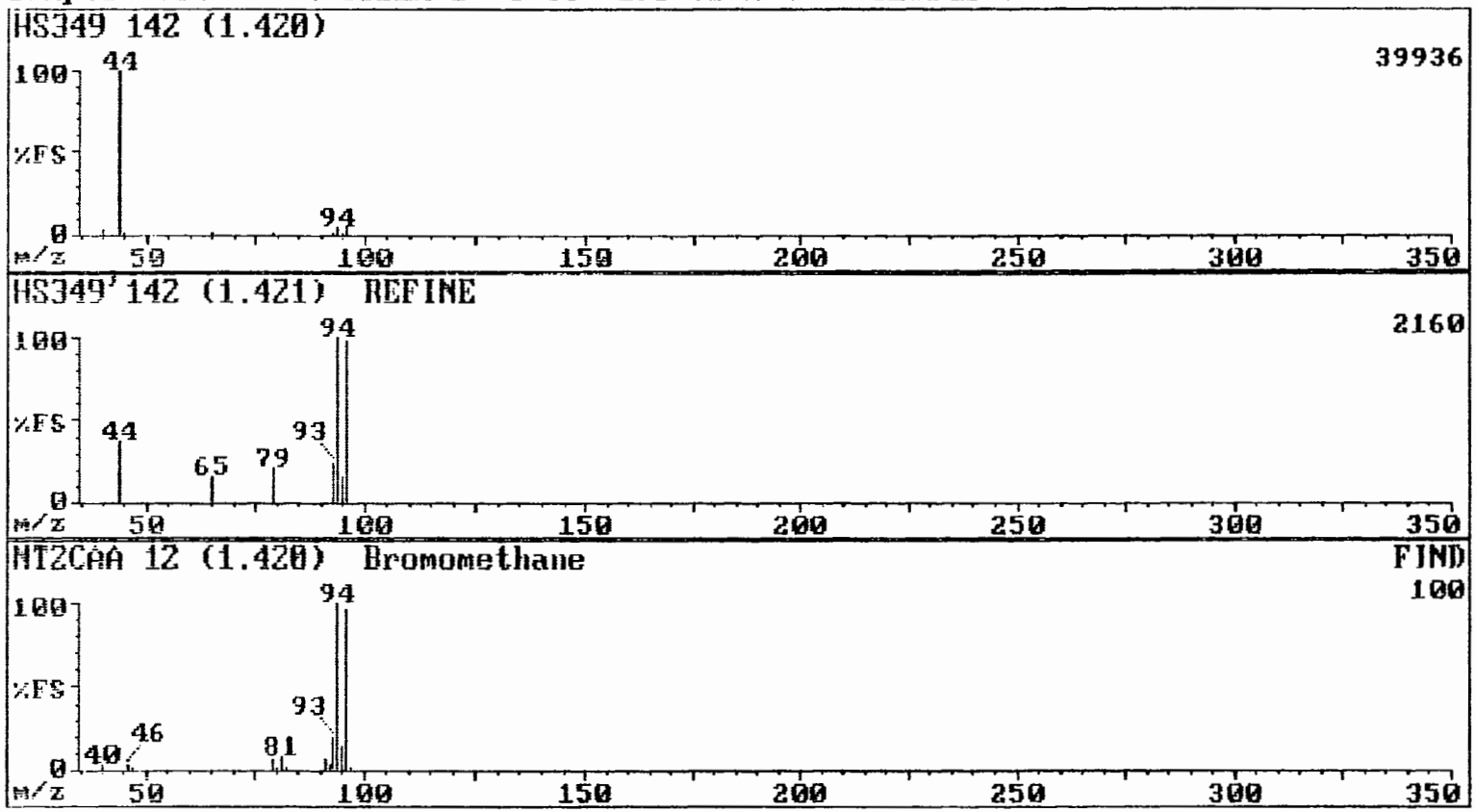
07-08-97 21:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST FB 2 TUBEA/B T/TC 173-46-14A/B TLI#42284 Instrument H



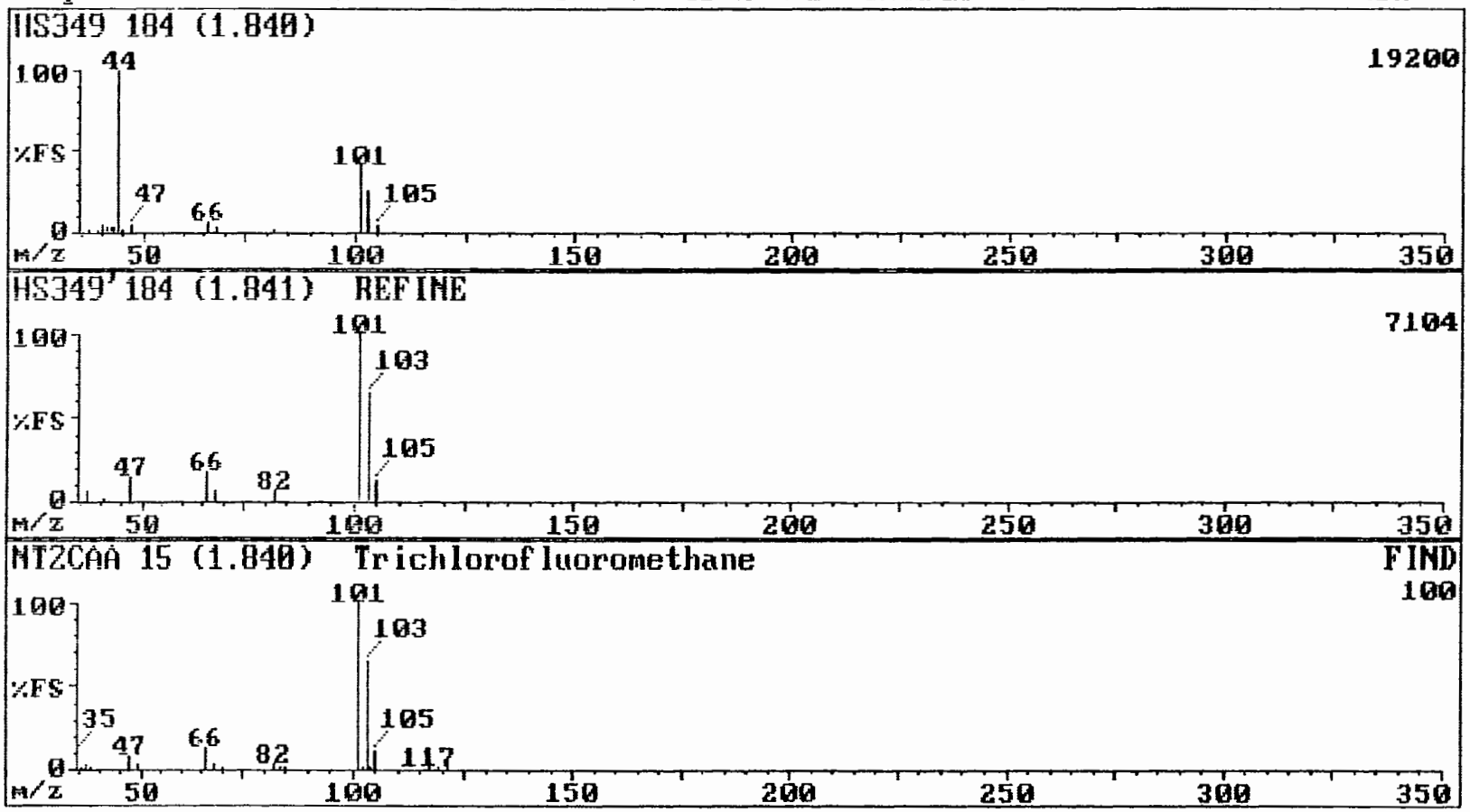
07-08-97 21:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST FB 2 TUBEA/B T/TC 173-46-14A/B TLI#42284 Instrument H



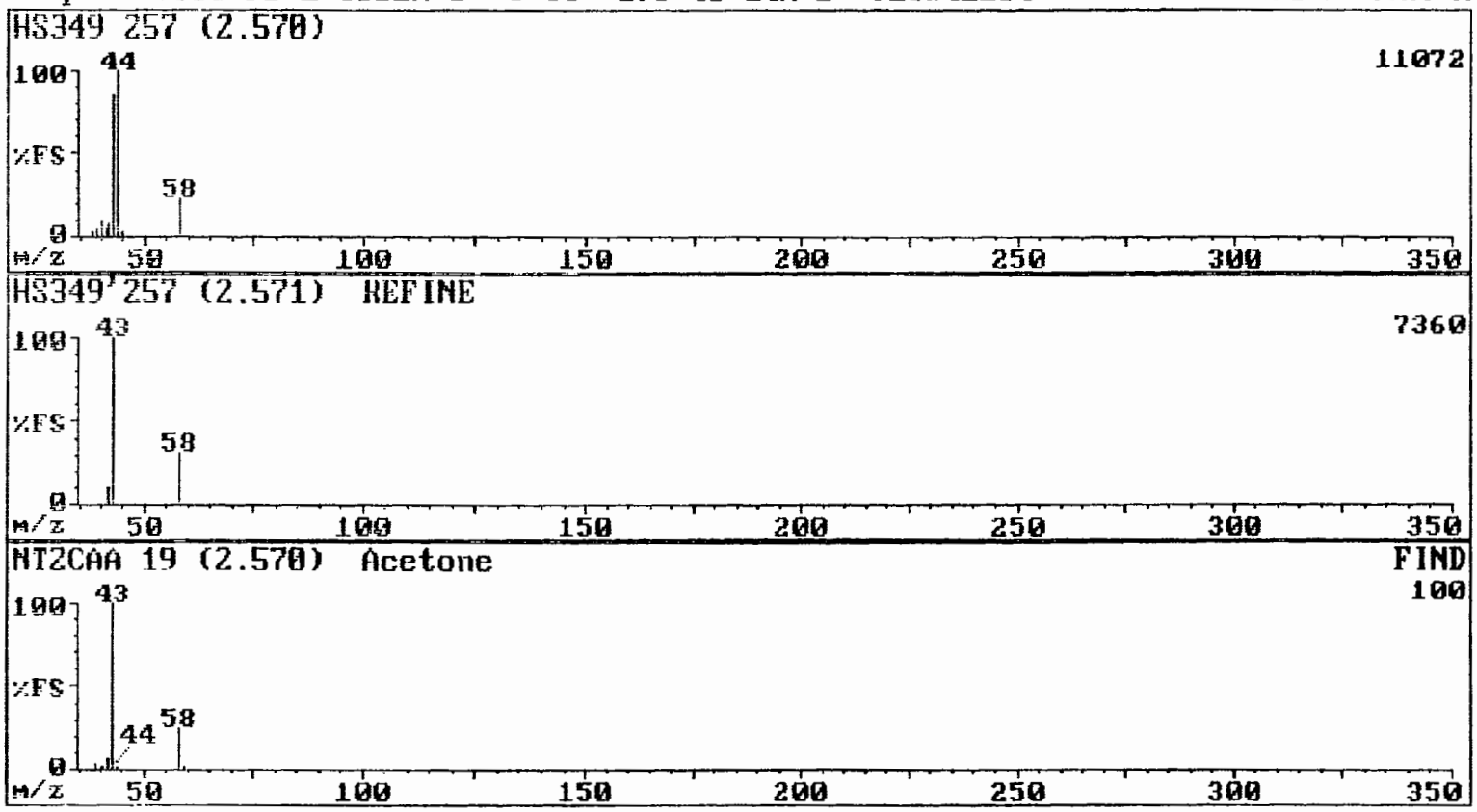
07-08-97 21:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST FB 2 TUBEA/B T/TC 173-46-14A/B TLI#42284 Instrument H



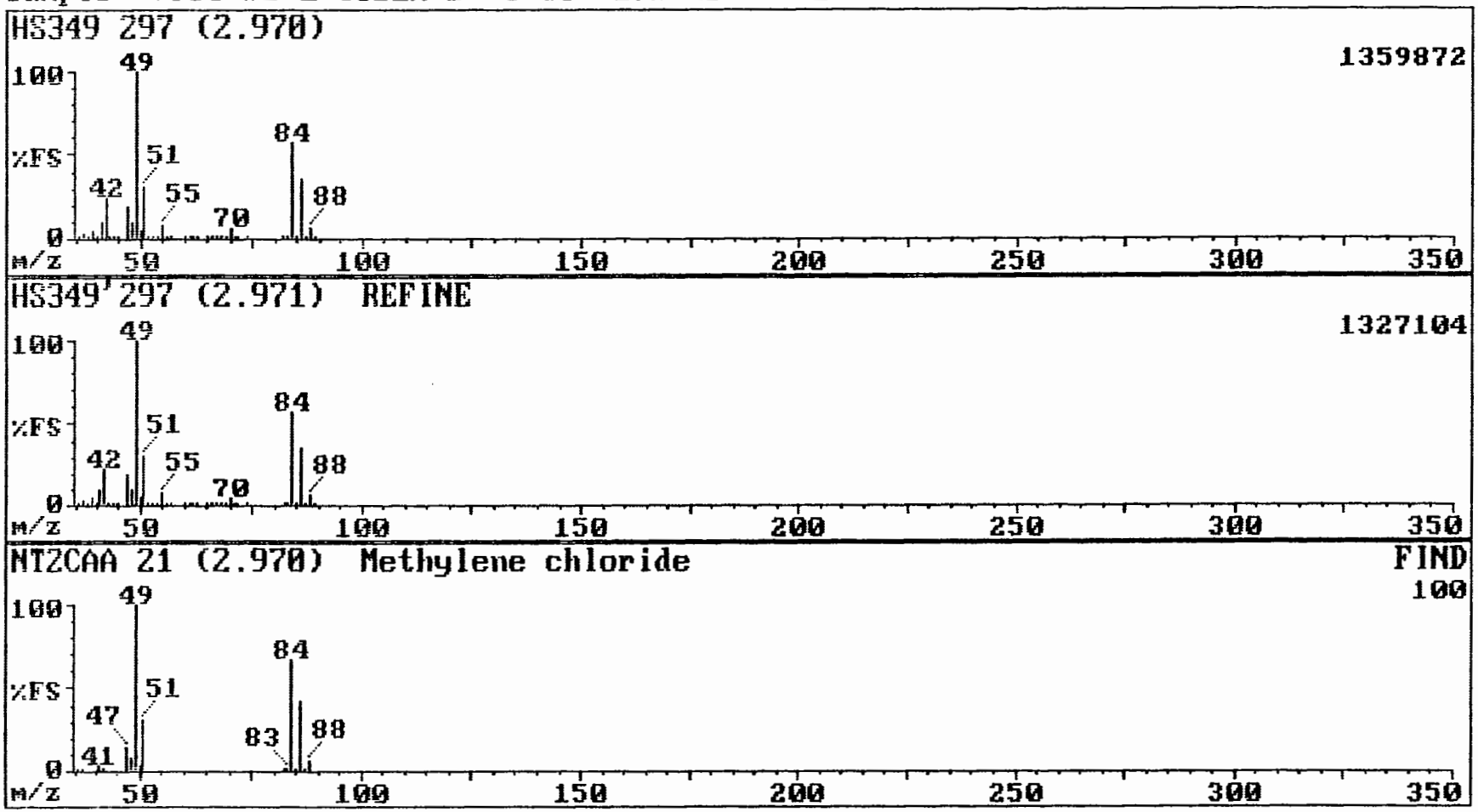
07-08-97 21:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST FB 2 TUBEA/B T/TC 173-46-14A/B TLI#42284 Instrument H



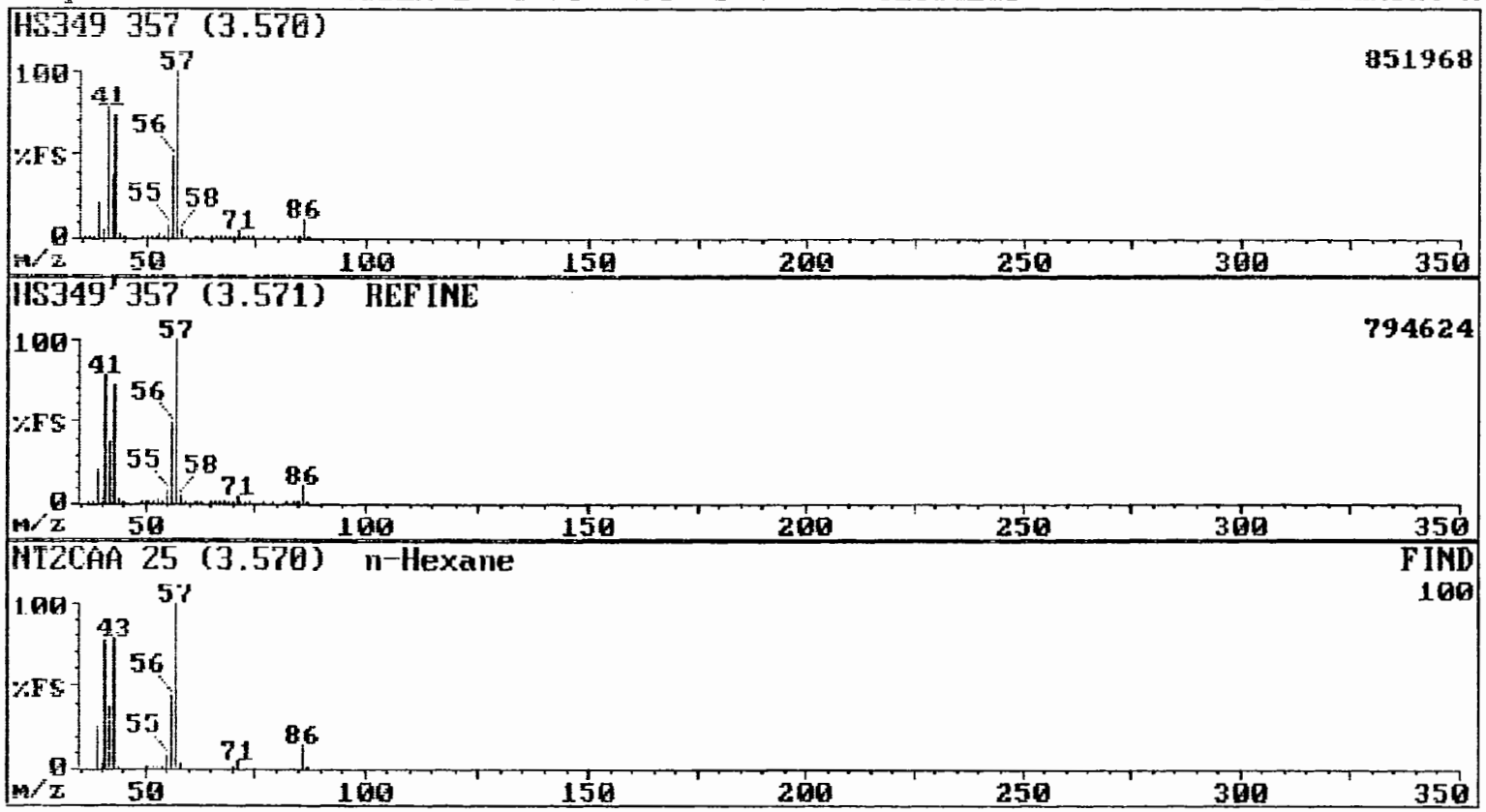
07-08-97 21:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST FB 2 TUBEA/B T/TC 173-46-14A/B TLI#42284 Instrument H



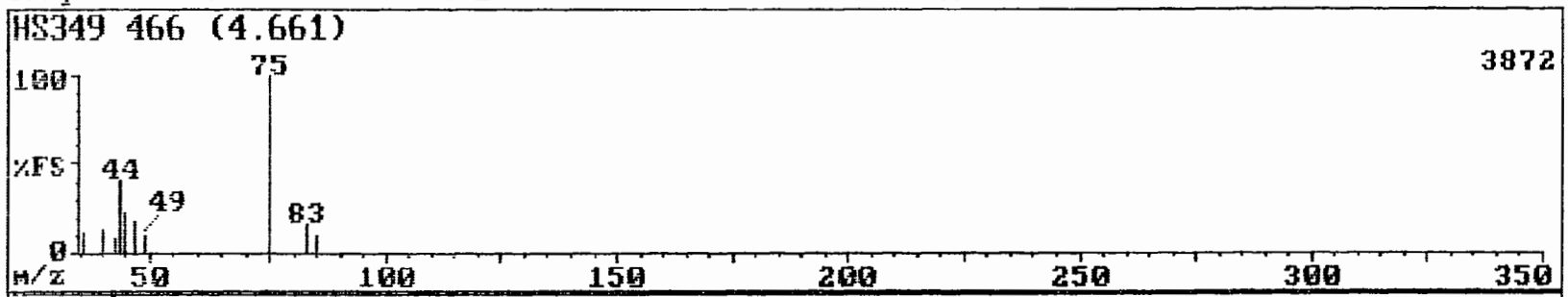
07-08-97 21:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

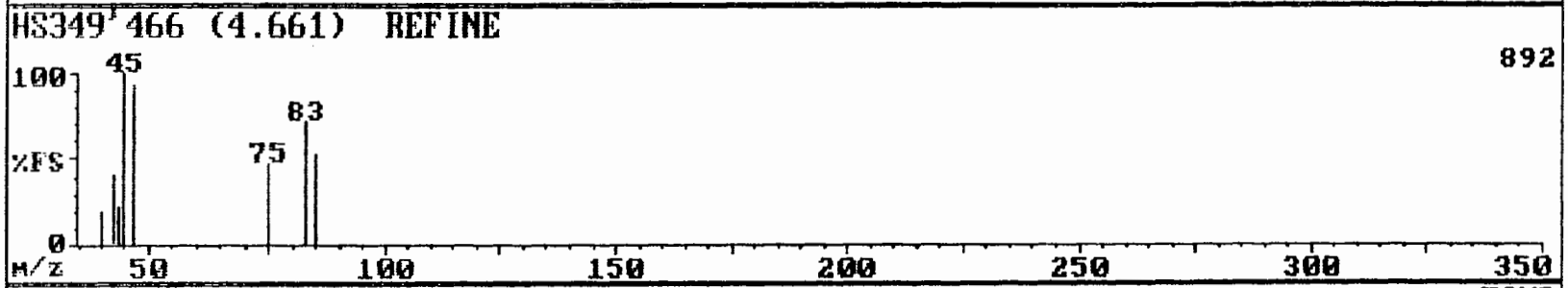
Sample: VOST FB 2 TUBEA/B T/TC 173-46-14A/B TLI#42284 Instrument H

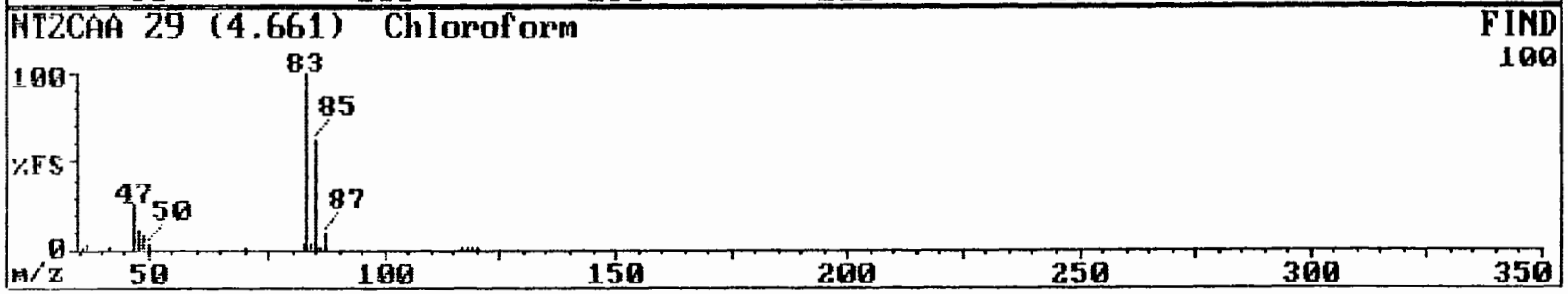


07-08-97 21:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST FB 2 TUBEA/B T/TC 173-46-14A/B TLI#42284 Instrument H

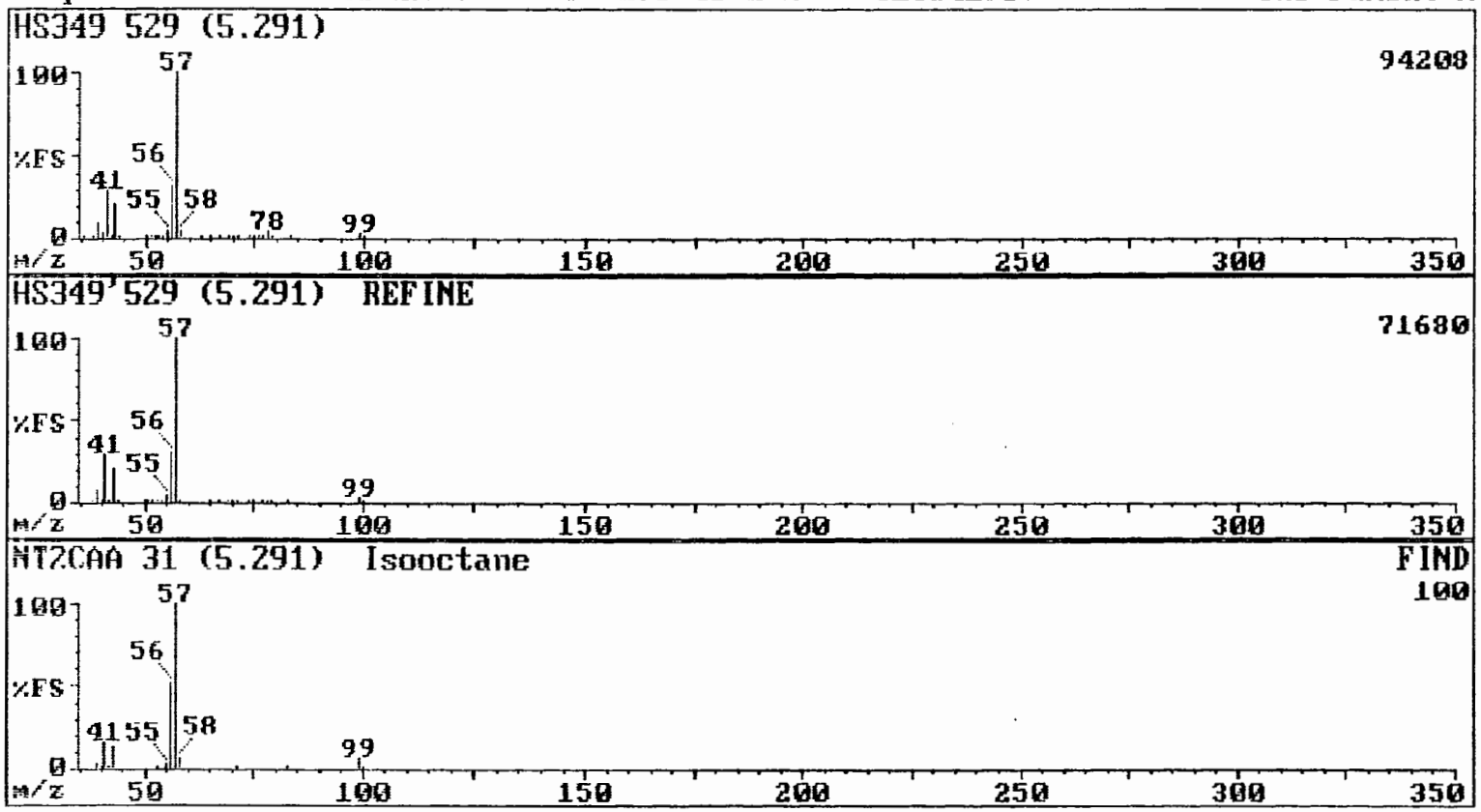






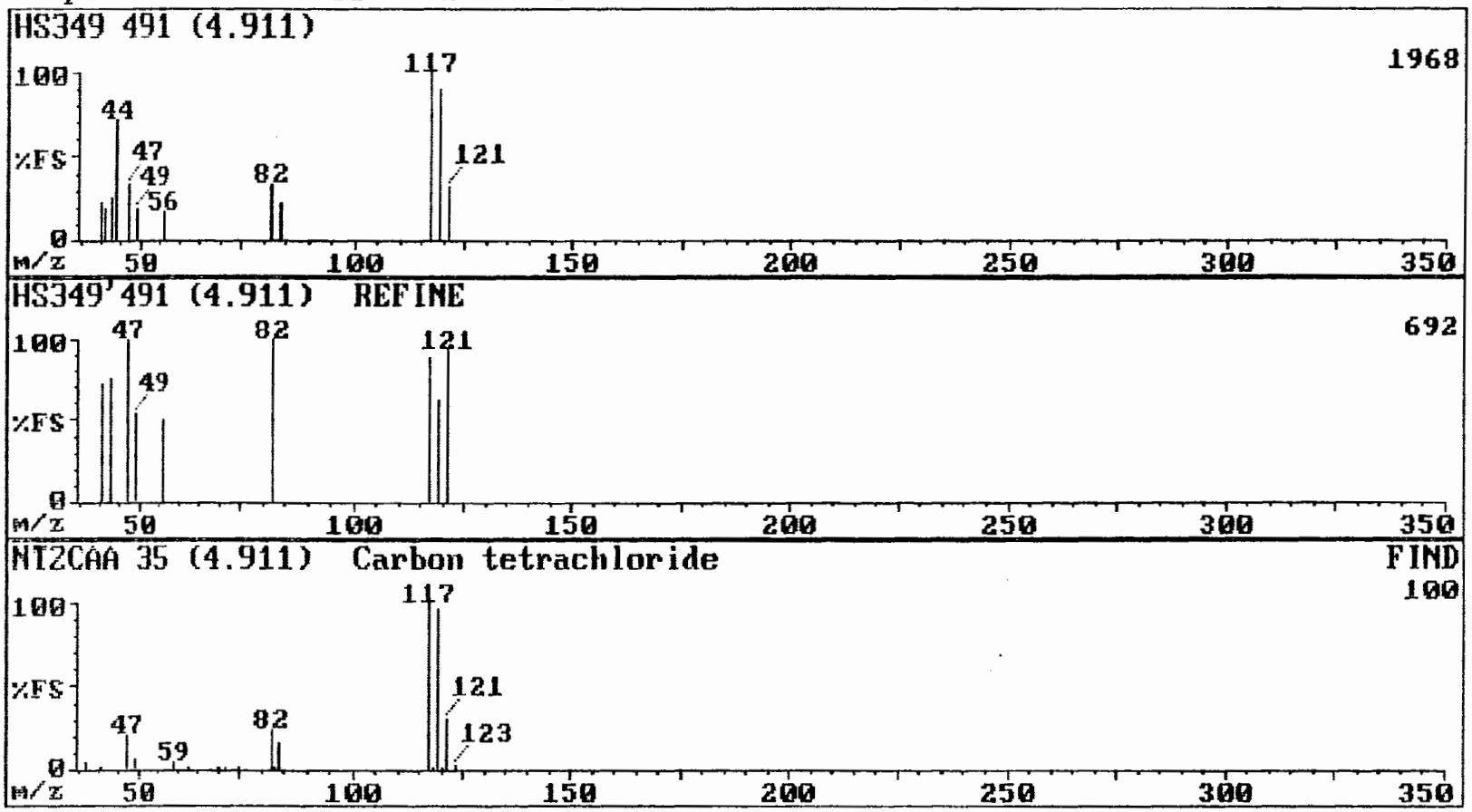
07-08-97 21:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST FB 2 TUBEA/B T/TC 173-46-14A/B TLI#42284 Instrument H



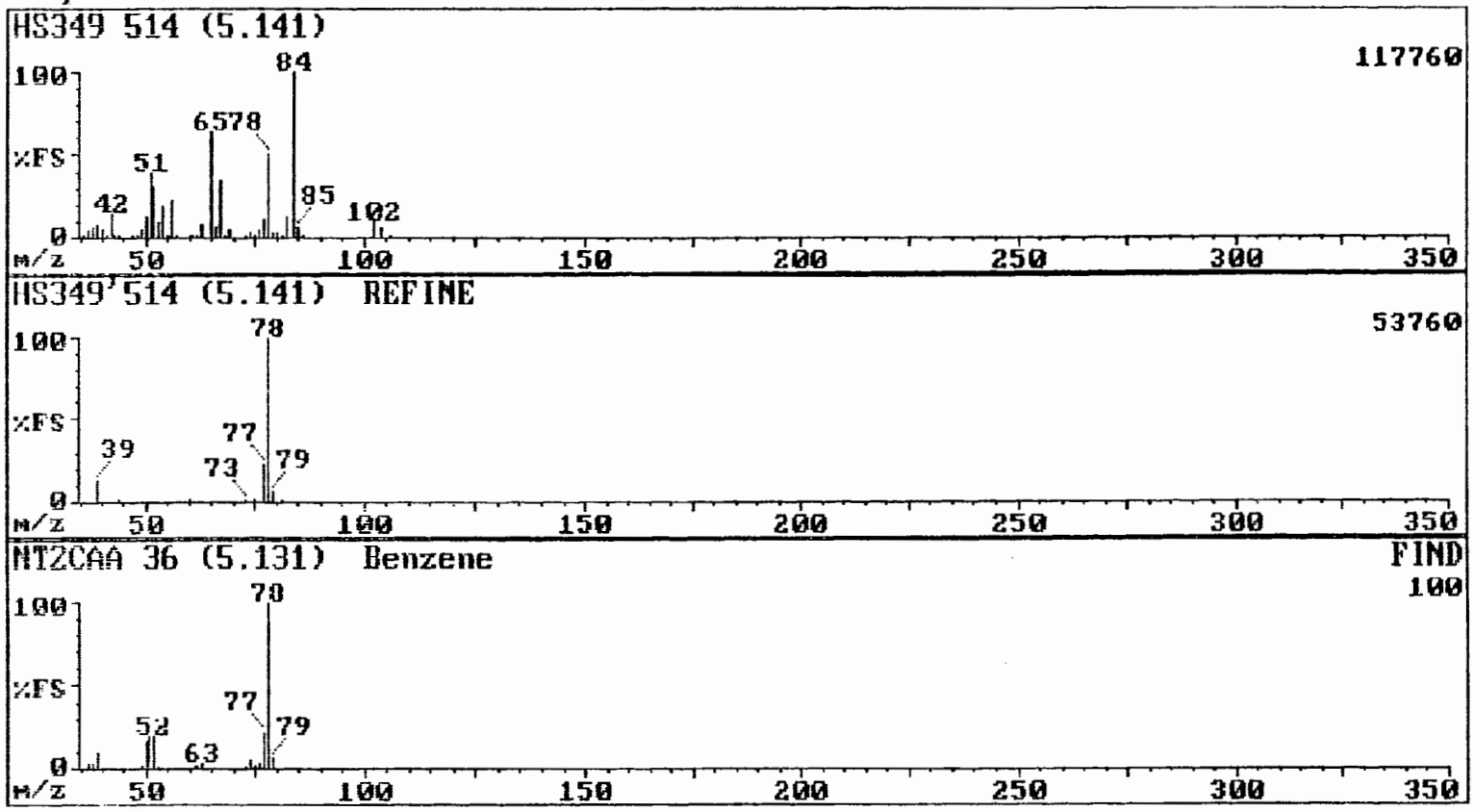
07-08-97 21:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST FB 2 TUBEA/B T/TC 173-46-14A/B TLI#42284 Instrument H



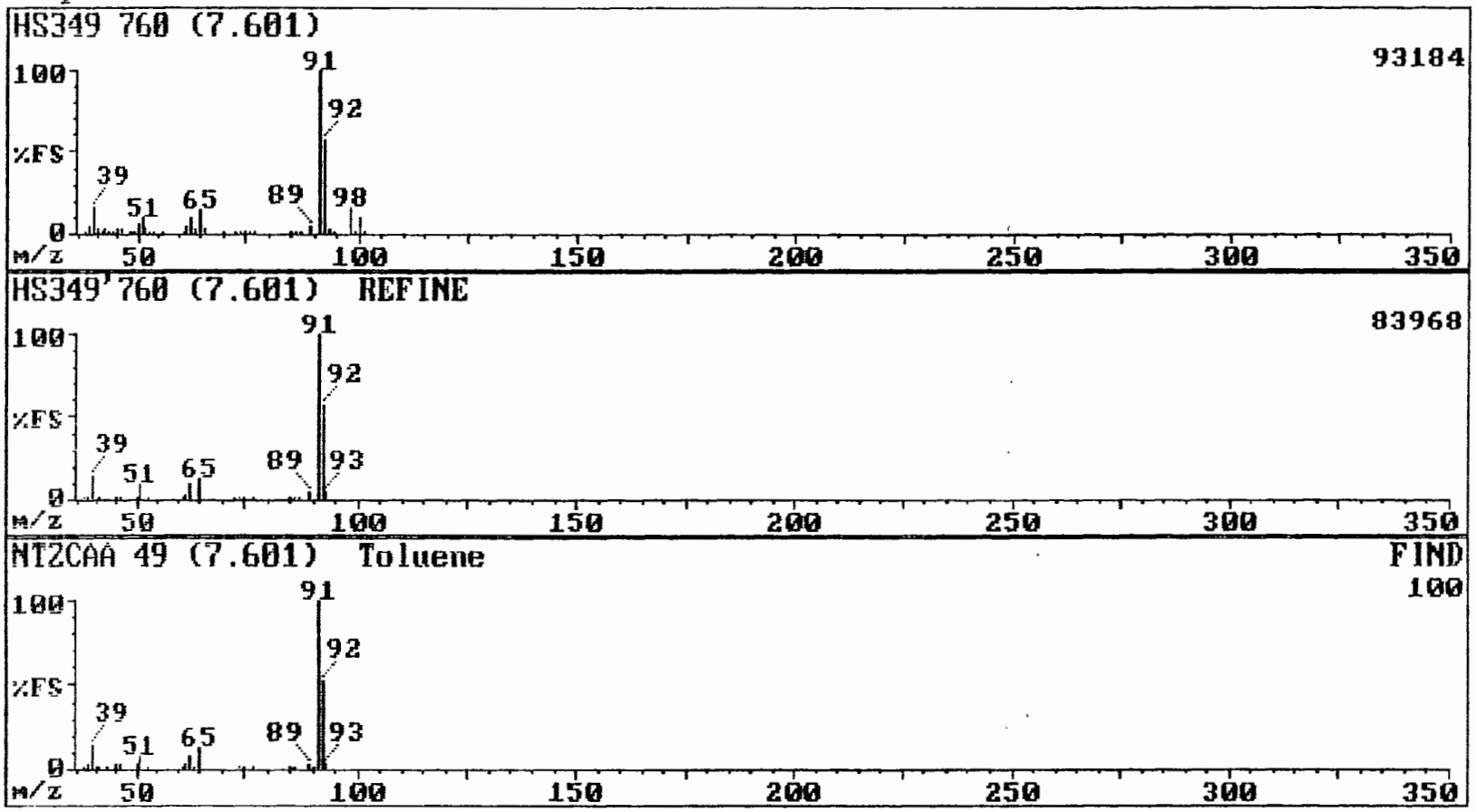
07-08-97 21:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST FB 2 TUBEA/B T/TC 173-46-14A/B TLI#42284 Instrument H



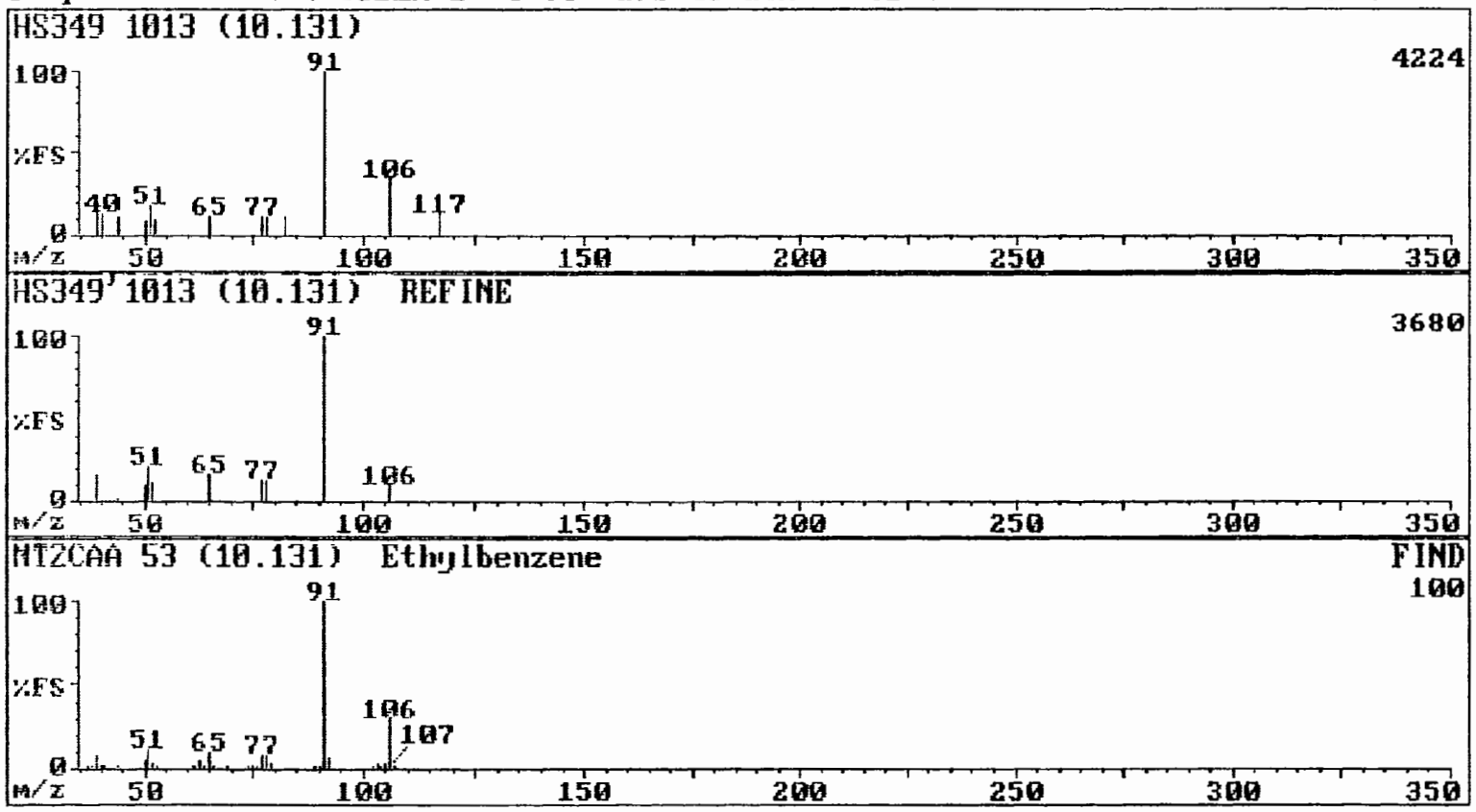
07-08-97 21:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST FB 2 TUBEA/B T/TC 173-46-14A/B TLI#42284 Instrument H



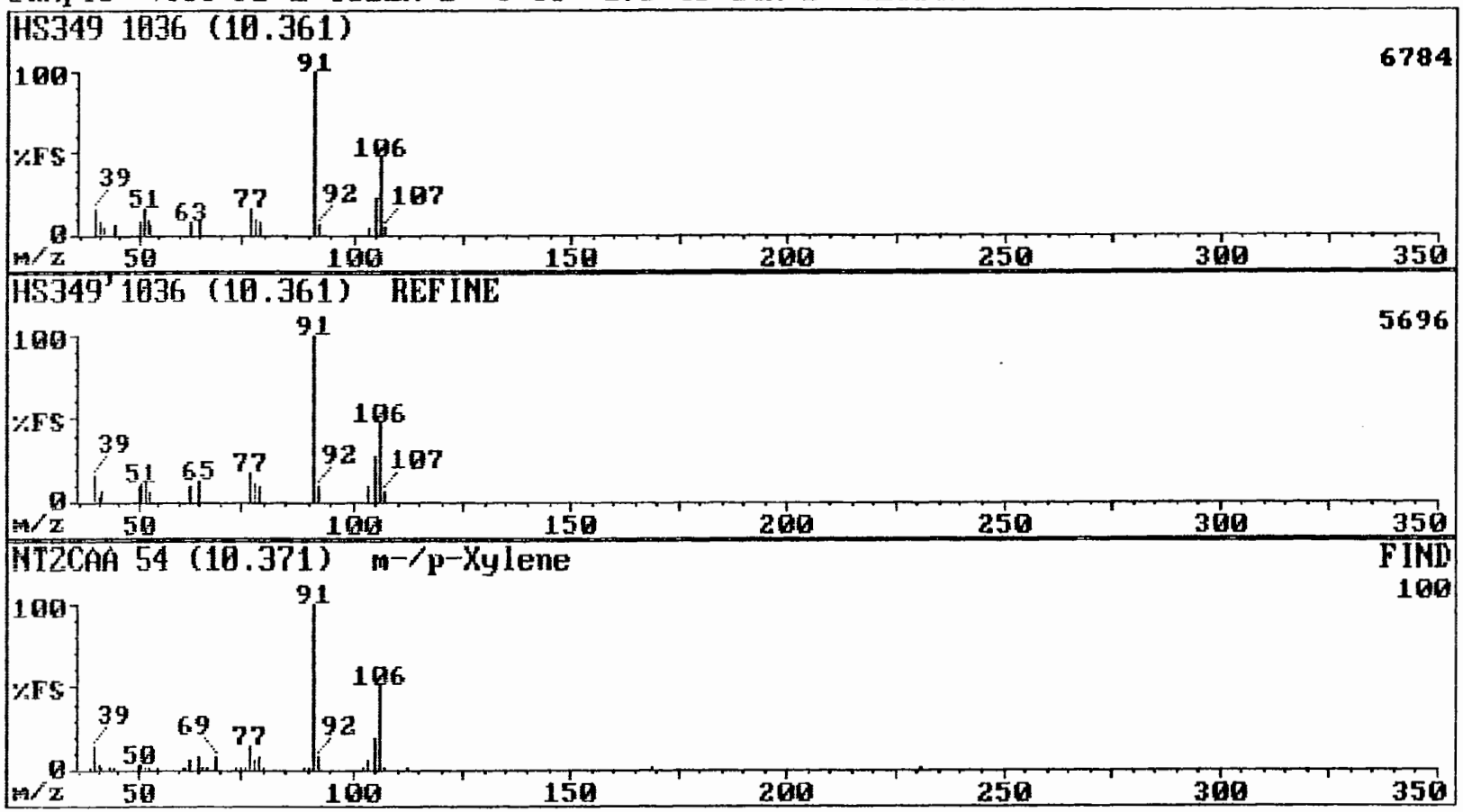
07-08-97 21:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST FB 2 TUBEA/B T/TC 173-46-14A/B TLI#42284 Instrument H



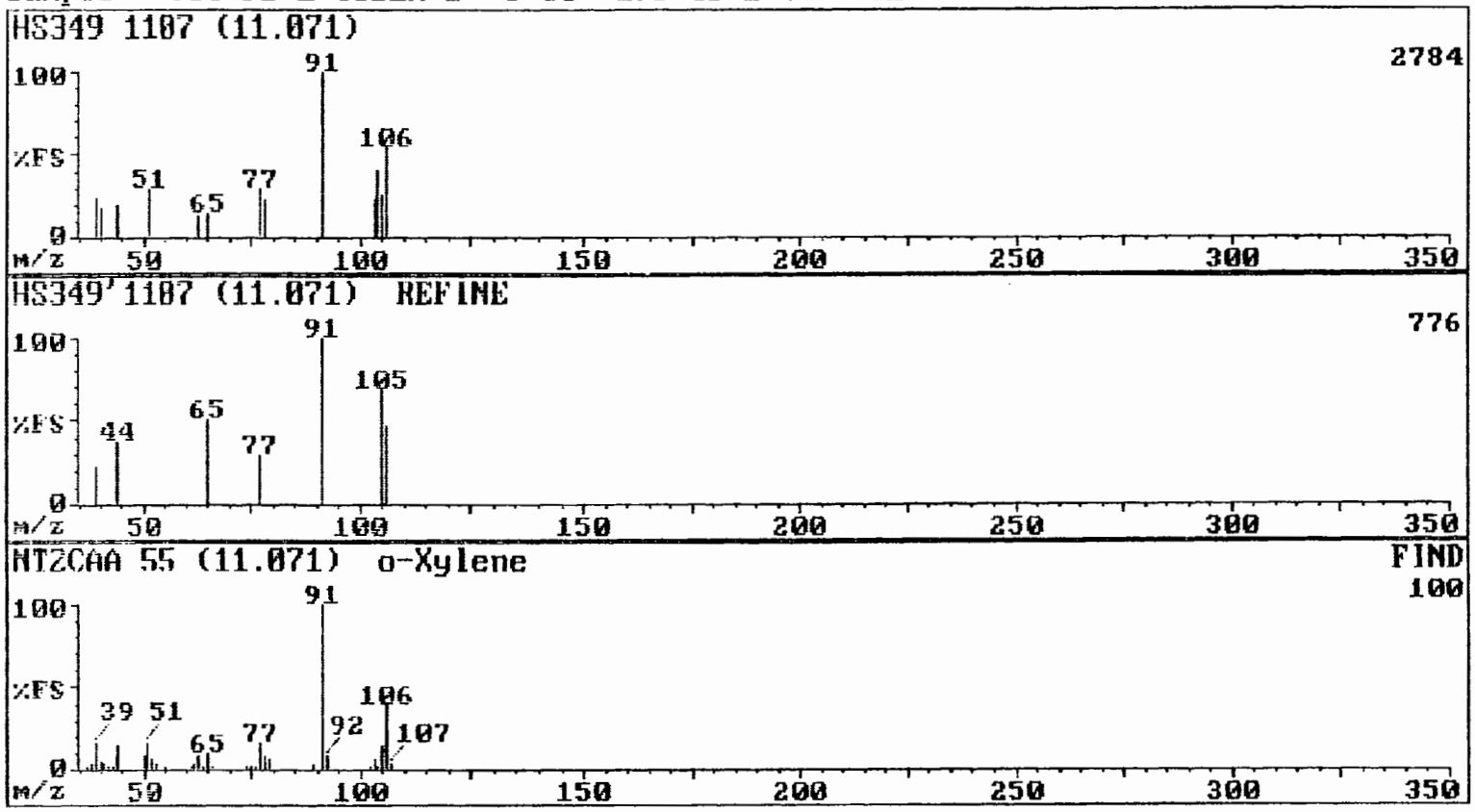
07-08-97 21:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST FB 2 TUBEA/B T/TC 173-46-14A/B TLI#42284 Instrument H



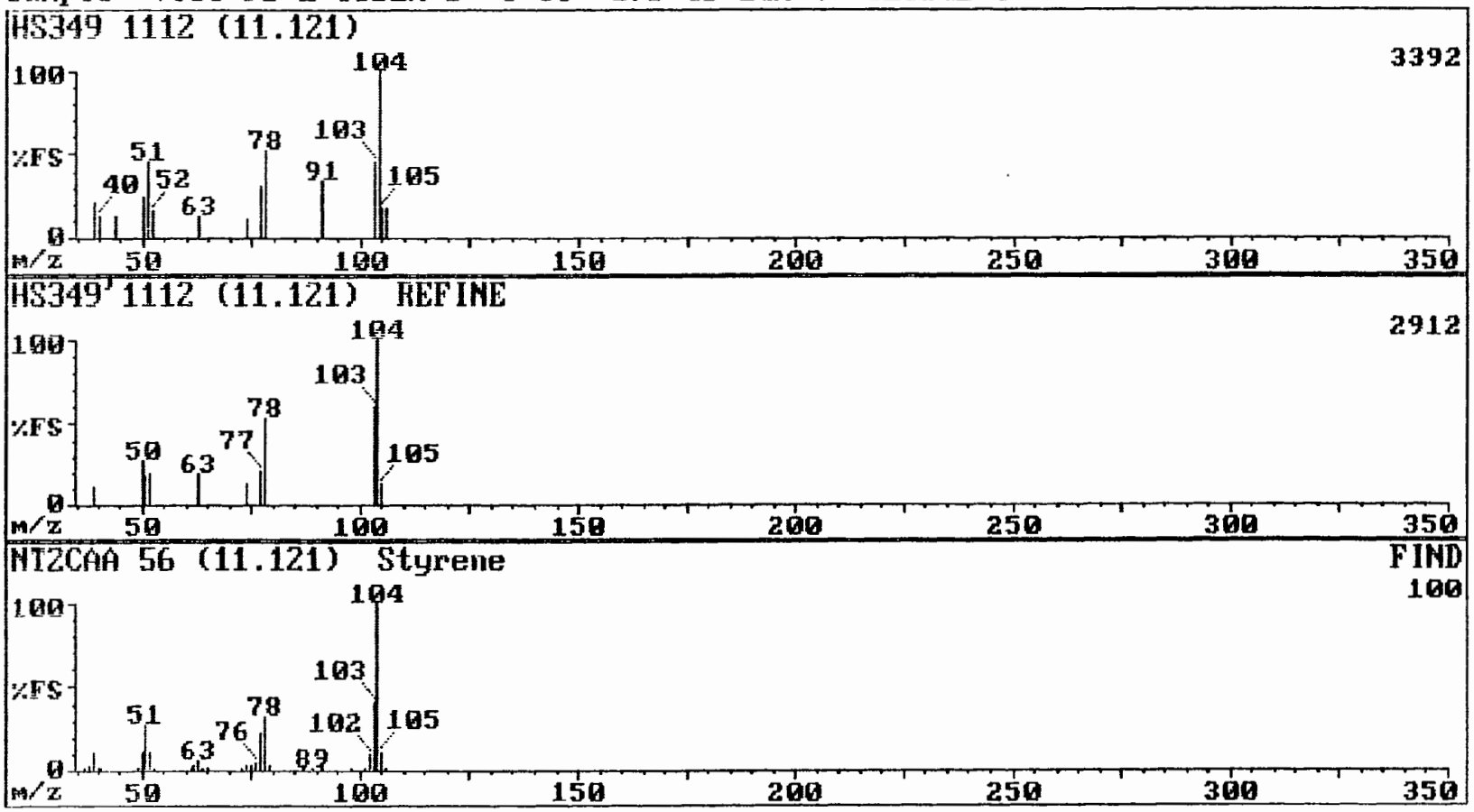
07-08-97 21:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST FB 2 TUBEA/B T/TC 173-46-14A/B TLI#42284 Instrument H



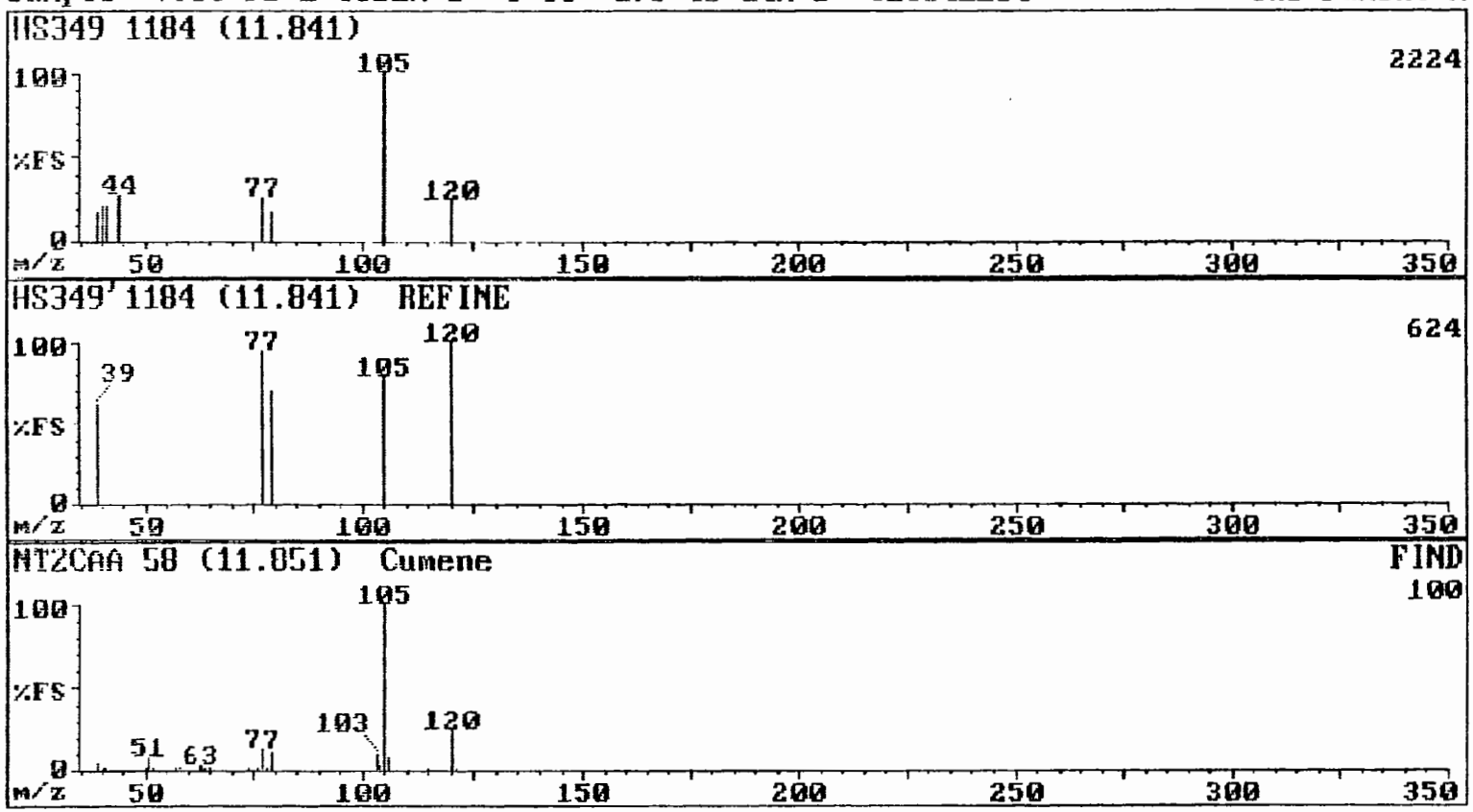
07-08-97 21:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST FB 2 TUBEA/B T/TC 173-46-14A/B TLI#42284 Instrument H



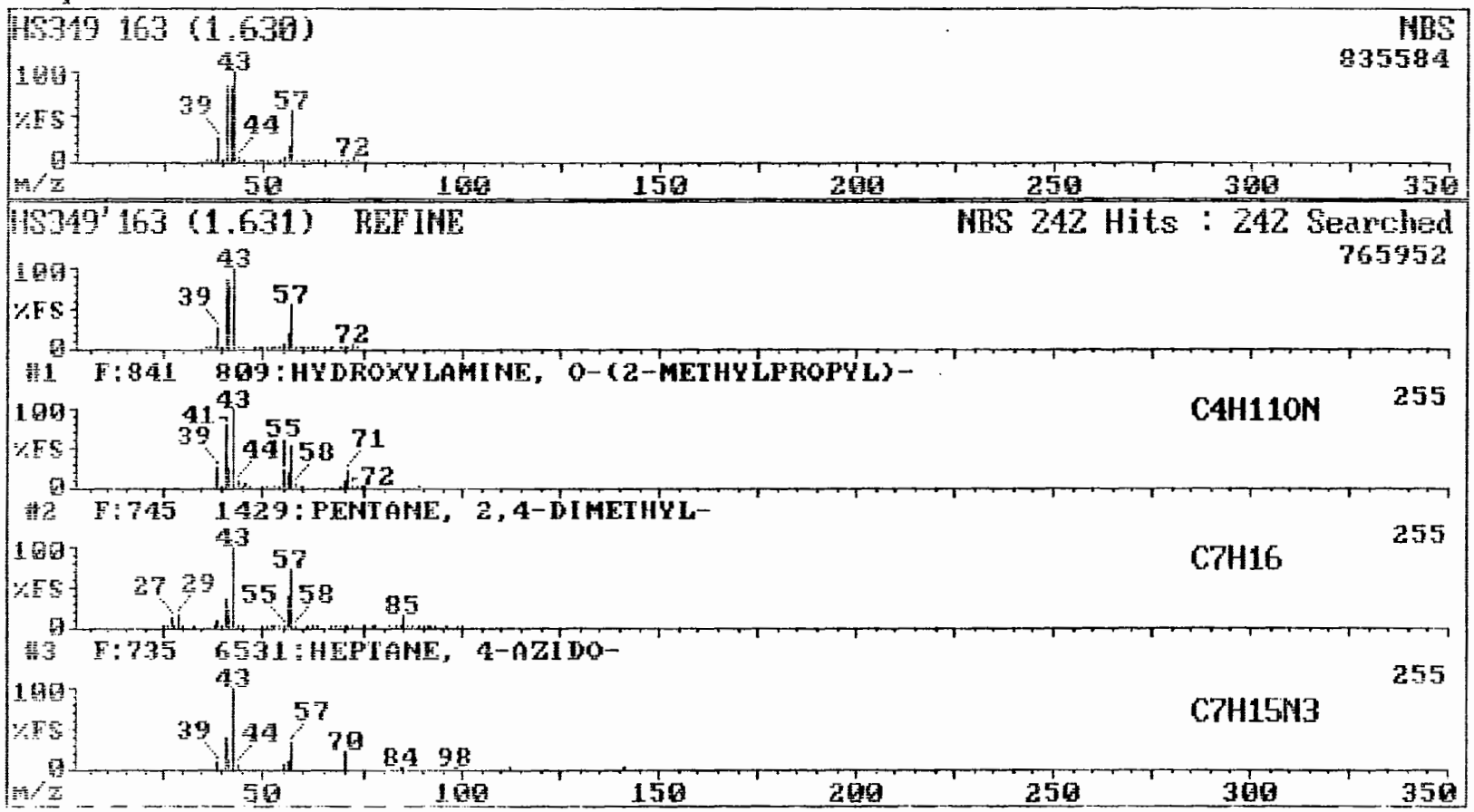
07-08-97 21:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST FB 2 TUBEA/B T/TC 173-46-14A/B TLI#42284 Instrument H



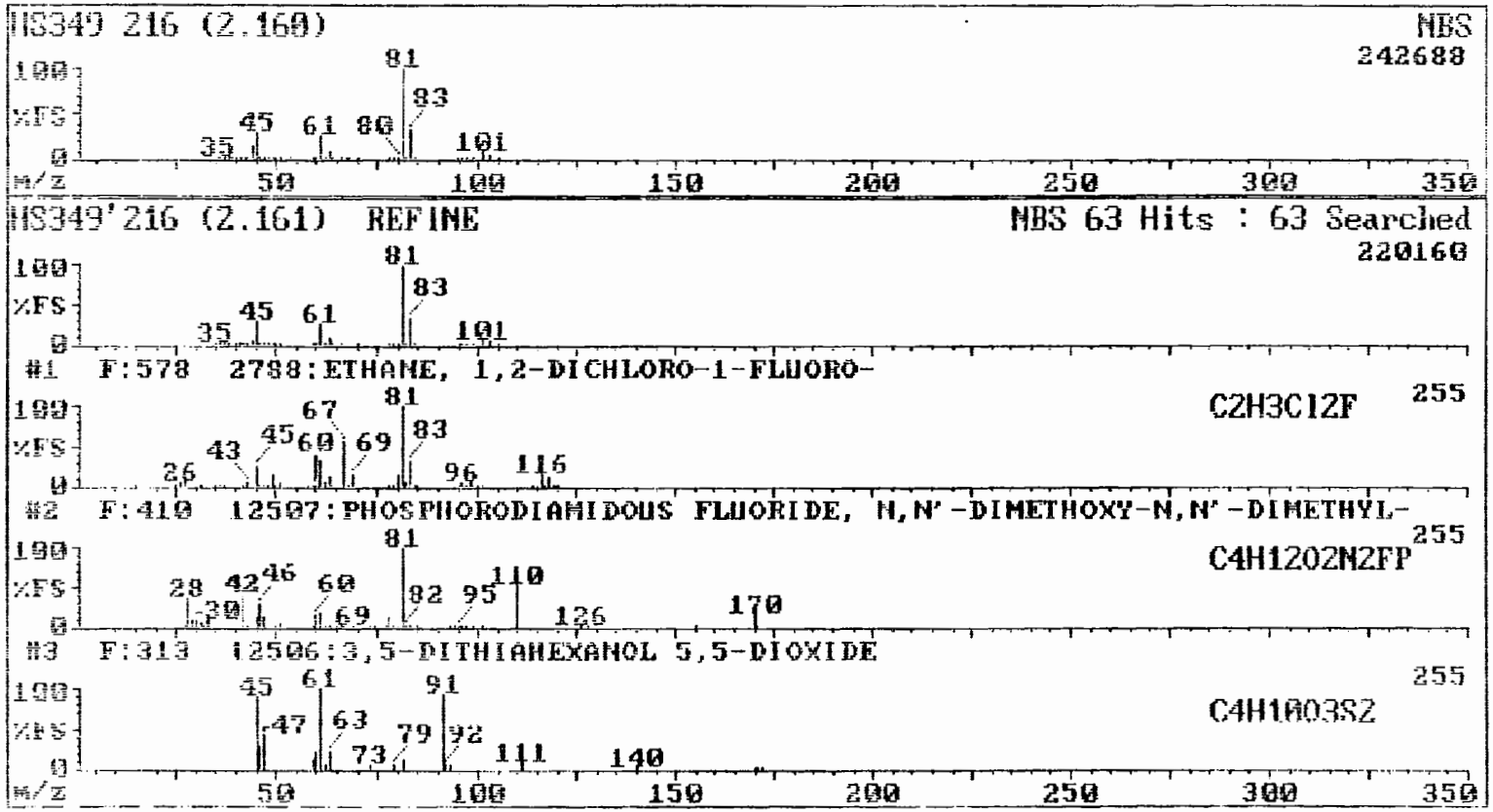
07/08/97 21:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST FB 2 TUBEA/B T/TC 173-46-14A/B TLI#42284 Instrument: H



07/08/97 21:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

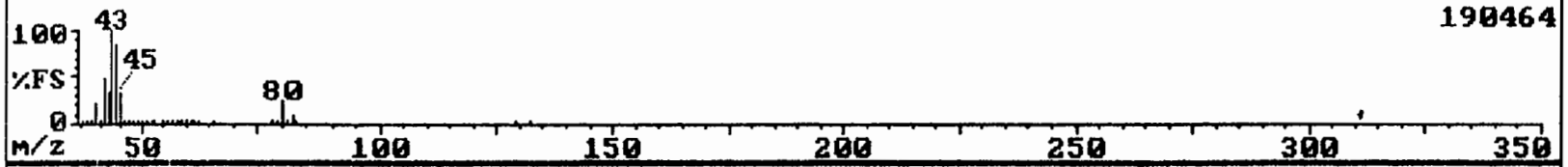
Sample: VOST FB 2 TUBEA/B T/TC 173-46-14A/B TLI#42284 Instrument: H



08-Jul-97 21:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

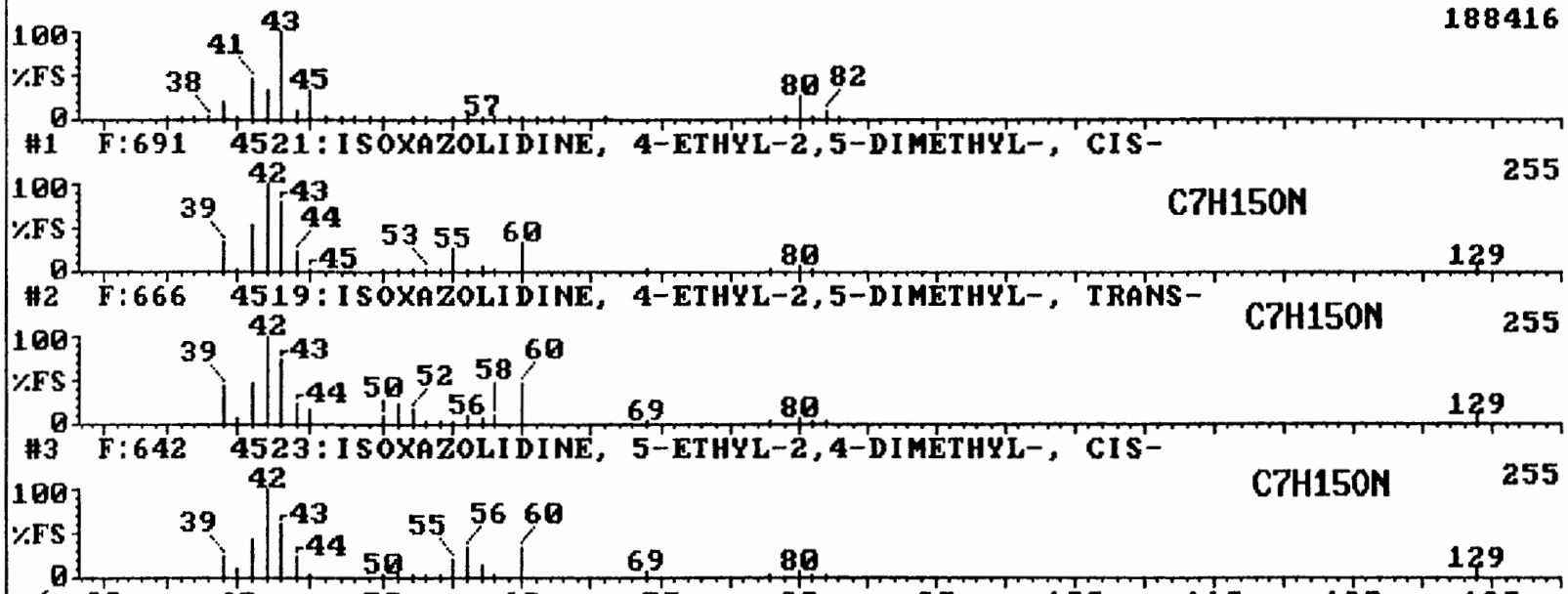
Sample: VOST FB 2 TUBEA/B T/TC 173-46-14A/B TLI#42284 Instrument H

HS349 86 (0.860) 190464



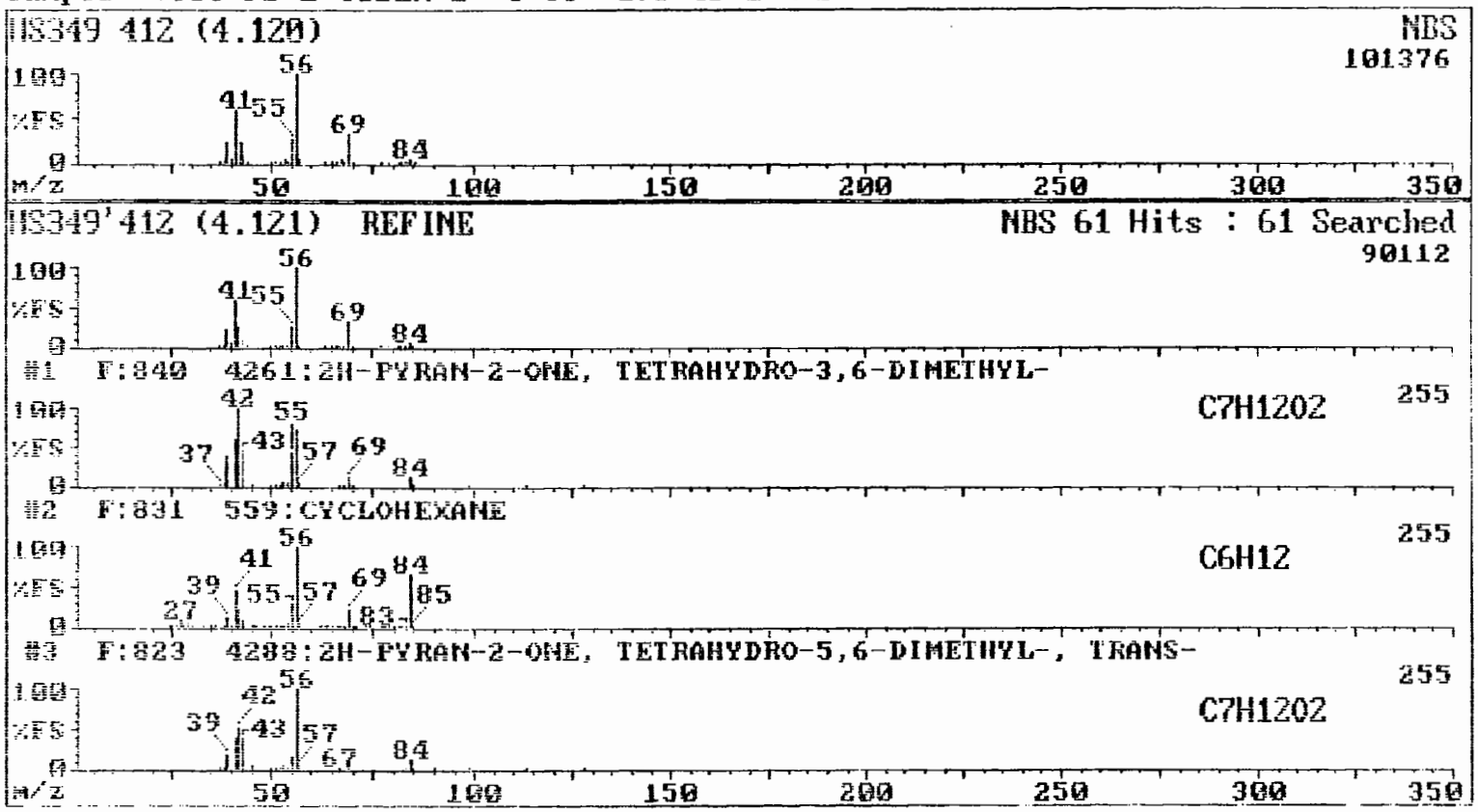
HS349'86 (0.861) REFINE NBS 74 Hits : 74 Searched

188416



07/08/97 21:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

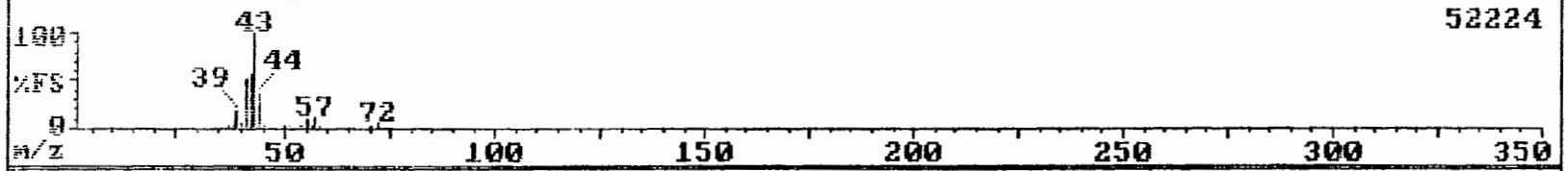
Sample: VOST FB 2 TUBEA/B T/TC 173-46-14A/B TLI#42284 Instrument: H



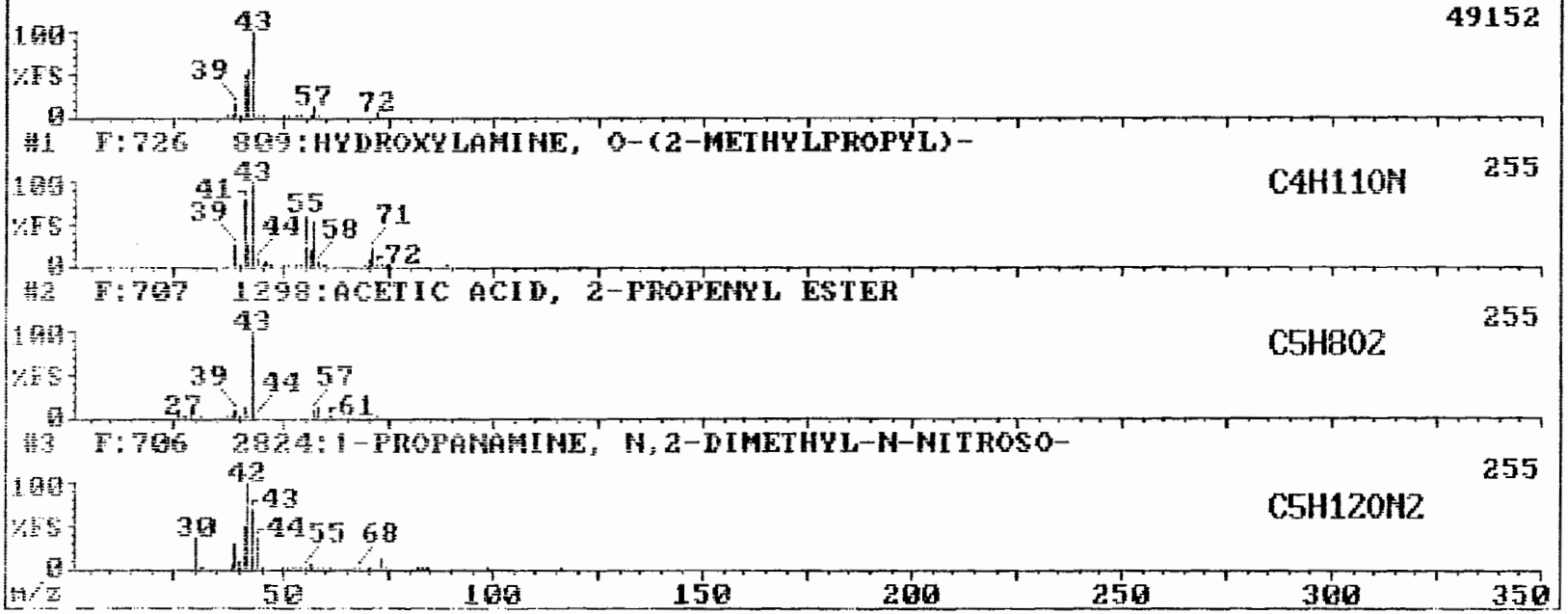
07/08/97 21:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST FB 2 TUBEA/B T/TC 173-46-14A/B TLI#42284 Instrument: H

HS349 194 (1.940) NBS 52224

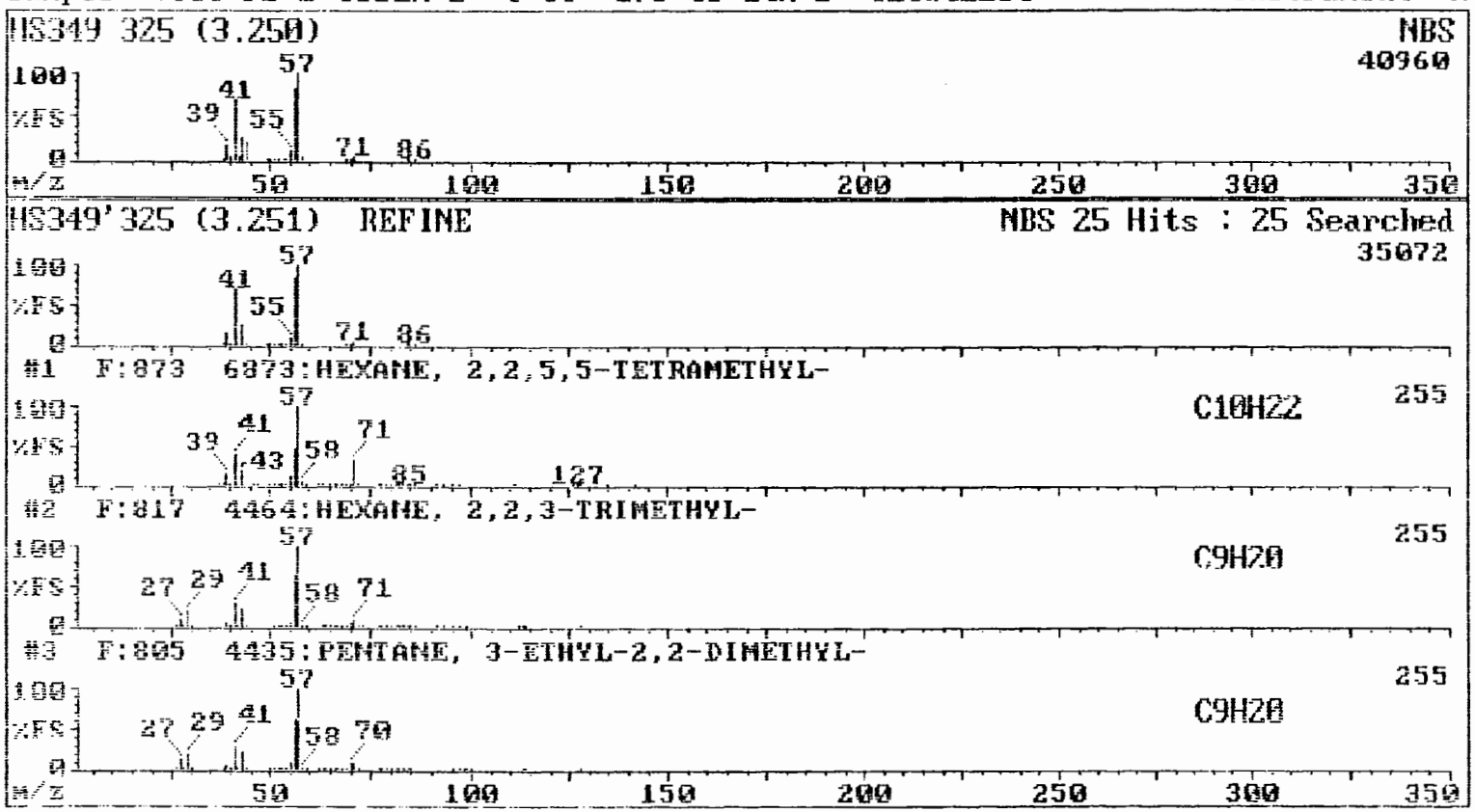


HS349'194 (1.941) REFINE NBS 83 Hits : 83 Searched 49152



07/08/97 21:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

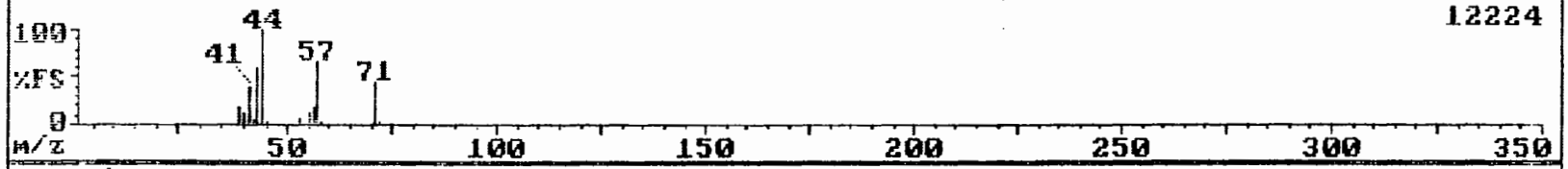
Sample: VOST FB 2 TUBEA/B T/TC 173-46-14A/B TLI#42284 Instrument: H



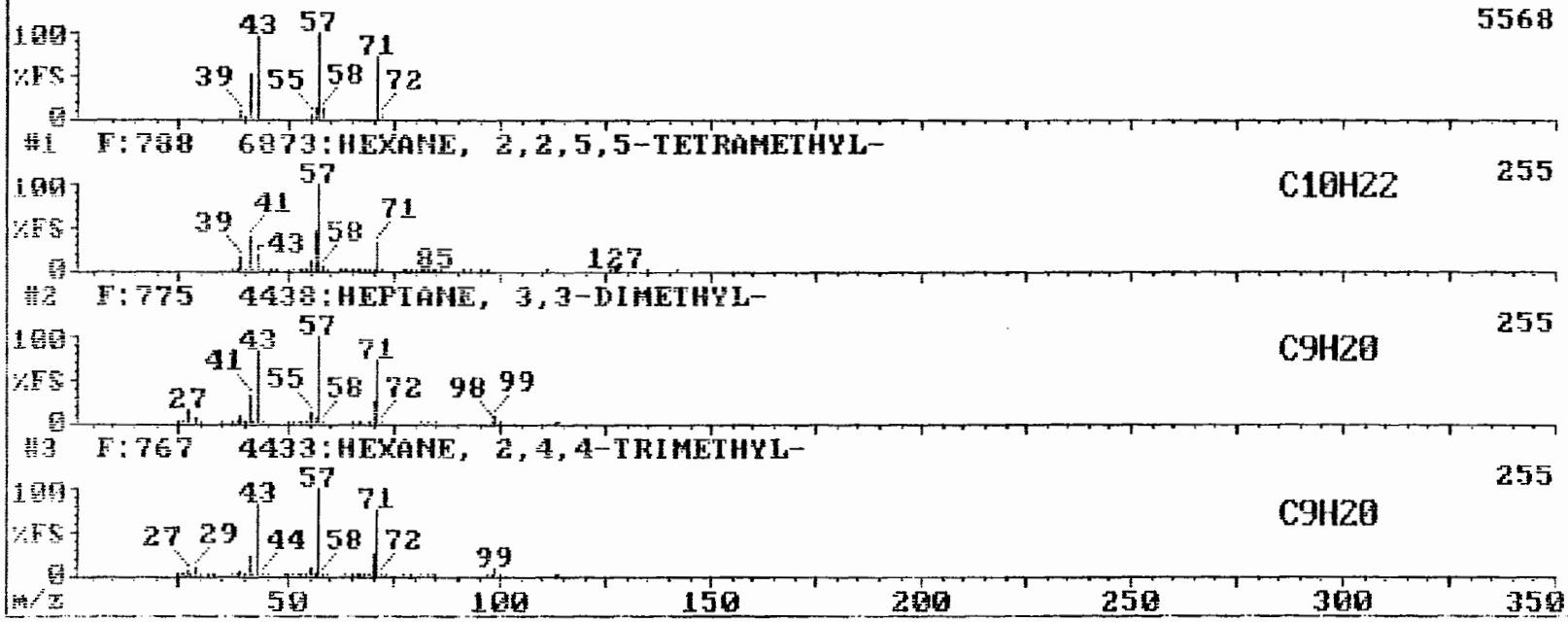
07/08/97 21:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST FB 2 TUBEA/B T/TC 173-46-14A/B TLI#42284 Instrument: H

HS349 242 (2.420) NBS 12224

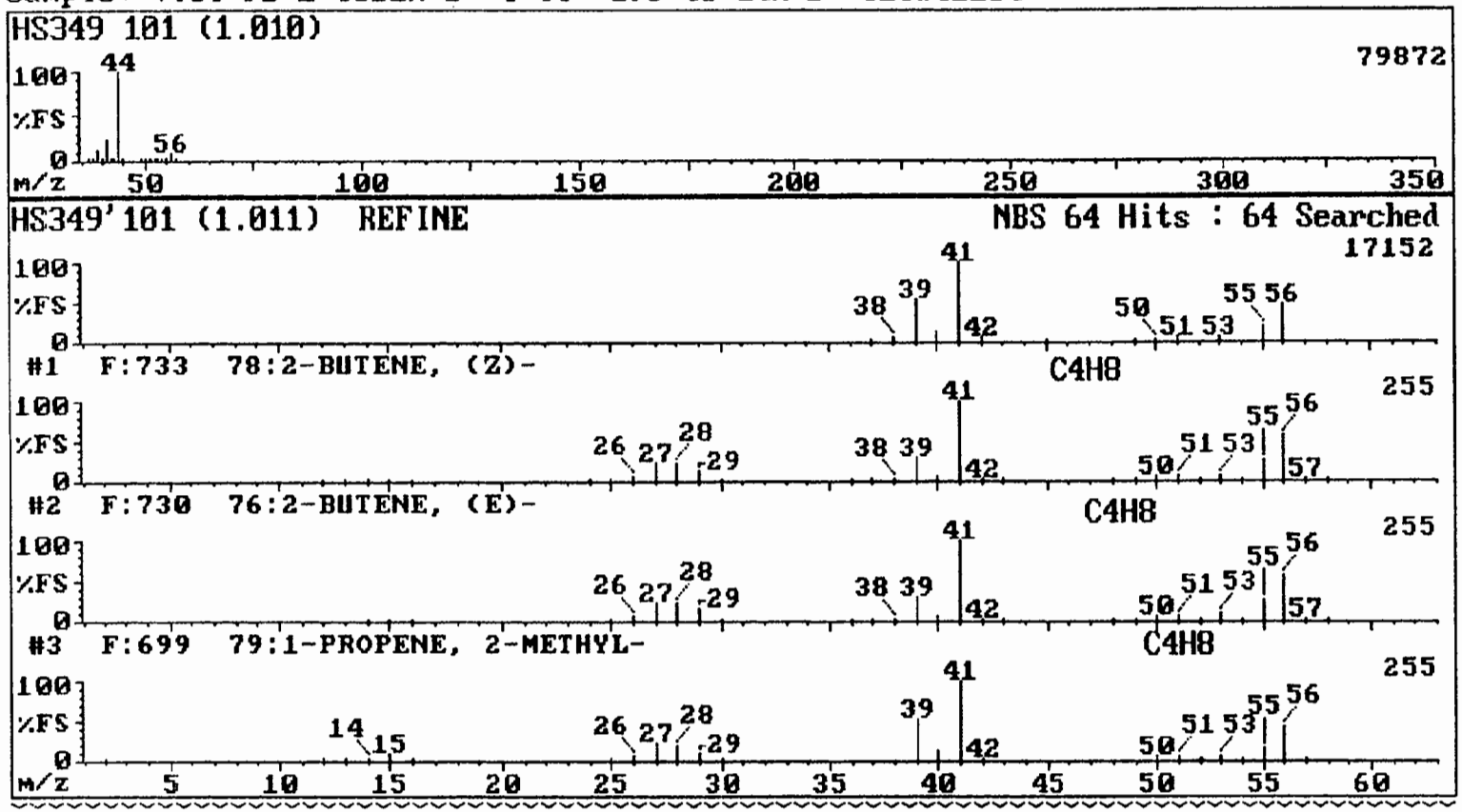


HS349'242 (2.421) REFINE NBS 84 Hits : 84 Searched 5568



08-Jul-97 21:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST FB 2 TUBEA/B T/TC 173-46-14A/B TLI#42284 Instrument H



Pacific Environmental Services

Project Number: 42284
Sample File: HS350

Method 8240A VOST
Sample ID: VOST FB 3 TUBEA/B T/TC

Client Project: S407-003
TLI ID: 173-46-15A,B

Date Received: 06/30/97
Date Analyzed : 07/08/97

Response File: ICALH708

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
Bromochloromethane		IS 1	4.51		
Chloromethane	0.002	J	0.94		0.05
Vinyl Chloride		U		0.001	0.05
1,3-Butadiene		U		0.001	0.05
Bromomethane		U		0.001	0.05
Chloroethane		U		0.001	0.05
Vinyl bromide		U		0.001	0.05
Trichlorofluoromethane		U		0.001	0.05
1,1-Dichloroethene		U		0.001	0.05
Iodomethane		U		0.001	0.05
Carbon disulfide		U		0.001	0.05
Acetone	0.037	BJ	2.58		0.05
Allyl chloride		U		0.001	0.05
Methylene chloride	0.044	BJ	2.98		0.05
trans-1,2-Dichloroethene		U		0.001	0.05
tert-Butyl methyl ether		U		0.001	0.05
Acrylonitrile		U		0.003	0.05
n-Hexane	0.013	J	3.57		0.05
1,1-Dichloroethane		U		0.001	0.05
1,2-Epoxybutane		U		0.003	0.05
cis-1,2-Dichloroethene		U		0.001	0.05
Chloroform		U		0.001	0.05
1,2-Dichloroethane		U		0.001	0.05
Isooctane		U		0.001	0.05
1,4-Difluorobenzene		IS 2	5.66		
Vinyl acetate		U		0.001	0.05

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

Pacific Environmental Services

Project Number: 42284 | **Method 8240A VOST**
Sample File: HS350 | **Sample ID: VOST FB 3 TUBEA/B T/TC**

Client Project: S407-003 | **Date Received: 06/30/97** | **Response File: ICALH708**
TLI ID: 173-46-15A,B
Date Analyzed : 07/08/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
2-Butanone		U		0.006	0.05
1,1,1-Trichloroethane		U		0.001	0.05
Carbon tetrachloride		U		0.001	0.05
Benzene	0.050	B	5.14		0.05
Trichloroethene		U		0.001	0.05
1,2-Dichloropropane		U		0.001	0.05
Ethyl acrylate		U		0.001	0.05
Methyl methacrylate		U		0.001	0.05
Bromodichloromethane		U		0.001	0.05
cis-1,3-Dichloropropene		U		0.001	0.05
trans-1,3-Dichloropropene		U		0.001	0.05
1,1,2-Trichloroethane		U		0.001	0.05
Dibromochloromethane		U		0.001	0.05
Ethylene dibromide		U		0.001	0.05
Bromoform		U		0.001	0.05
Chlorobenzene-d_5		IS 3	9.79		
4-Methyl-2-pentanone		U		0.001	0.05
Toluene	0.011	BJ	7.61		0.05
Tetrachloroethene		U		0.001	0.05
2-Hexanone		U		0.001	0.05
Chlorobenzene		U		0.001	0.05
Ethylbenzene		U		0.001	0.05
m-/p-Xylene		U		0.001	0.10
o-Xylene		U		0.001	0.05
Styrene		U		0.001	0.05
1,1,2,2-Tetrachloroethane		U		0.001	0.05

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

Triangle Laboratories of RTP, Inc.
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Savar v3.5
Printed: 22:48 07/25/1997

Pacific Environmental Services

Project Number: 42284 | **Method 8240A VOST**
Sample File: HS350 | **Sample ID: VOST FB 3 TUBEA/B T/TC**

Client Project: S407-003 | **Date Received: 06/30/97** | **Response File: ICALH708**
TLI ID: 173-46-15A,B
Date Analyzed : 07/08/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
Cumene		U		0.001	0.05

Surrogate Summary	Amount (ug)	RT	IS Ref	%REC
1,2-Dichloroethane-d_4	0.291	5.11	1	116
Benzene-d_6	0.288	5.09	2	115
Toluene-d_8	0.285	7.51	3	114

Reviewed by TW Date 7/28/97

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

Triangle Laboratories of RTP, Inc.
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Savar v3.5
Printed: 22:48 07/25/1997

Pacific Environmental Services

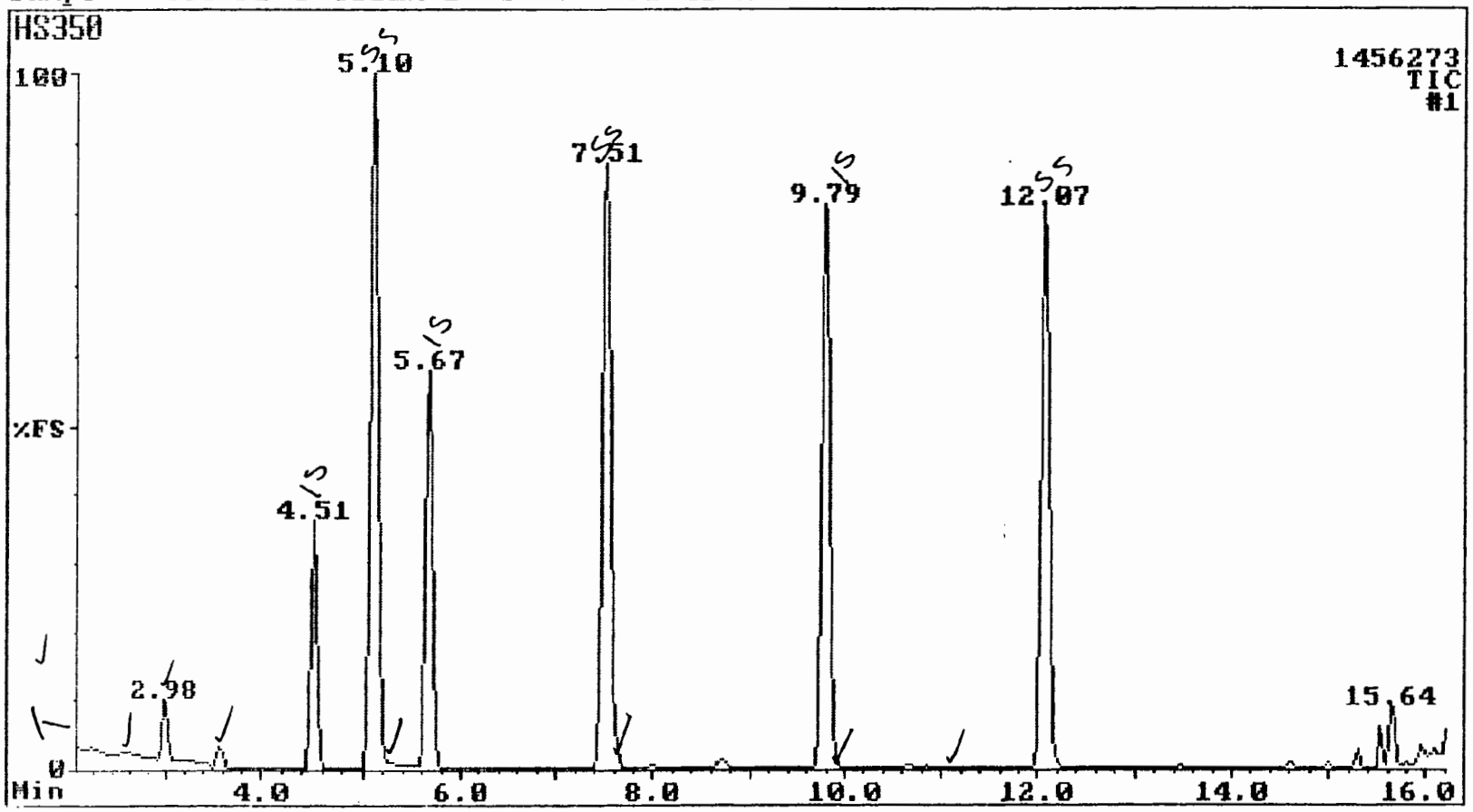
Project Number:	42284	Method 8240A	
Sample File:	HS350	Sample ID:	VOST FB 3 TUBEA/B T/TC

Client Project:	S407-003	Date Received:	06/30/97
TLI ID:	173-46-15A,B	Date Analyzed:	07/08/97
	Dilution Factor:	1.00	

Tentatively Identified Compounds

Name	RT	Area	IS RT	IS Area	Amount, ug
Methylbutane Isomer	1.640	1506290	4.511	3103360	0.121

07-08-97 21:29 Triangle Laboratories of RTP, Inc. (919) 544-5729
Sample: VOST FB 3 TUBEA/B T/TC 173-46-15A/B TLI#42284 Instrument H



Data Review: TLD
Date: 7-10-97

QUAN DB : HS350 LAB-BASE QUAN 07-08-97 21:55

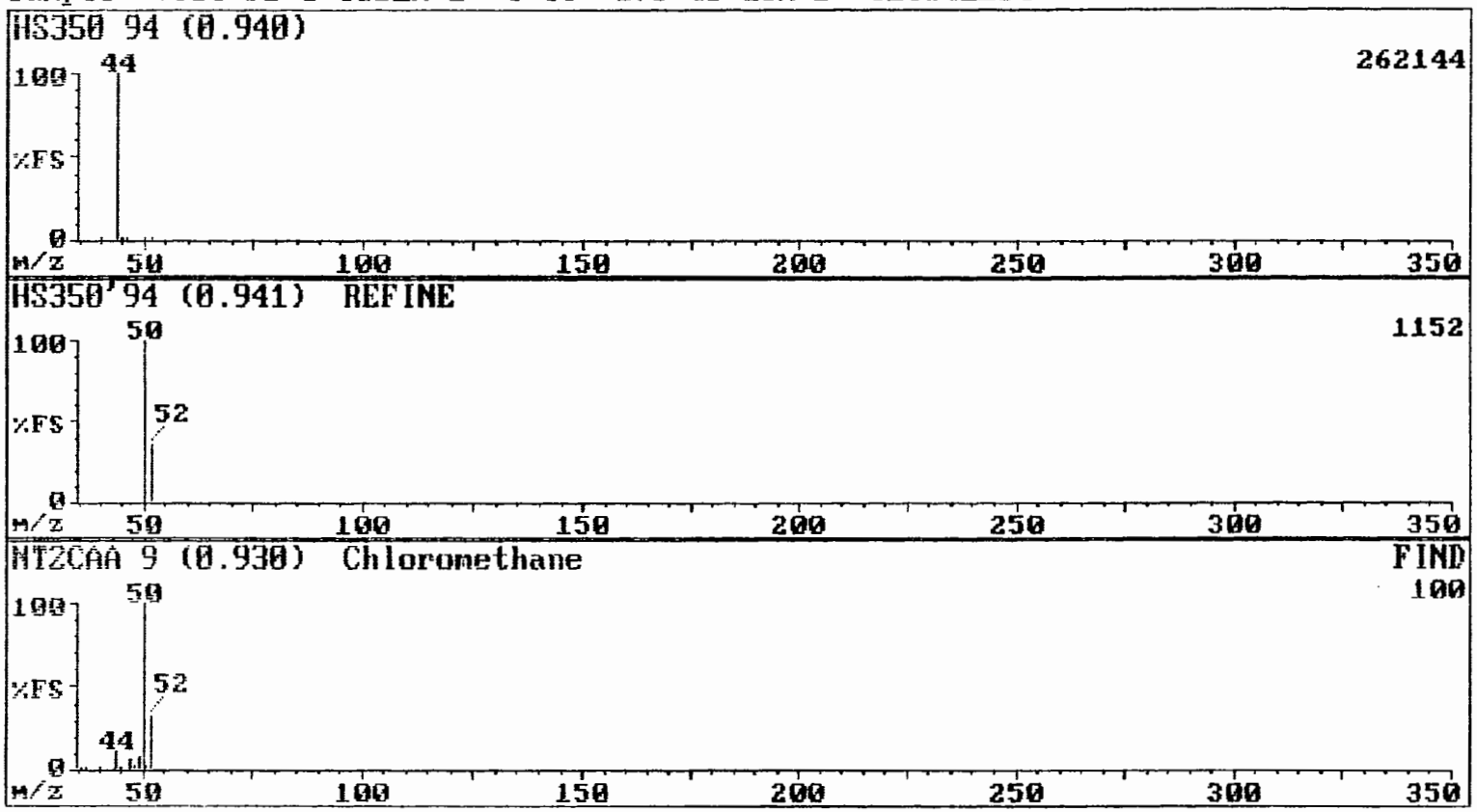
No.	MAT	FOR	REV	Delta	Area	P.Flags	RT	QM	Name
1	100	97	99	0	349600	bv	4.51	128	Bromochloromethane
2	100	95	97	0	2263016	bv	5.66	114	1,4-Difluorobenzene
3	100	97	98	-1	2783444	bv	9.79	117	Chlorobenzene-d5
4	74	36	84	1	1095100	bv	5.11	65	1,2-Dichloroethane-d4
5	100	83	85	0	3010816	bv	5.09	84	Benzene-d6
6	100	93	99	1	3601752	bv	7.51	98	Toluene-d8
7	0	0	0	0	0		0.00	98	o-Xylene-d10
8	100	88	93	1	1834692	bv	12.07	95	4-Bromofluorobenzene
9	14	11	11	1	6208	bv	0.94	50	Chloromethane
10	0	0	0	0	0		0.00	62	Vinyl Chloride
11	0	0	0	0	0		0.00	39	1,3-Butadiene
12	0	0	0	0	0		0.00	94	Bromomethane
13	0	0	0	0	0		0.00	64	Chloroethane
14	0	0	0	0	0		0.00	106	Vinyl bromide
15	0	0	0	0	0		0.00	101	Trichlorofluoromethane
16	0	0	0	0	0		0.00	96	1,1-Dichloroethene
17	0	0	0	0	0		0.00	142	Iodomethane
~~18~~	~~28~~	~~20~~	~~25~~	~~1~~	~~8180~~	~~bb~~	~~2.51~~	76	Carbon disulfide FP TW
19	46	37	38	1	67240	bv	2.58	43	Acetone
20	0	0	0	0	0		0.00	76	Allyl chloride
21	100	77	98	1	121704	bv	2.98	84	Methylene chloride
22	0	0	0	0	0		0.00	96	trans-1,2-Dichloroethene
23	0	0	0	0	0		0.00	73	tert-Butyl methyl ether
24	0	0	0	0	0		0.00	53	Acrylonitrile
25	100	96	97	0	83588	bb	3.57	57	n-Hexane
26	0	0	0	0	0		0.00	63	1,1-Dichloroethane
~~27~~	~~50~~	~~43~~	~~46~~	~~7~~	~~2972~~	~~A~~	~~4.12~~	42	1,2-Epoxybutane FP TW
28	0	0	0	0	0		0.00	96	cis-1,2-Dichloroethene
29	0	0	0	0	0		0.00	83	Chloroform
30	0	0	0	0	0		0.00	62	1,2-Dichloroethane
~~31~~	~~55~~	~~18~~	~~79~~	~~0~~	~~12464~~	~~A~~	~~5.29~~	57	Isooctane FP TW
~~32~~	~~34~~	~~32~~	~~62~~	~~27~~	~~72400~~	~~bv~~	~~3.57~~	43	Vinyl acetate
33	0	0	0	0	0		0.00	72	2-Butanone
34	0	0	0	0	0		0.00	97	1,1,1-Trichloroethane
35	0	0	0	0	0		0.00	117	Carbon tetrachloride
36	92	58	94	1	576595	bv	5.14	78	Benzene
37	0	0	0	0	0		0.00	130	Trichloroethene
38	0	0	0	0	0		0.00	63	1,2-Dichloropropane
39	0	0	0	0	0		0.00	55	Ethyl acrylate
40	0	0	0	0	0		0.00	69	Methyl methacrylate
41	0	0	0	0	0		0.00	83	Bromodichloromethane
42	0	0	0	0	0		0.00	75	cis-1,3-Dichloropropene
43	0	0	0	0	0		0.00	75	trans-1,3-Dichloropropen
44	0	0	0	0	0		0.00	97	1,1,2-Trichloroethane
45	0	0	0	0	0		0.00	129	Dibromochloromethane
46	0	0	0	0	0		0.00	107	Ethylene dibromide
47	0	0	0	0	0		0.00	173	Bromoform
~~48~~	~~48~~	~~1~~	~~82~~	~~3~~	~~25416~~	~~A~~	~~7.52~~	43	4-Methyl-2-pentanone FP TW
49	100	84	95	2	86876	bb	7.61	92	Toluene
50	0	0	0	0	0		0.00	164	Tetrachloroethene

Data Review: TW
Date: 7-16-97

No.	MAT	FOR	REV	Delta	Area	P.Flags	RT	QM	Name
51	0	0	0	0	0		0.00	43	2-Hexanone
52	38	10	54	~~-2~~	~~7364~~	~~bb~~	~~9.85~~	112	Chlorobenzene
~~53~~	~~28~~	~~55~~	~~55~~	~~24~~	~~3928~~	~~A~~	~~10.36~~	106	Ethylbenzene
~~54~~	~~63~~	~~52~~	~~52~~	~~0~~	~~3928~~	~~A~~	~~10.36~~	106	m-/p-Xylene
55	0	0	0	0	0		0.00	106	o-Xylene
56	76	60	67	1	12052	A	11.14	104	Styrene
57	0	0	0	0	0		0.00	83	1,1,2,2-Tetrachloroethan
~~58~~	~~46~~	~~24~~	~~50~~	~~1~~	~~1316~~	~~bb~~	~~11.83~~	105	Cumene

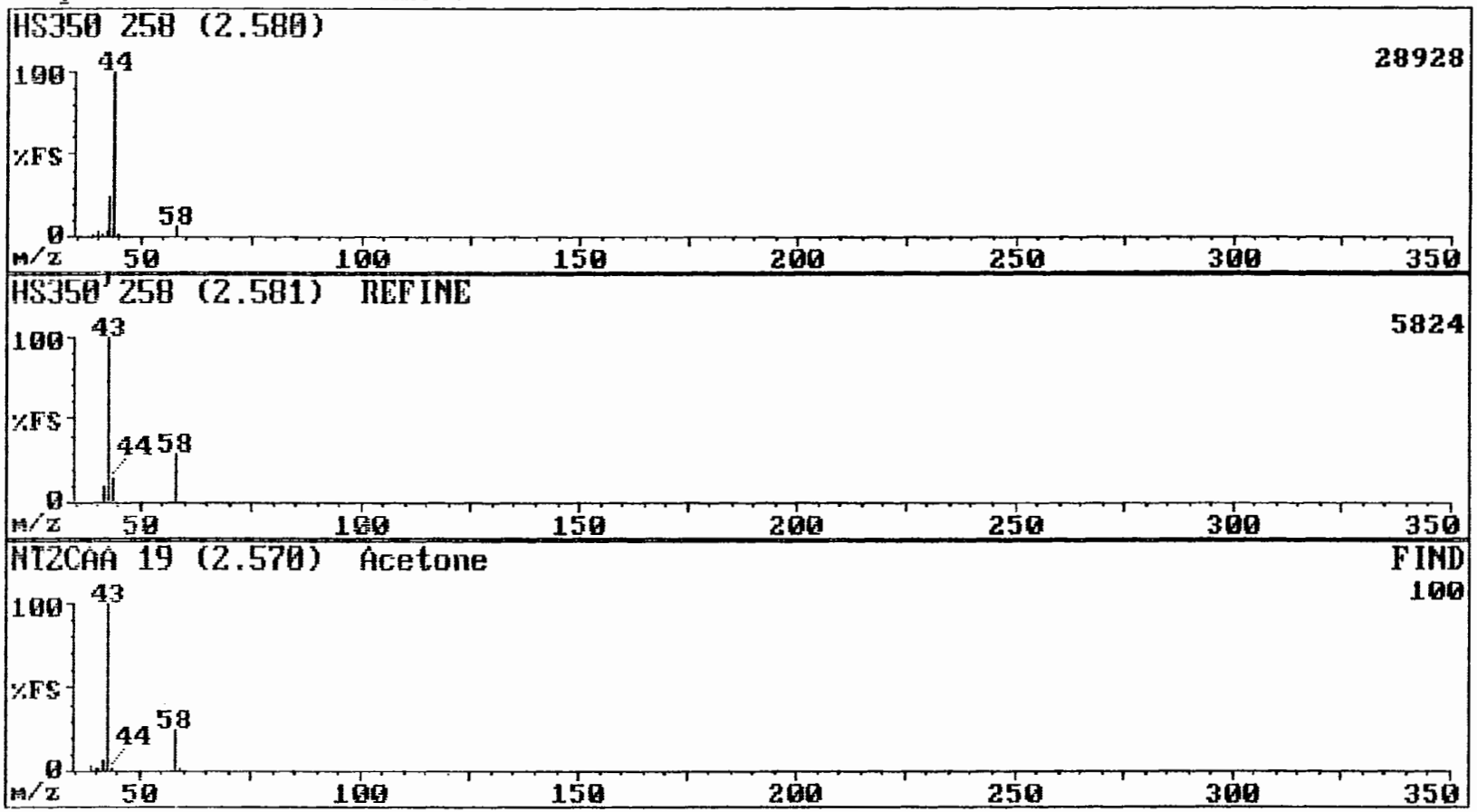
07-08-97 21:29 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST FB 3 TUBEA/B T/TC 173-46-15A/B TLI#42284 Instrument H



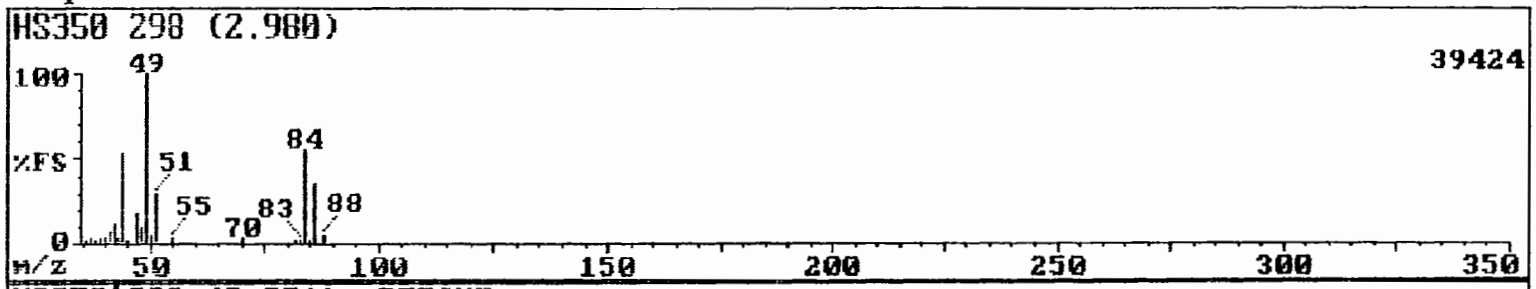
07-08-97 21:29 Triangle Laboratories of RTP, Inc. (919) 544-5729

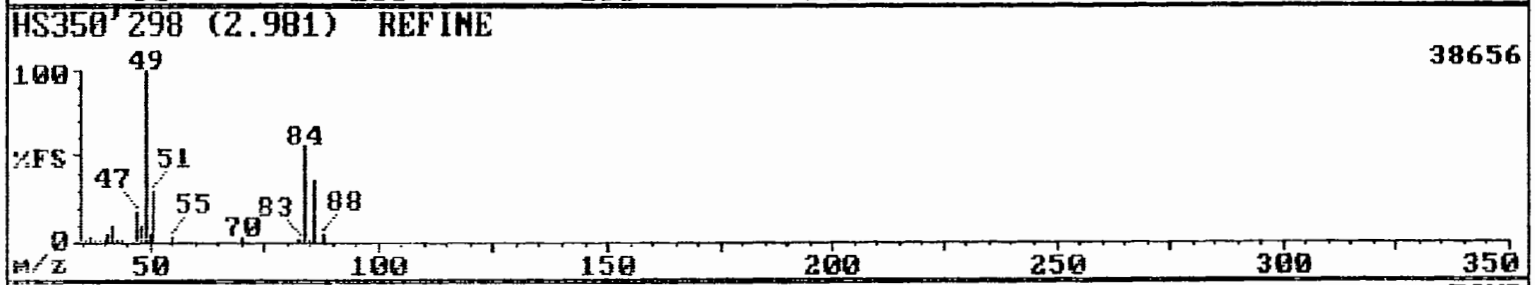
Sample: VOST FB 3 TUBEA/B T/TC 173-46-15A/B TLI#42284 Instrument H

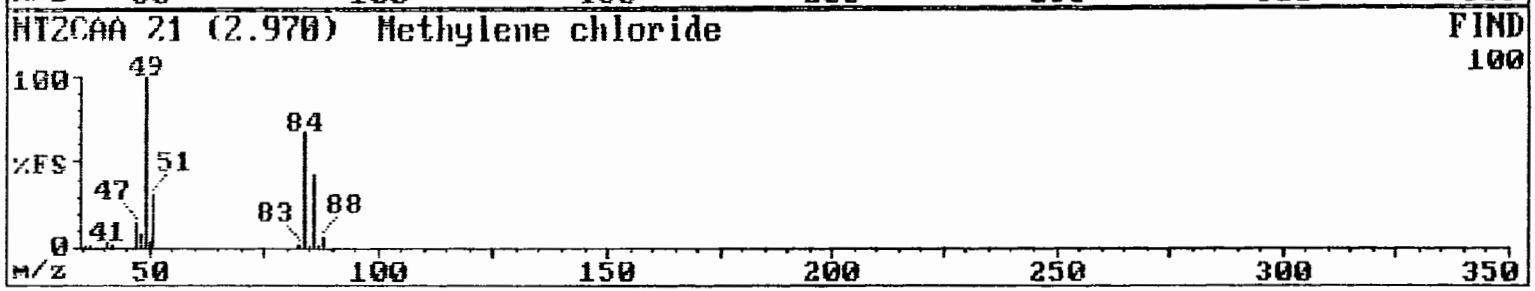


07-08-97 21:29 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST FB 3 TUBEA/B T/TC 173-46-15A/B TLI#42284 Instrument H

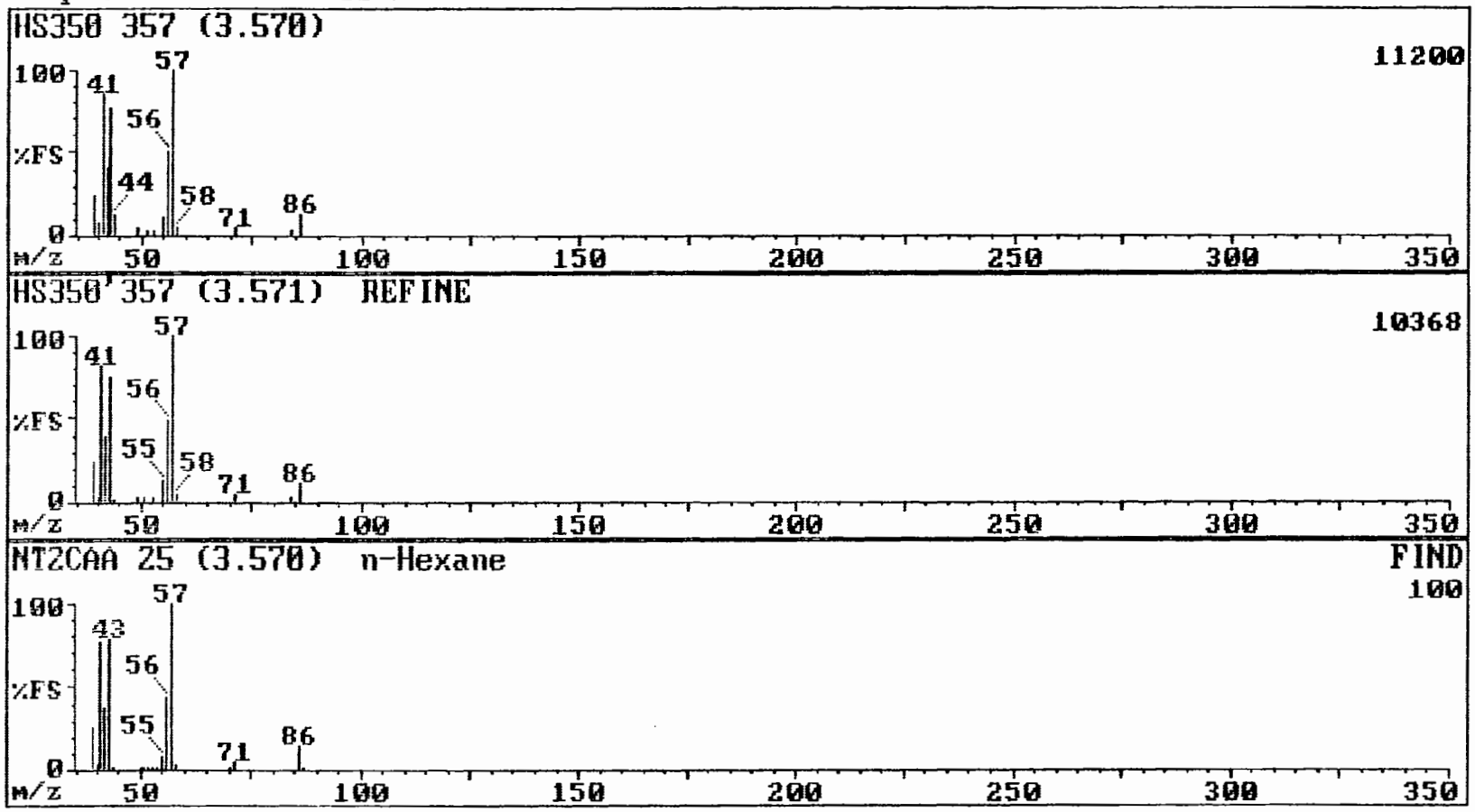






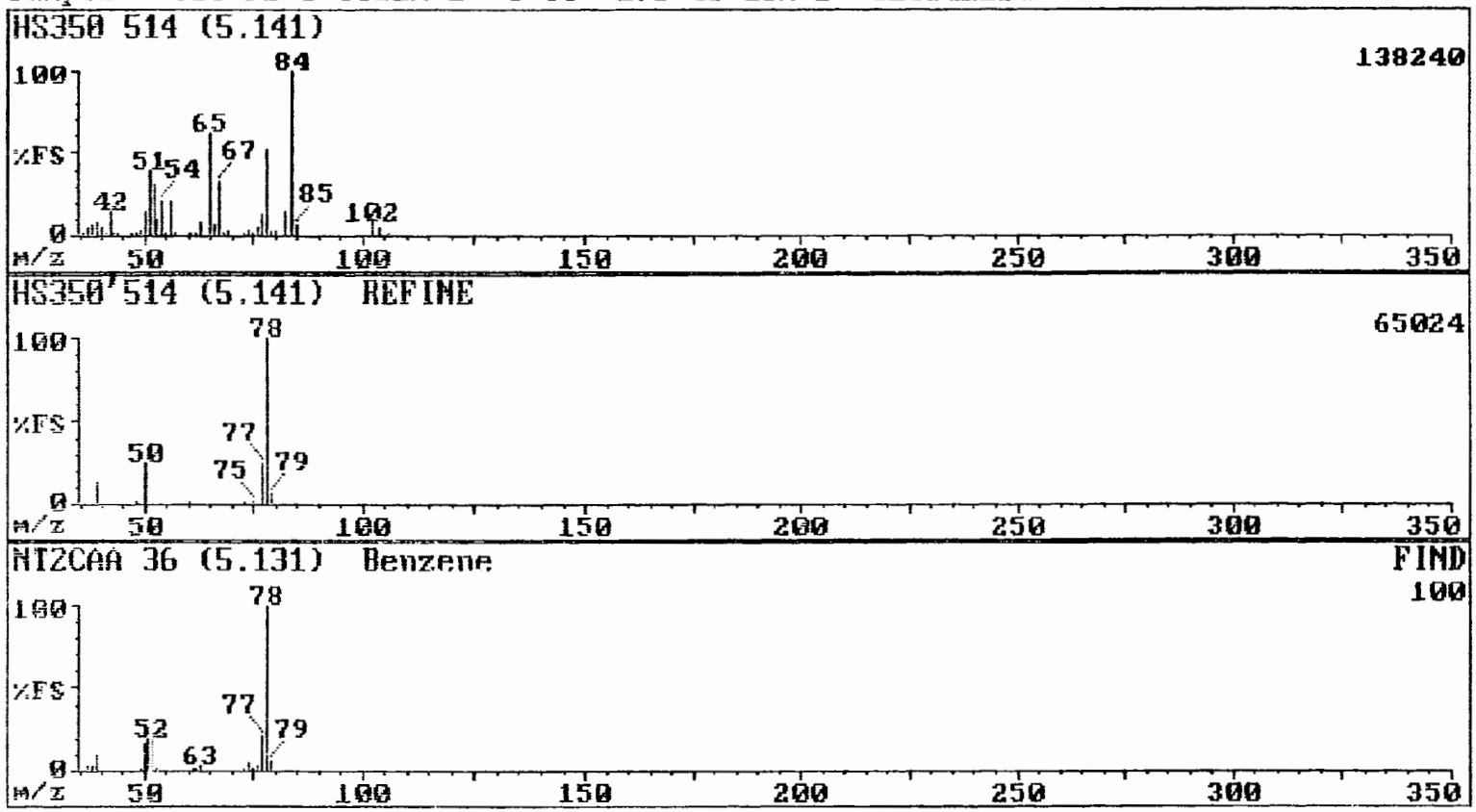
07-08-97 21:29 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST FB 3 TUBEA/B T/TC 173-46-15A/B TLI#42284 Instrument H



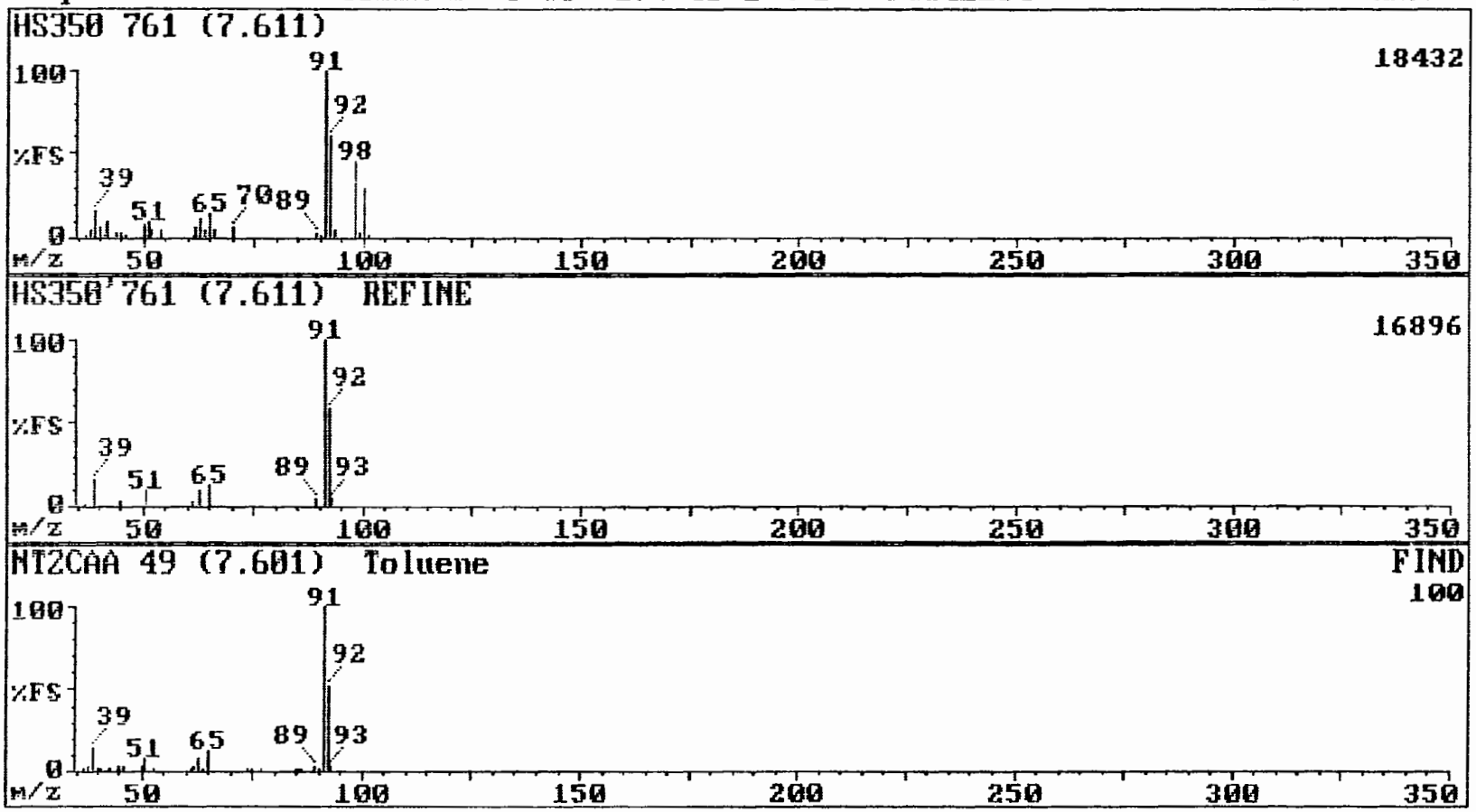
07-08-97 21:29 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST FB 3 TUBEA/B T/TC 173-46-15A/B TLI#42284 Instrument H



07-08-97 21:29 Triangle Laboratories of RTP, Inc. (919) 544-5729

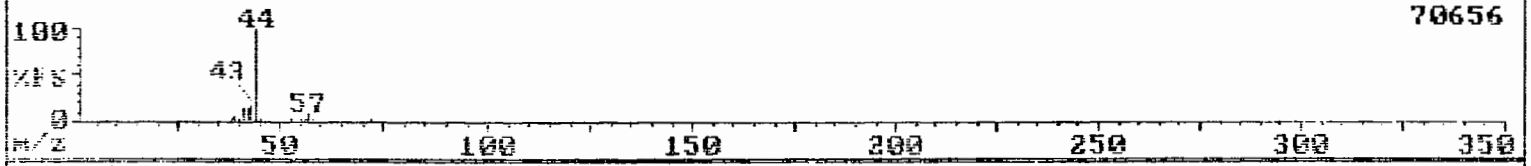
Sample: VOST FB 3 TUBEA/B T/TC 173-46-15A/B TLI#42284 Instrument H



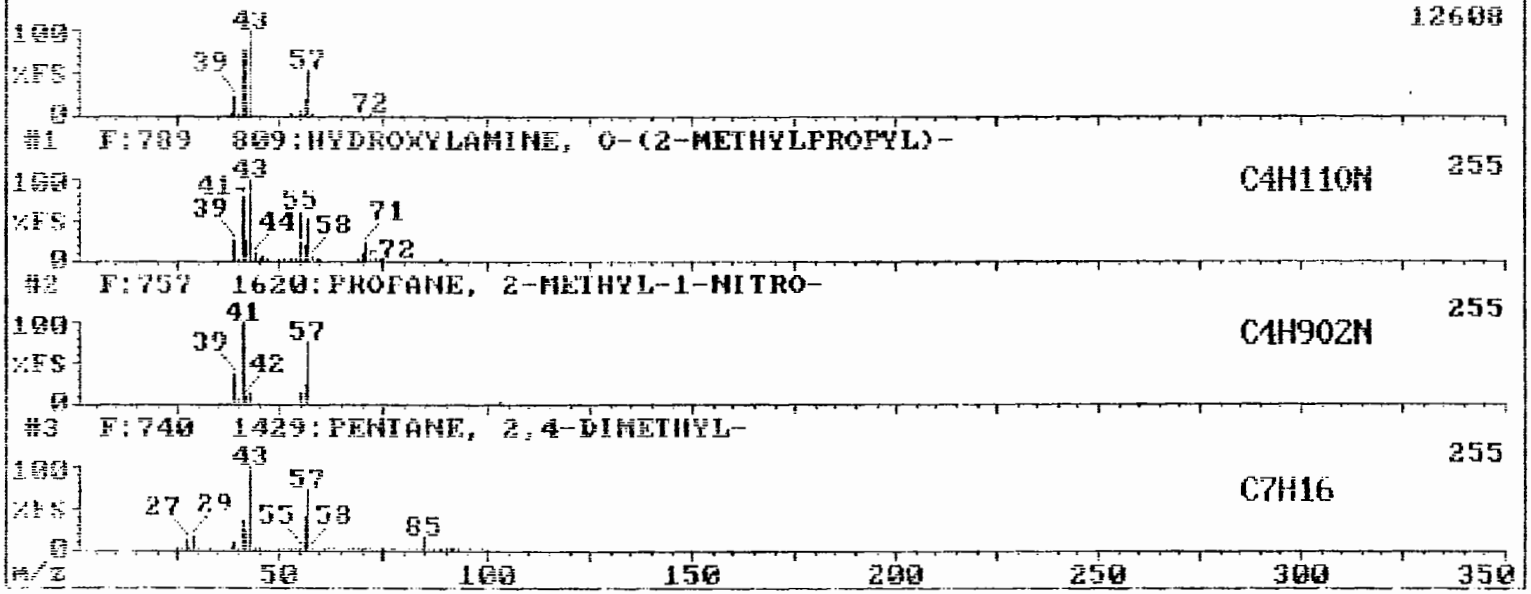
07/08/97 21:29 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST FB 3 TUBEA/B T/TC 173-46-15A/B TLI#42284 Instrument: H

HS350 164 (1.640) NBS 70656



HS350'164 (1.641) REFINE NBS 242 Hits : 242 Searched 12608



Pacific Environmental Services

Project Number: 42284 | **Method 8240A VOST**
Sample File: HS372 | **Sample ID: VOST-4 SET 1 TUBEA/B T/TC**

Client Project: S407-003 | **Date Received: 06/30/97** | **Response File: ICALH708**
TLI ID: 173-46-16A,B
Date Analyzed : 07/09/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
Bromochloromethane		IS 1	4.48		
Chloromethane	0.250		0.92		0.05
Vinyl Chloride		U		0.001	0.05
1,3-Butadiene	0.324		1.08		0.05
Bromomethane	0.032	J	1.41		0.05
Chloroethane	0.070		1.53		0.05
Vinyl bromide		U		0.001	0.05
Trichlorofluoromethane	0.030	J	1.82		0.05
1,1-Dichloroethene		U		0.001	0.05
Iodomethane		U		0.001	0.05
Carbon disulfide	0.419		2.48		0.05
Acetone	0.050	B	2.56		0.05
Allyl chloride		U		0.001	0.05
Methylene chloride	0.356	B	2.95		0.05
trans-1,2-Dichloroethene		U		0.001	0.05
tert-Butyl methyl ether		U		0.001	0.05
Acrylonitrile	1.732	E	3.24		0.05
n-Hexane	0.333		3.54		0.05
1,1-Dichloroethane		U		0.001	0.05
1,2-Epoxybutane		U		0.003	0.05
cis-1,2-Dichloroethene		U		0.001	0.05
Chloroform		U		0.001	0.05
1,2-Dichloroethane		U		0.001	0.05
Isooctane	0.006	J	5.27		0.05
1,4-Difluorobenzene		IS 2	5.63		
Vinyl acetate		U		0.001	0.05

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

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Printed: 15:03 07/22/1997

Pacific Environmental Services

Project Number: 42284 | **Method 8240A VOST**
Sample File: HS372 | **Sample ID: VOST-4 SET 1 TUBEA/B T/TC**

Client Project: S407-003 | **Date Received: 06/30/97** | **Response File: ICALH708**
TLI ID: 173-46-16A,B
Date Analyzed : 07/09/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
2-Butanone	0.025	J	4.36		0.05
1,1,1-Trichloroethane		U		0.001	0.05
Carbon tetrachloride		U		0.001	0.05
Benzene	0.890	B	5.10		0.05
Trichloroethene	0.001	J	5.87		0.05
1,2-Dichloropropane		U		0.001	0.05
Ethyl acrylate		U		0.001	0.05
Methyl methacrylate	0.137		6.45		0.05
Bromodichloromethane		U		0.001	0.05
cis-1,3-Dichloropropene		U		0.001	0.05
trans-1,3-Dichloropropene		U		0.001	0.05
1,1,2-Trichloroethane		U		0.001	0.05
Dibromochloromethane		U		0.001	0.05
Ethylene dibromide		U		0.001	0.05
Bromoform		U		0.001	0.05
Chlorobenzene-d_5		IS 3	9.74		
4-Methyl-2-pentanone		U		0.001	0.05
Toluene	0.433	B	7.56		0.05
Tetrachloroethene		U		0.001	0.05
2-Hexanone		U		0.001	0.05
Chlorobenzene	0.006	J	9.78		0.05
Ethylbenzene	0.058		10.07		0.05
m-/p-Xylene	0.154		10.30		0.10
o-Xylene	0.062		11.01		0.05
Styrene	0.166		11.06		0.05
1,1,2,2-Tetrachloroethane		U		0.001	0.05

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

Pacific Environmental Services

Project Number: 42284 | **Method 8240A VOST**
Sample File: HS372 | **Sample ID: VOST-4 SET 1 TUBEA/B T/TC**

Client Project: S407-003 | **Date Received: 06/30/97** | **Response File: ICALH708**
TLI ID: 173-46-16A,B
Date Analyzed : 07/09/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
Cumene	0.004	J	11.78		0.05

Surrogate Summary	Amount (ug)	RT	IS Ref	%REC
1,2-Dichloroethane-d_4	0.217	5.08	1	87
Benzene-d_6	0.250	5.06	2	100
Toluene-d_8	0.288	7.47	3	115

Reviewed by TW Date 7/22/97

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

Triangle Laboratories of RTP, Inc.
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Printed: 15:03 07/22/1997

Pacific Environmental Services

Project Number: 42284 Method 8240A

Sample File: HS372 Sample ID: VOST-4 SET 1 TUBEA/B T/TC

Client Project:	S407-003	Date Received:	06/30/97
TLI ID:	173-46-16A,B	Date Analyzed:	07/09/97
	Dilution Factor:	1.00	

Tentatively Identified Compounds

Name	RT	Area	IS RT	IS Area	Amount, ug
C6H12 Isomer	3.450	20174306	4.491	10315775	0.489
C4H8 Isomer	1.010	19642262	4.491	10315775	0.476
C8H16 Isomer	7.791	14853554	9.741	10783097	0.344
C9H18 Isomer	10.471	11000834	9.741	10783097	0.255
C5H10 Isomer	1.870	8517349	4.491	10315775	0.206
Methylbutane Isomer	1.620	7229730	4.491	10315775	0.175
C7H14 Isomer	5.421	6690068	4.491	10315775	0.162
Octane	7.931	6857868	9.741	10783097	0.159
C5H8 Isomer	2.180	5759000	4.491	10315775	0.140
Hexamethylcyclotrisiloxane	8.661	3942456	9.741	10783097	0.091

Triangle Laboratories, Inc.
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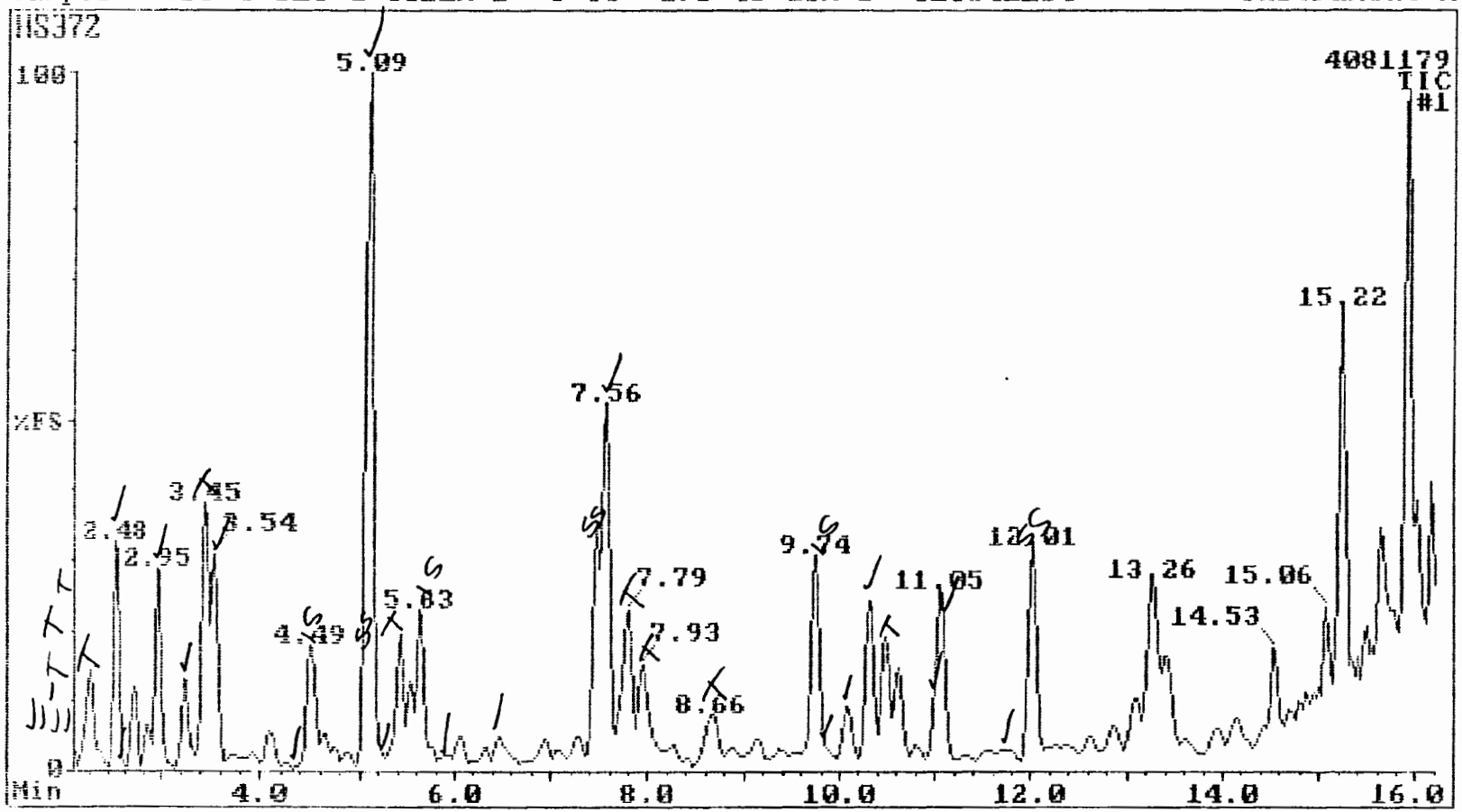
Printed: 11:59 07/25/97

07-09-97 16:20 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 1 TUBEA/B T/TC 173-46-16A/B TL1#42284 Instrument H



Data Review: TW
Date: 7-22-97

JAN 28 . H3372 LAB-BASE QUAN 07-09-97 11:41

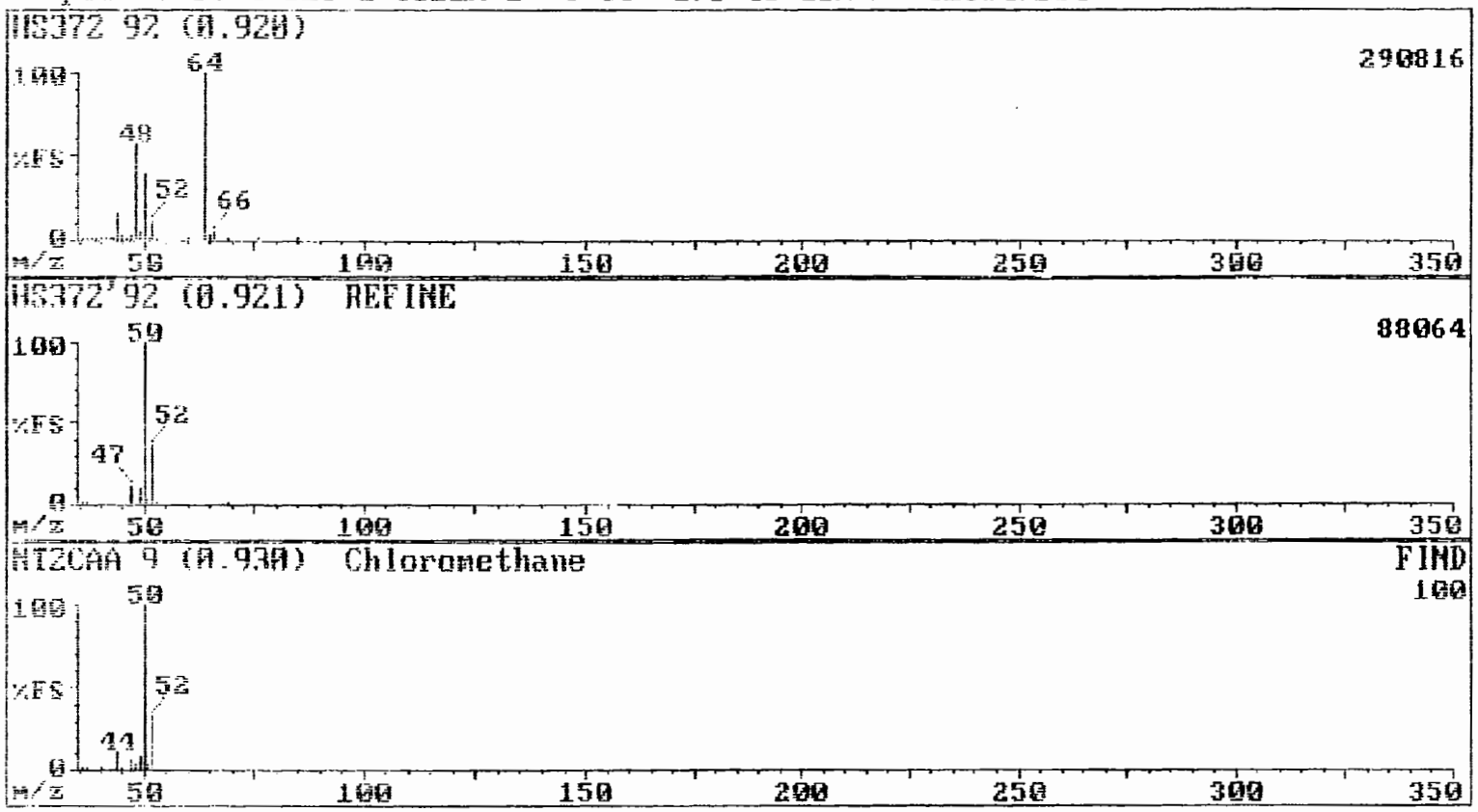
No.	MAT	FOR	REV	Delta	Area	S.Flags	RT		QM	Name
1	100	82	98	-3	382216	bb	4.48		128	Bromochloromethane
2	100	90	97	1	2237296	bb	5.63		114	1,4-Difluorobenzene
3	100	95	98	-1	2844808	bv	9.74		117	Chlorobenzene-d5
4	53	19	66	1	892312	bv	5.08		65	1,2-Dichloroethane-d4
5	100	83	84	0	2588068	bb	5.06		84	Benzene-d6
6	100	88	99	1	3724986	bv	7.47		98	Toluene-d8
~~7~~	~~39~~	~~16~~	~~37~~	~~-15~~	~~21482~~	~~A~~	~~12.62~~		~~98~~	o-Xylene-d10 FP TW
8	100	86	94	1	1842663	vv	12.01		95	4-Bromofluorobenzene
9	83	64	68	0	802264	bv	0.92		50	Chloromethane
~~10~~	~~17~~	~~16~~	~~20~~	~~-16~~	~~356~~	~~bb~~	~~0.89~~		62	Vinyl Chloride FP TW
11	100	83	100	0	1306032	vv	1.08		39	1,3-Butadiene
12	98	60	96	0	106260	bv	1.41		94	Bromomethane
13	49	27	51	0	~~497206~~ ~~A~~	149967	~~1.66~~	1.53	64	Chloroethane mi TW
14	0	0	0	0	0		0.00		106	Vinyl bromide
15	68	30	83	-1	133992	bb	1.82		101	Trichlorofluoromethane
16	0	0	0	0	0		0.00		96	1,1-Dichloroethene
17	0	0	0	0	0		0.00		142	Iodomethane
18	100	79	99	0	4044844	bv	2.48		76	Carbon disulfide
19	82	54	82	1	99201	bv	2.56		43	Acetone
~~20~~	~~34~~	~~42~~	~~61~~	~~0~~	~~9676~~	~~bb~~	~~2.81~~		76	Allyl chloride FP TW
21	100	77	93	0	1072416	vb	2.95		84	Methylene chloride
22	0	0	0	0	0		0.00		96	trans-1,2-Dichloroethene
~~23~~	~~53~~	~~39~~	~~47~~	~~2~~	~~6604~~	~~A~~	~~3.31~~		73	tert-Butyl methyl eth FP TW
24	100	80	94	-1	1140968	bv	3.24		53	Acrylonitrile
25	100	98	100	-1	2383496	vv	3.54		57	n-Hexane
26	0	0	0	0	0		0.00		63	1,1-Dichloroethane
~~27~~	~~55~~	~~44~~	~~55~~	~~7~~	~~126276~~	~~bv~~	~~4.09~~		42	1,2-Epoxybutane FP TW
28	0	0	0	0	0		0.00		96	cis-1,2-Dichloroethene
29	0	0	0	0	0		0.00		83	Chloroform
30	0	0	0	0	0		0.00		62	1,2-Dichloroethane
31	77	48	77	1	143781	A	5.27		57	Isooctane
~~32~~	~~32~~	~~30~~	~~62~~	~~-28~~	~~2574461~~	~~bv~~	~~3.54~~		43	Vinyl acetate FP TW
33	68	43	65	0	9012	A	4.36		72	2-Butanone
34	0	0	0	0	0		0.00		97	1,1,1-Trichloroethane
35	0	0	0	0	0		0.00		117	Carbon tetrachloride
36	100	92	100	0	10096540	bv	5.10		78	Benzene
37	34	10	46	0	6352	bb	5.87		130	Trichloroethene
~~38~~	~~40~~	~~16~~	~~50~~	~~-2~~	~~7436~~	~~A~~	~~6.09~~		~~63~~	1,2-Dichloropropane FP TW
~~39~~	~~39~~	~~29~~	~~62~~	~~-13~~	~~260480~~	~~vb~~	~~6.65~~		~~55~~	Ethyl acrylate FP TW
40	100	91	98	-1	296686	vb	6.45		69	Methyl methacrylate
41	0	0	0	0	0		0.00		83	Bromodichloromethane
42	0	0	0	0	0		0.00		75	cis-1,3-Dichloropropene
43	0	0	0	0	0		0.00		75	trans-1,3-Dichloropropen
44	0	0	0	0	0		0.00		97	1,1,2-Trichloroethane
45	0	0	0	0	0		0.00		129	Dibromochloromethane
46	0	0	0	0	0		0.00		107	Ethylene dibromide
47	0	0	0	0	0		0.00		173	Bromoform
~~48~~	~~38~~	~~28~~	~~77~~	~~-18~~	~~151999~~	~~vv~~	~~7.27~~		~~43~~	4-Methyl-2-pentanone FP TW
49	100	94	99	1	3644960	bv	7.56		92	Toluene
50	0	0	0	0	0		0.00		164	Tetrachloroethene

Data Review: TW
Date: 7-22 97

No.	MAT	FOR	REV	Delta	Area	P.Flags	RT	QM	Name
~~51~~	~~52~~	~~11~~	~~53~~	~~0~~	~~35123~~	~~A~~	~~8.69~~	43	2-Hexanone FP TW
52	53	19	68	0	68088	bv	9.78	112	Chlorobenzene
53	100	83	97	0	337950	bv	10.07	106	Ethylbenzene
54	100	84	93	-1	1114592	vv	10.30	106	m-/p-Xylene
55	100	80	87	1	429028	bv	11.01	106	o-Xylene
56	100	88	96	1	1905664	bv	11.06	104	Styrene
~~57~~	~~16~~	~~6~~	~~48~~	~~-22~~	~~15344~~	~~A~~	~~12.24~~	83	1,1,2,2-Tetrachloro FP TW
58	58	28	64	0	89239	vv	11.78	105	Cumene

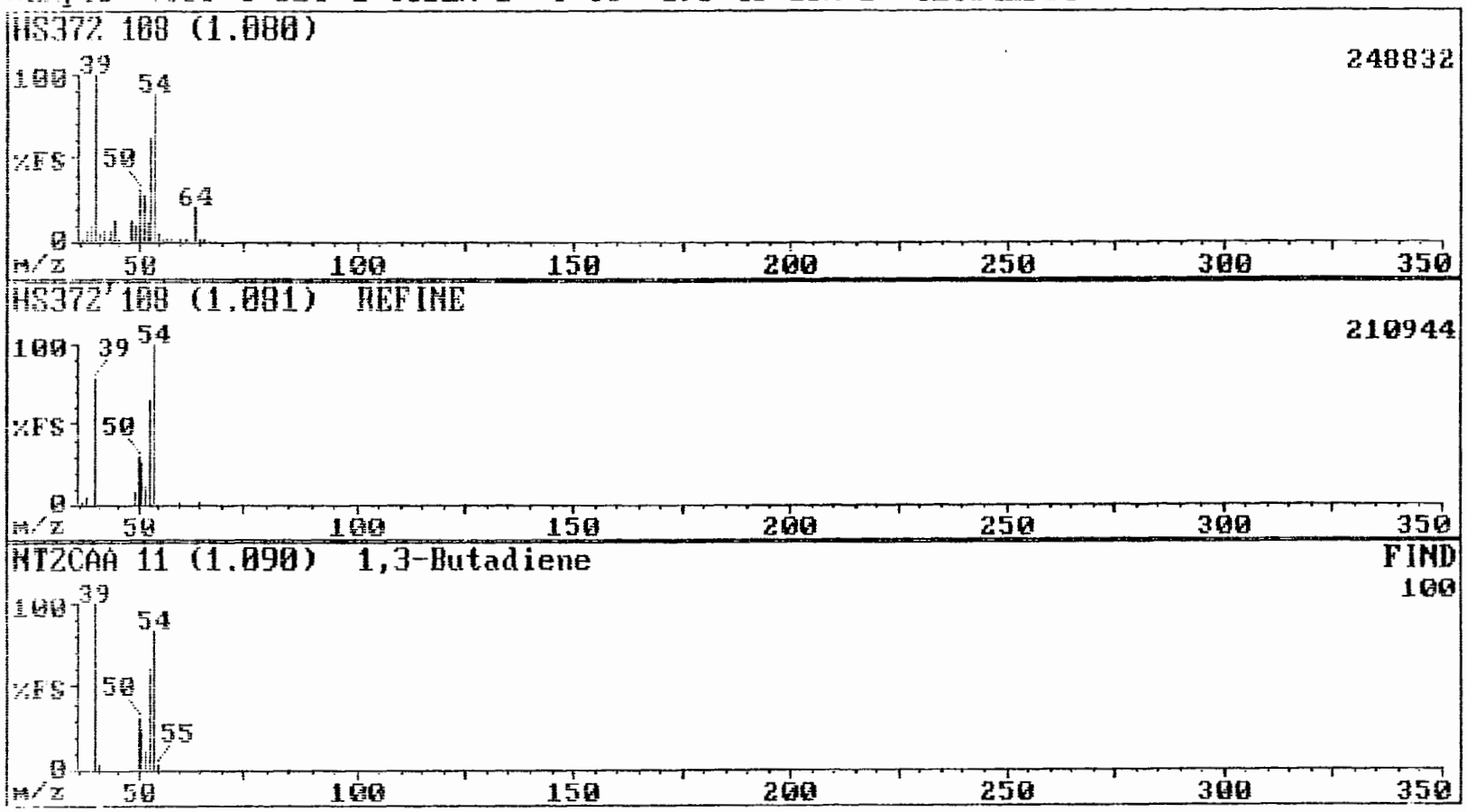
07 09-97 16:20 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 1 TUBEA/B T/TC 173-46-16A/B TLI#42284 Instrument H



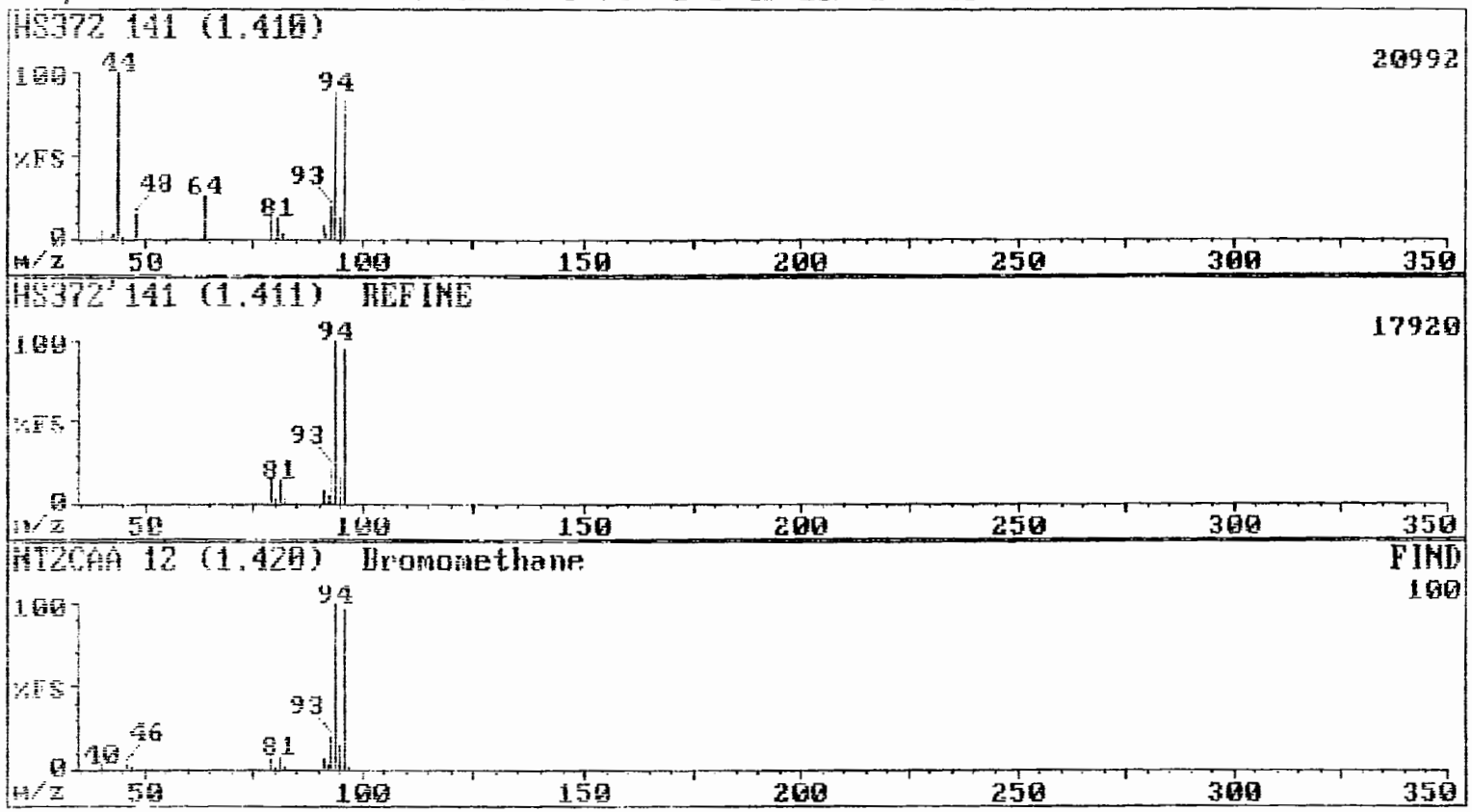
07-09-97 16:20 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 1 TUBEA/B T/TC 173-46-16A/B TLI#42284 Instrument H



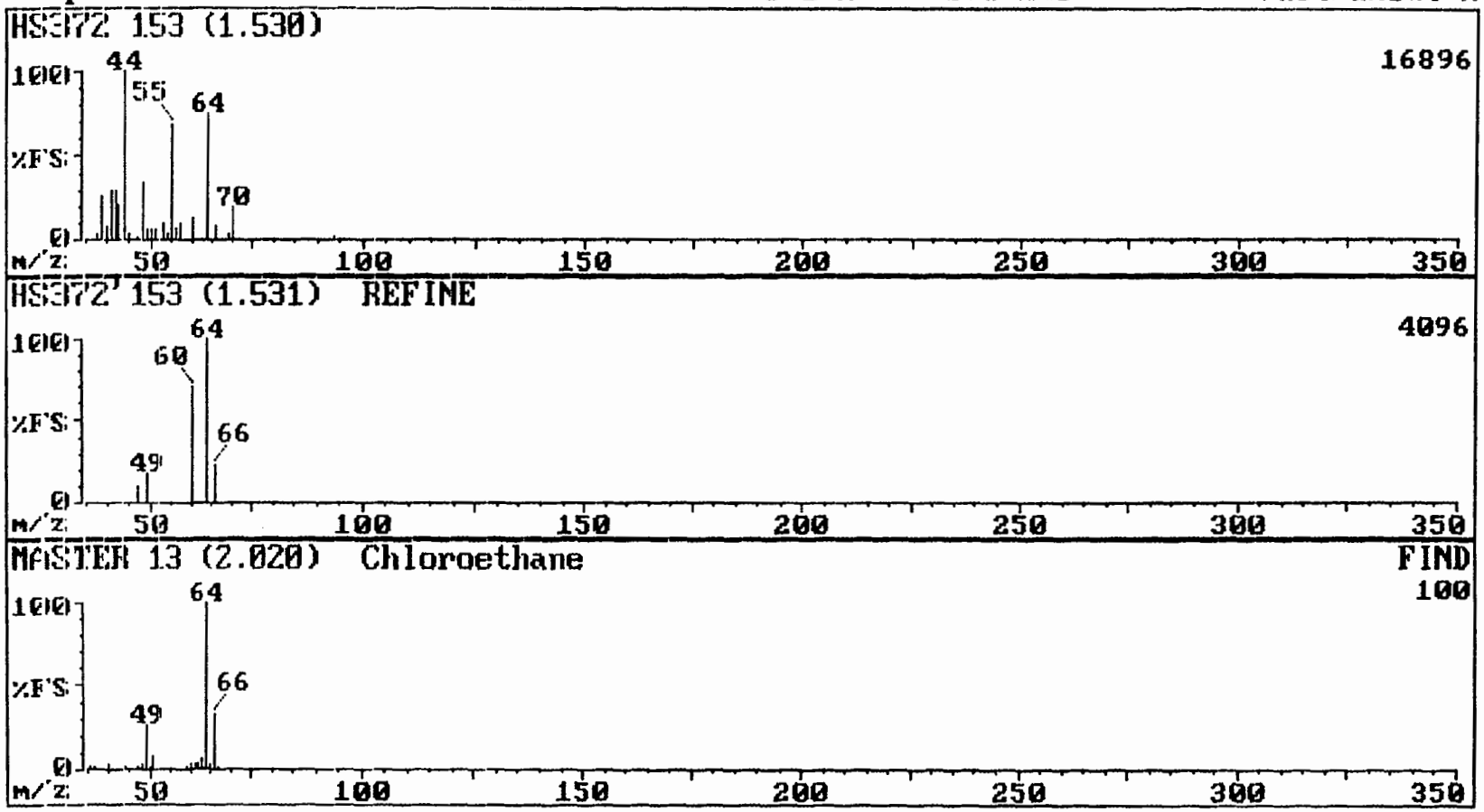
07-09-97 16:20 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 1 TUBEA/B T/TC 173-46-16A/B TLI#42284 Instrument H



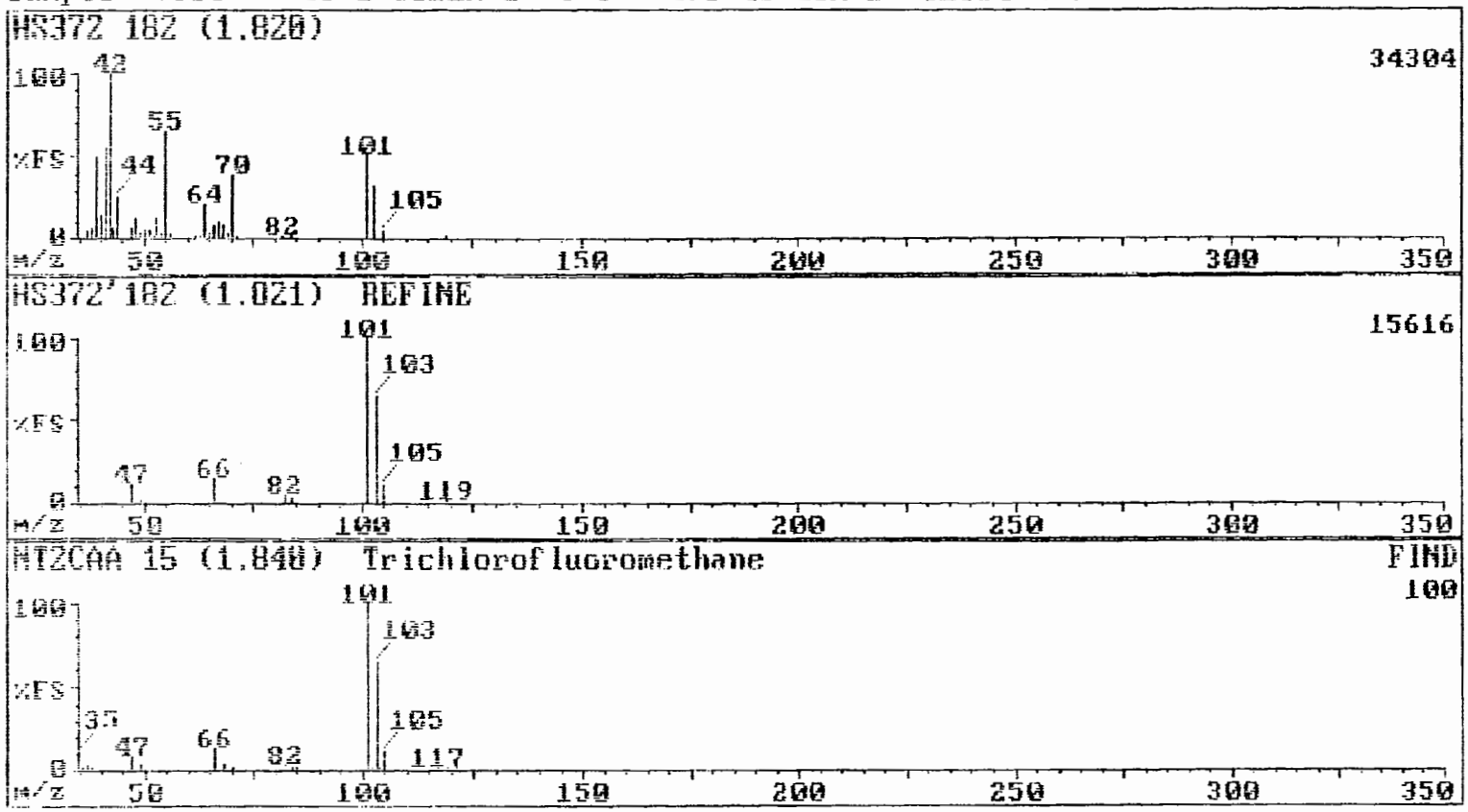
09-Jul-97 16:20 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 1 TUBEA/B T/TC 173-46-16A/B TLI#42284 Instrument H



07-09-97 16:20 Triangle Laboratories of RTP, Inc. (919) 544-5729

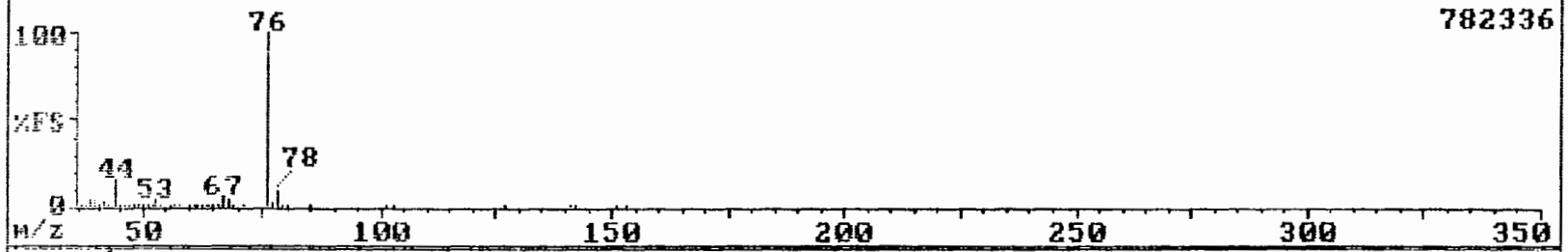
Sample: VOST-4 SET 1 TUBEA/B T/TC 173-46-16A/B TLI#42284 Instrument H



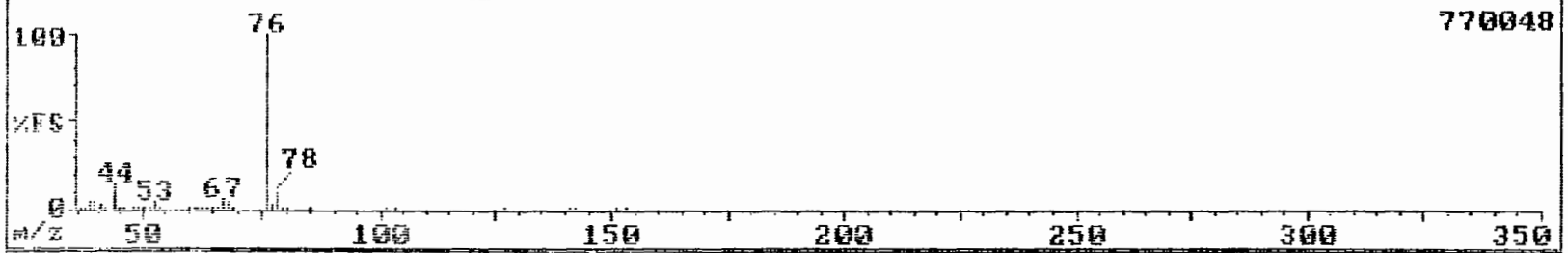
07-09-97 16:20 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 1 TUBEA/B T/TC 173-46-16A/B TLI#42284 Instrument H

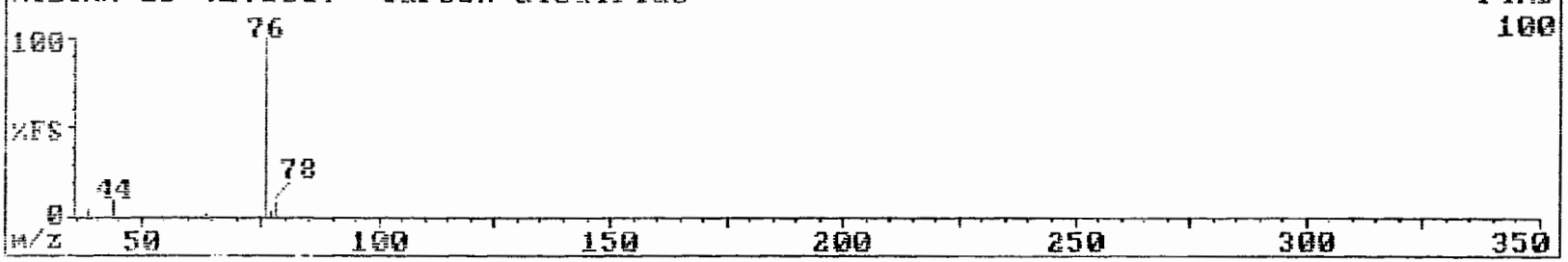
HS372 248 (2.480)



HS372 248 (2.481) REFINE

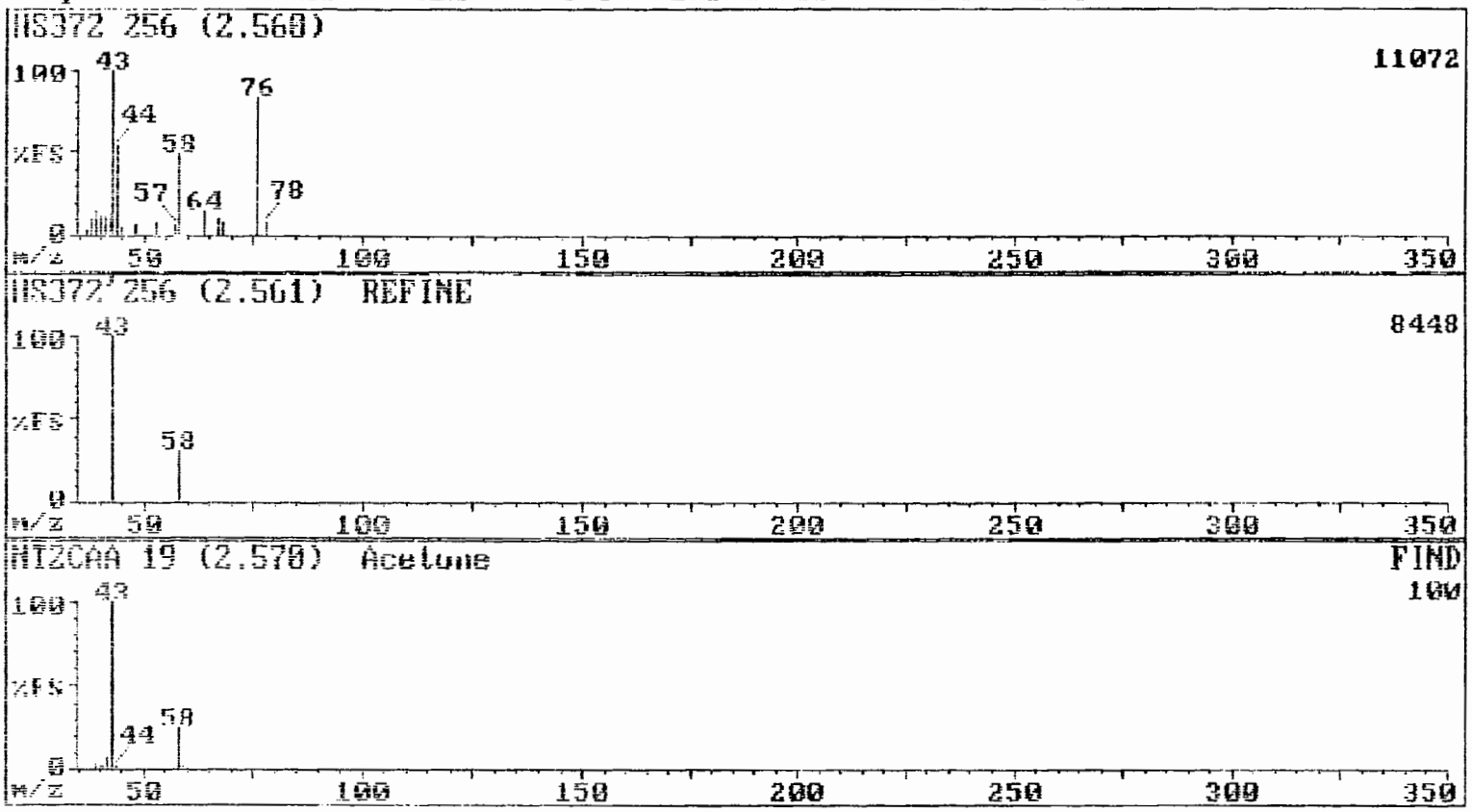


MT2CAA 18 (2.500) Carbon disulfide FIND 100



07-09-97 16:20 Triangle Laboratories of RTP, Inc. (919) 544-5729

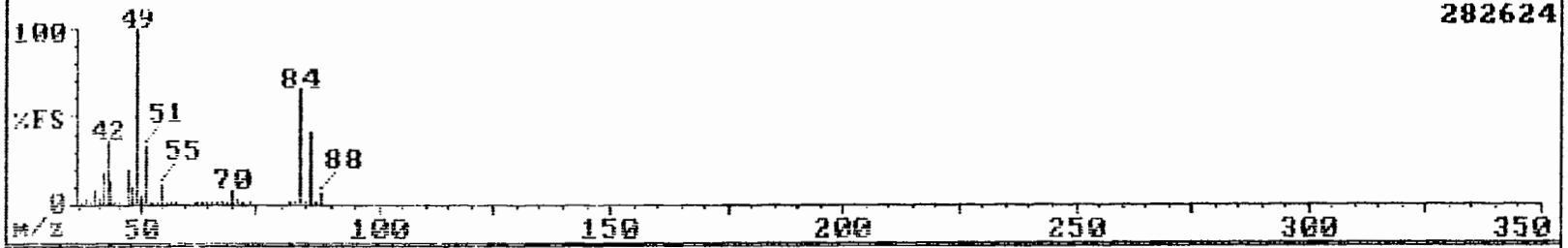
Sample: VOST-4 SET 1 TUBEA/B T/TC 173-46-16A/B TLI#42284 Instrument H



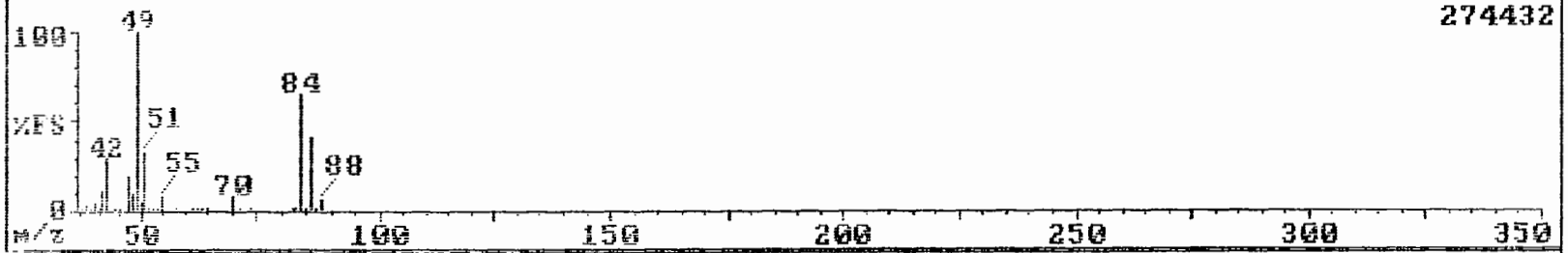
07-09-97 16:20 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 1 TUBEA/B T/TC 173-46-16A/B TLI#42284 Instrument H

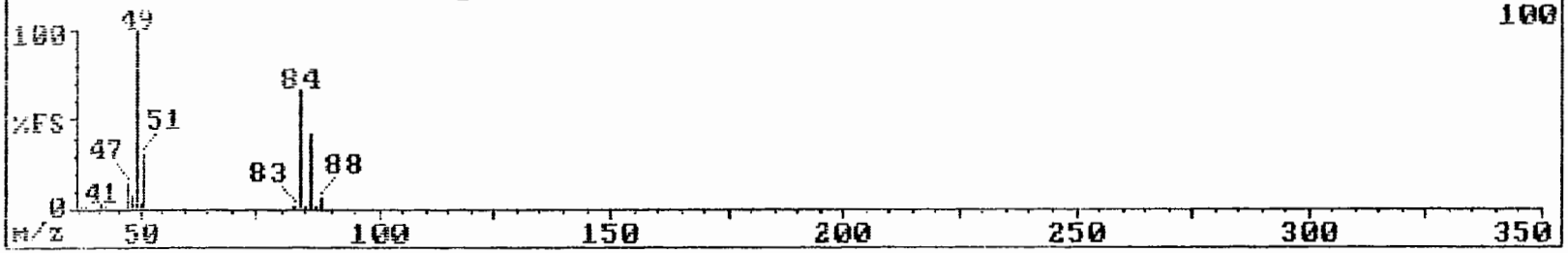
HS372 295 (2.950) 282624



HS372 295 (2.951) REFINE 274432

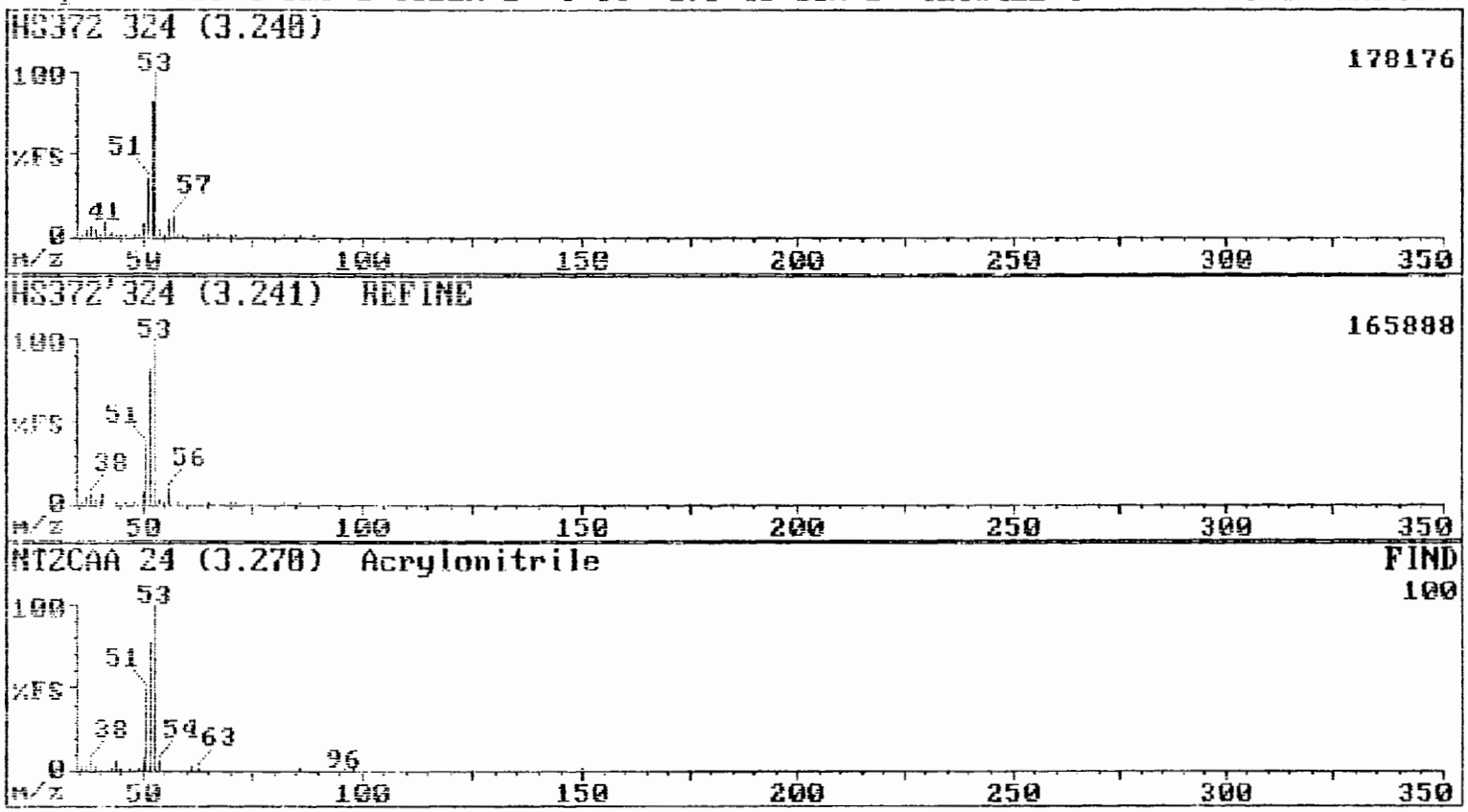


NTZCAA 21 (2.970) Methylene chloride FIND 100



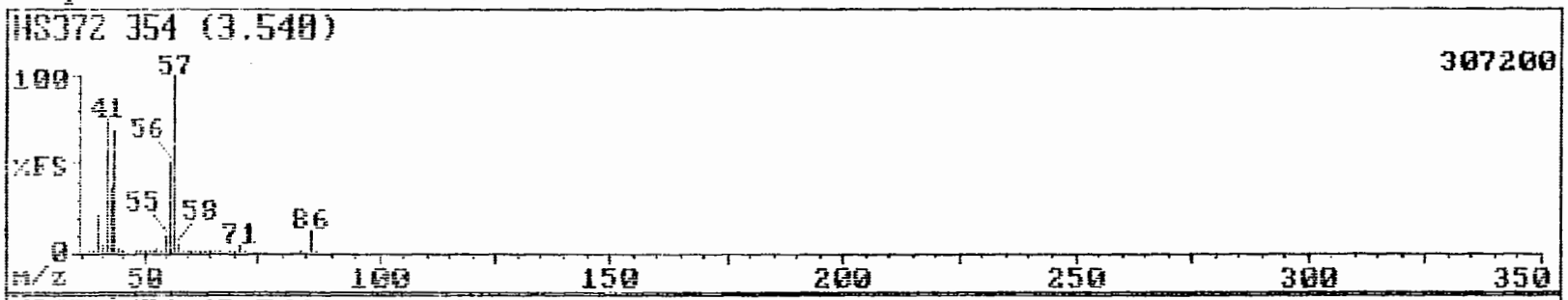
07-09-97 16:20 Triangle Laboratories of RTP, Inc. (919) 544-5729

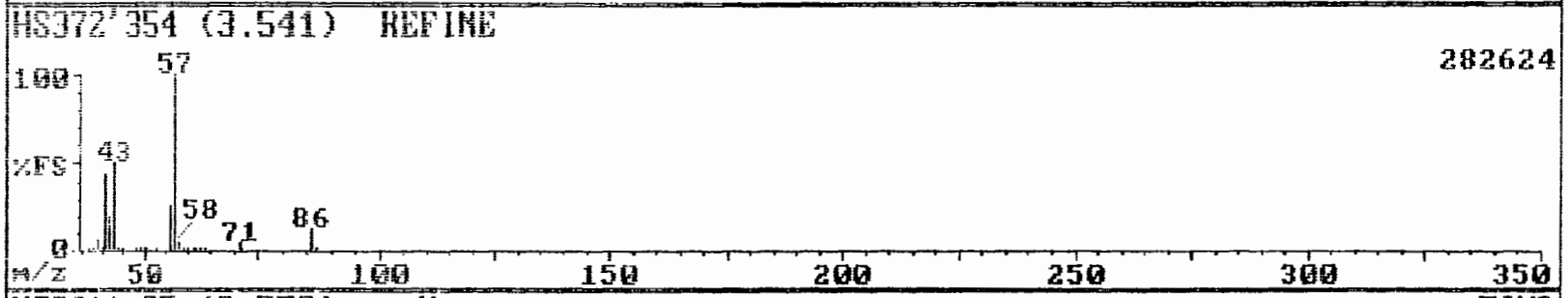
Sample: VOST-4 SET 1 TUBEA/B T/TC 173-46-16A/B TLI#42284 Instrument H

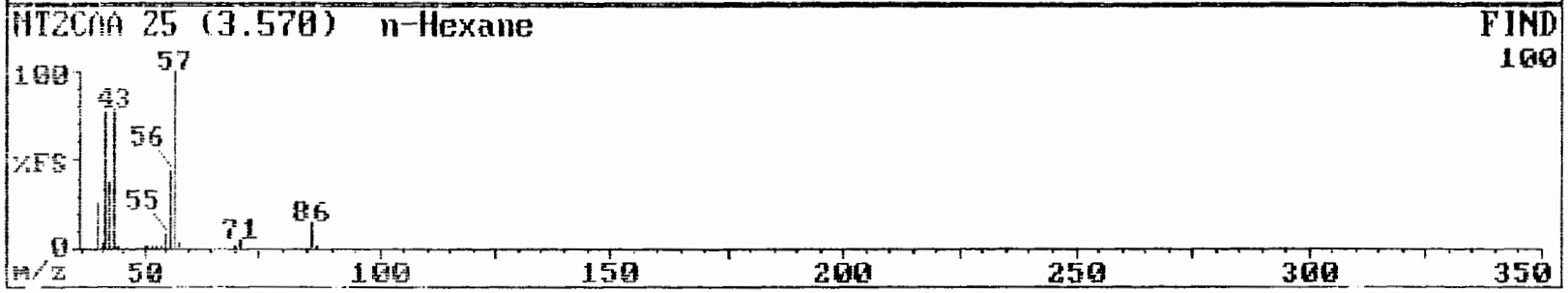


07-09-97 16:20 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 1 TUBEA/B T/TC 173-46-16A/B TLI#42284 Instrument H

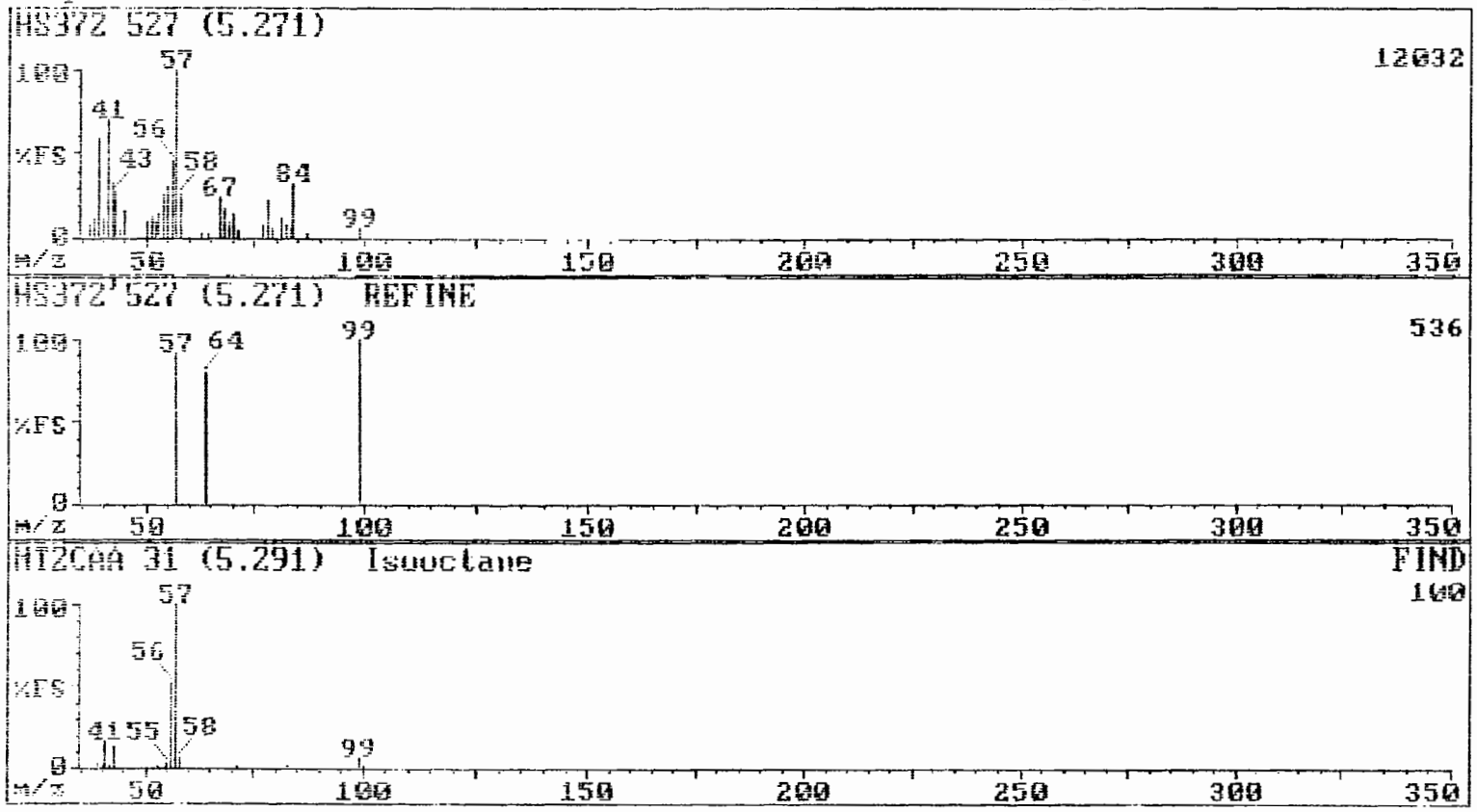






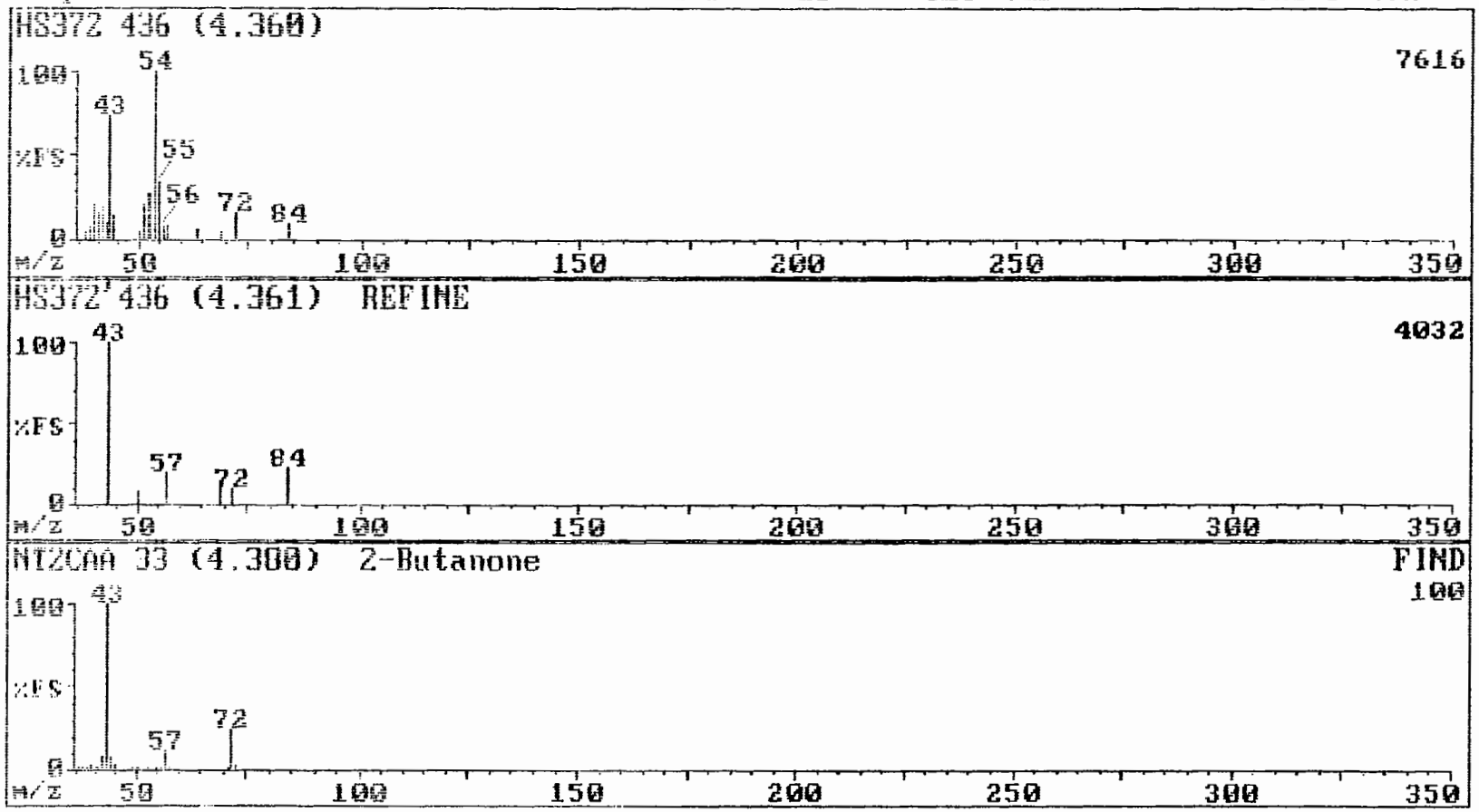
07-09-97 16:28 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 1 TUBEA/B T/TC 173-46-16A/B TLI#42284 Instrument H



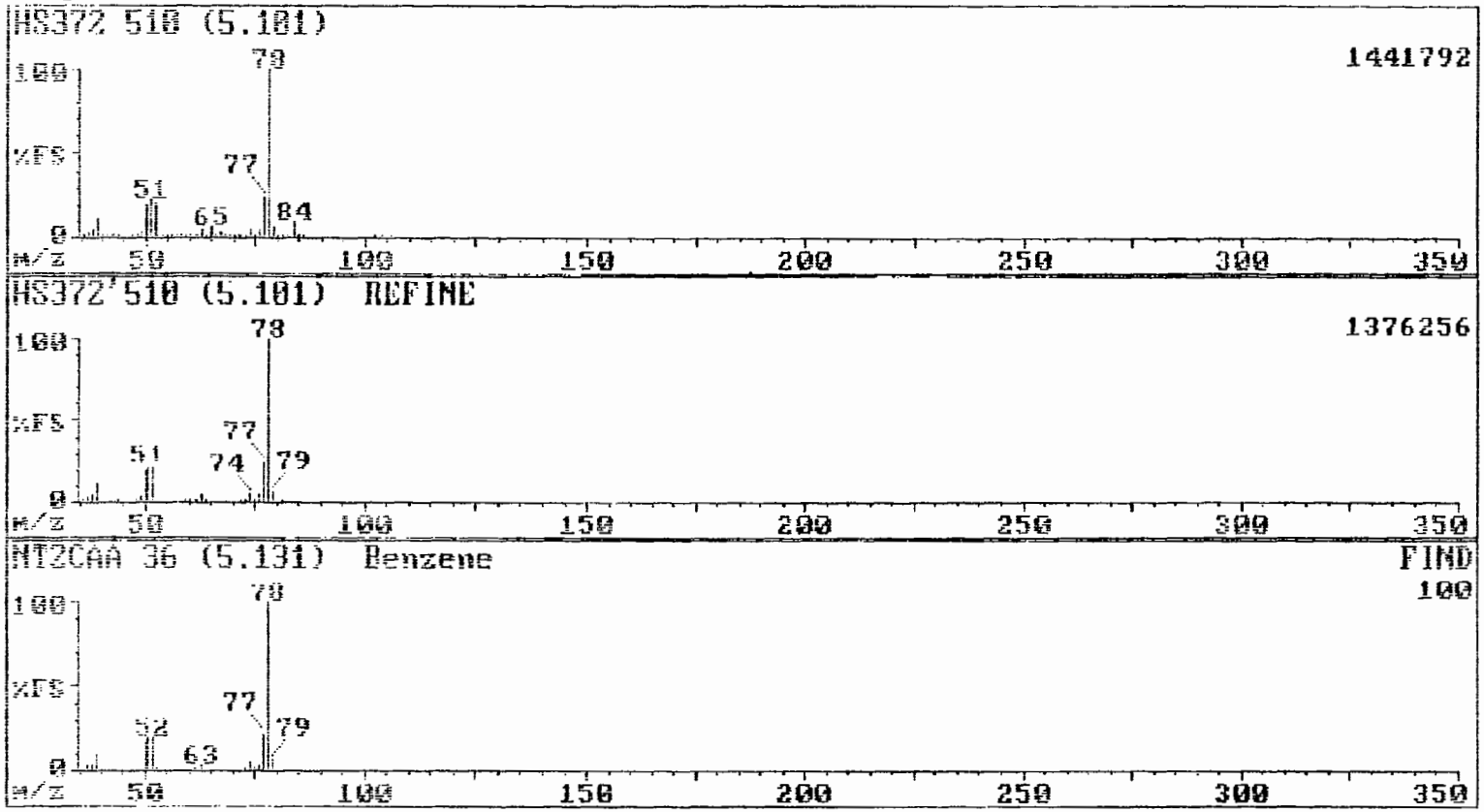
07-09-97 16:20 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 1 TUBEA/B T/TC 173-46-16A/B TLI#42284 Instrument H



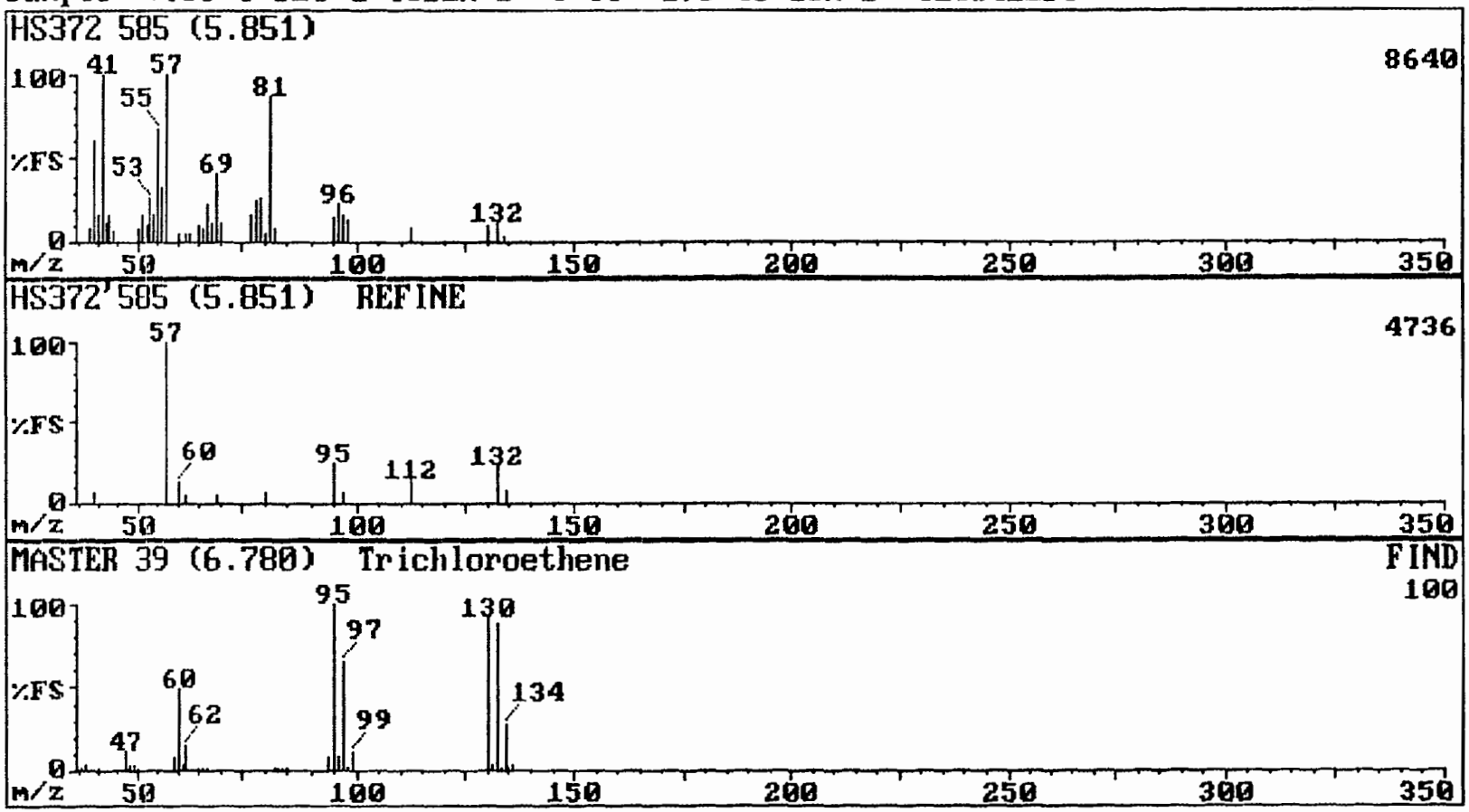
07-09-97 16:20 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 1 TUBEA/B T/TC 173-46-16A/B TLI#42284 Instrument H



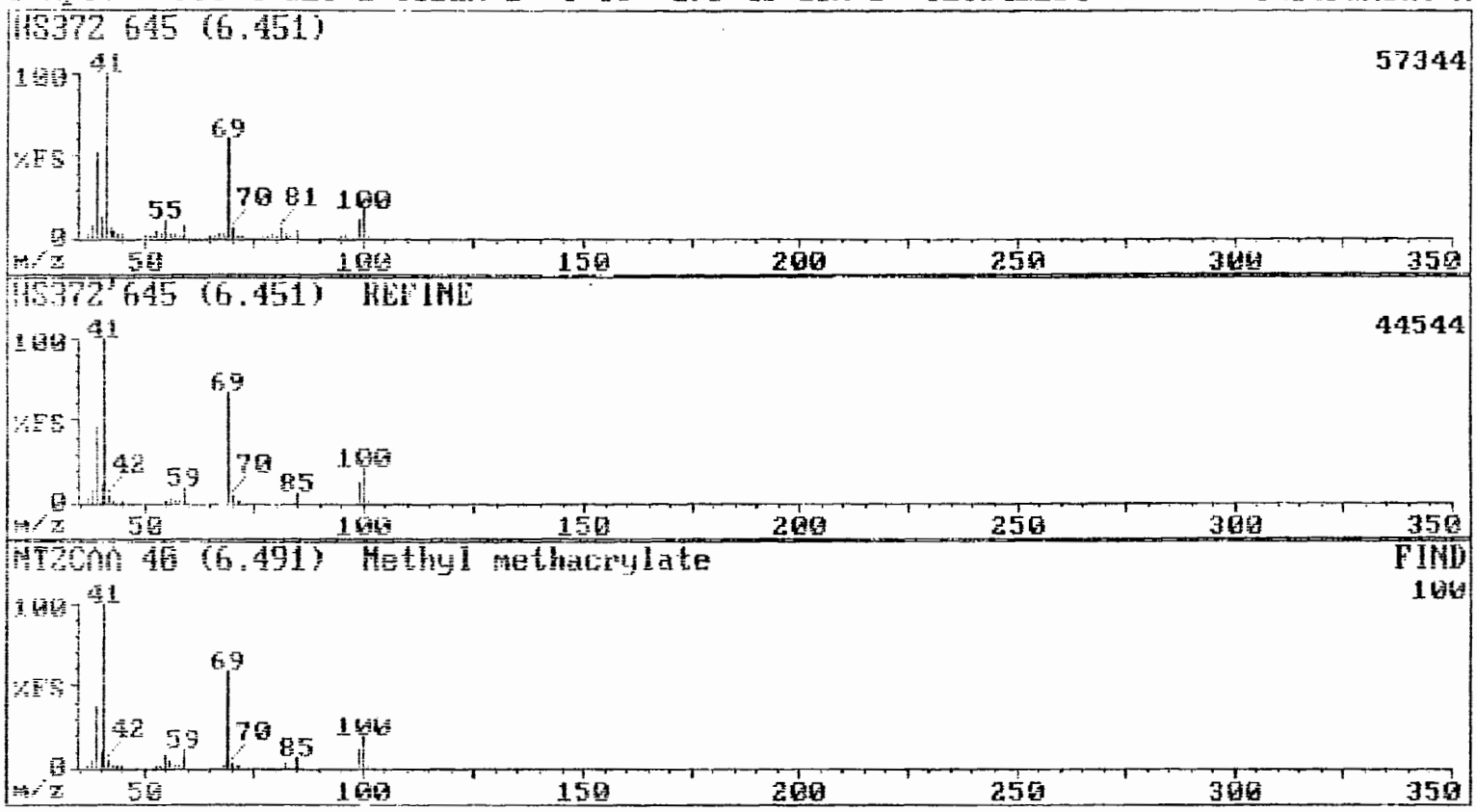
09-Jul-97 16:20 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 1 TUBEA/B T/TC 173-46-16A/B TLI#42284 Instrument H



07-09-97 16:20 Triangle Laboratories of RTP, Inc. (919) 544-5729

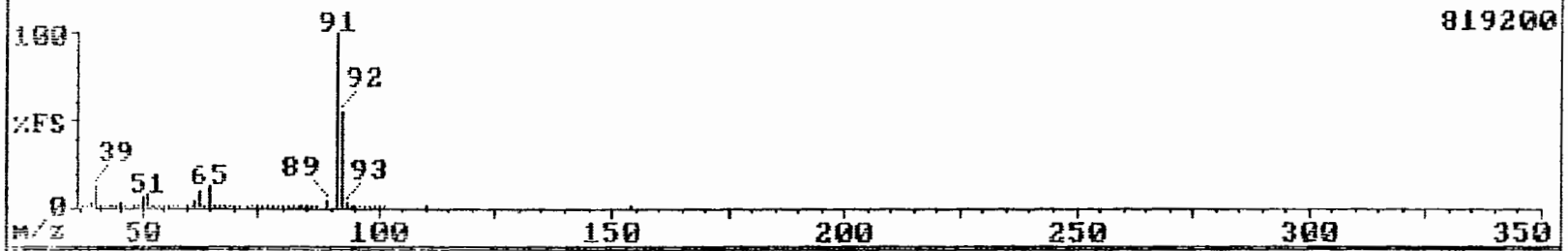
Sample: VOST-4 SET 1 TUBEA/B T/TC 173-46-16A/B TLI#42284 Instrument H



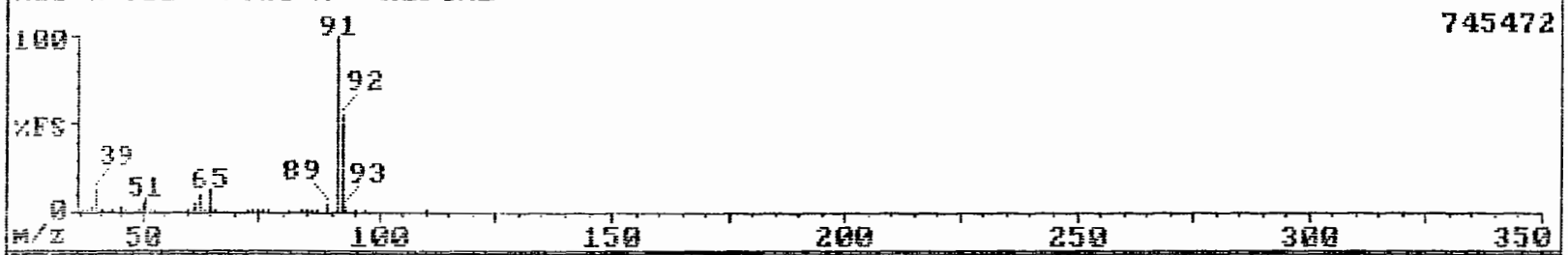
07-09-97 16:20 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 1 TUBEA/B T/TC 173-46-16A/B TLI#42284 Instrument H

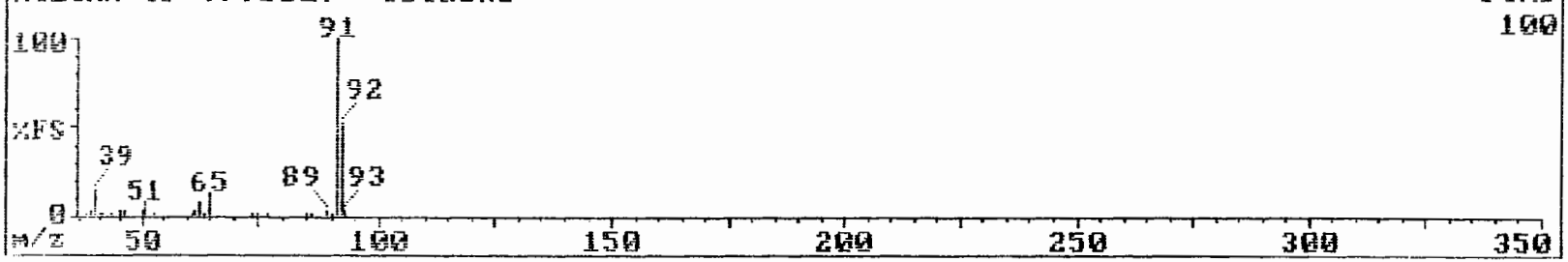
HS372 756 (7.561)



HS372 756 (7.561) REFINE

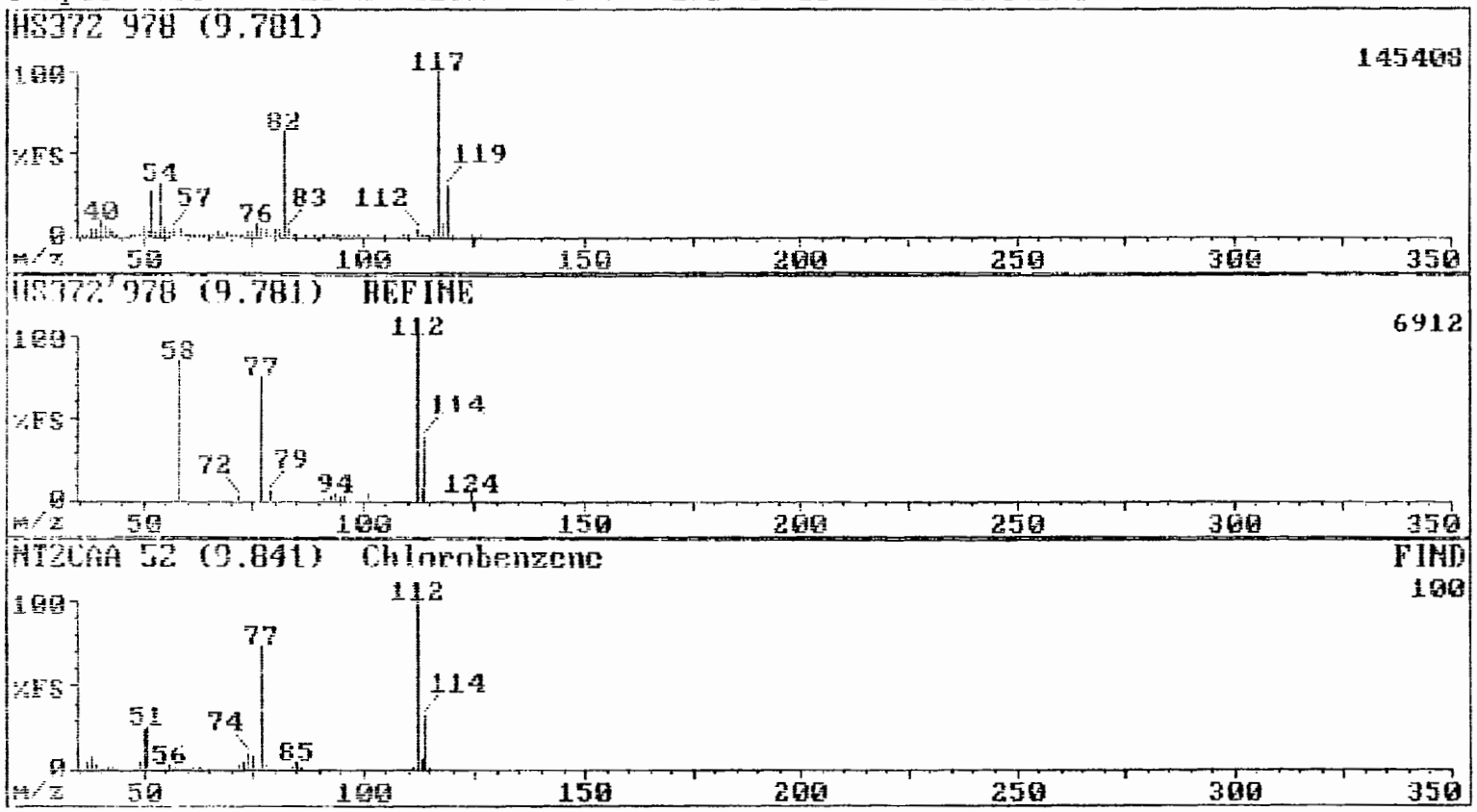


NT2CAA 49 (7.601) Toluene FIND 100



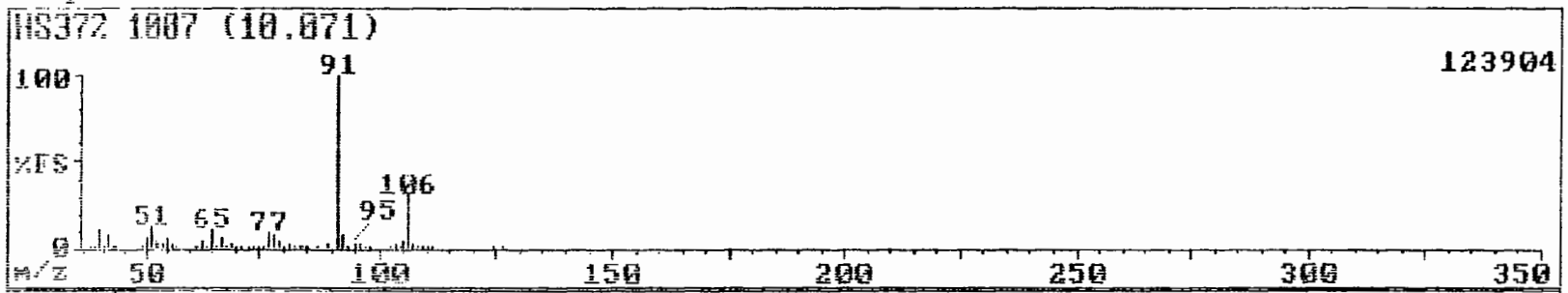
07-09-97 16:20 Triangle Laboratories of RTP, Inc. (919) 544-5729

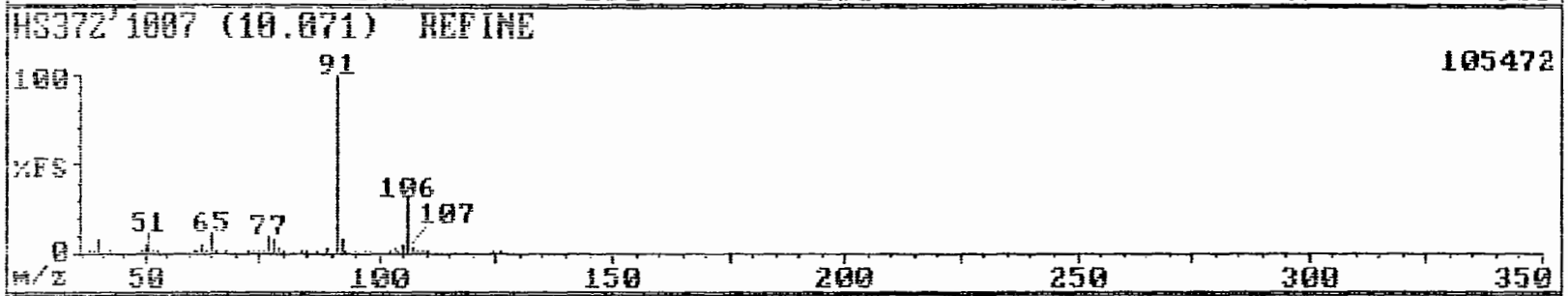
Sample: VOST-4 SET 1 TUBEA/B T/TC 173-46-16A/B TLI#42284 Instrument H

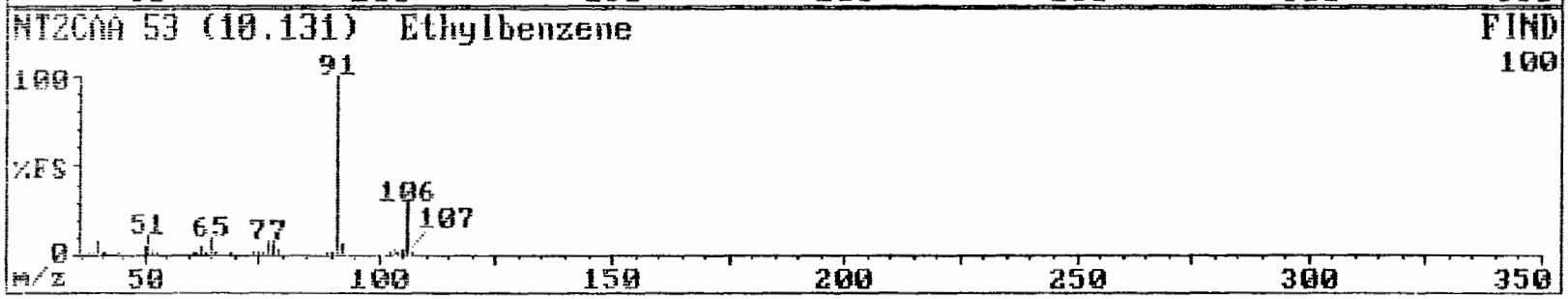


07-09-97 16:20 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 1 TUBEA/B T/TC 173-46-16A/B TLI#42284 Instrument H

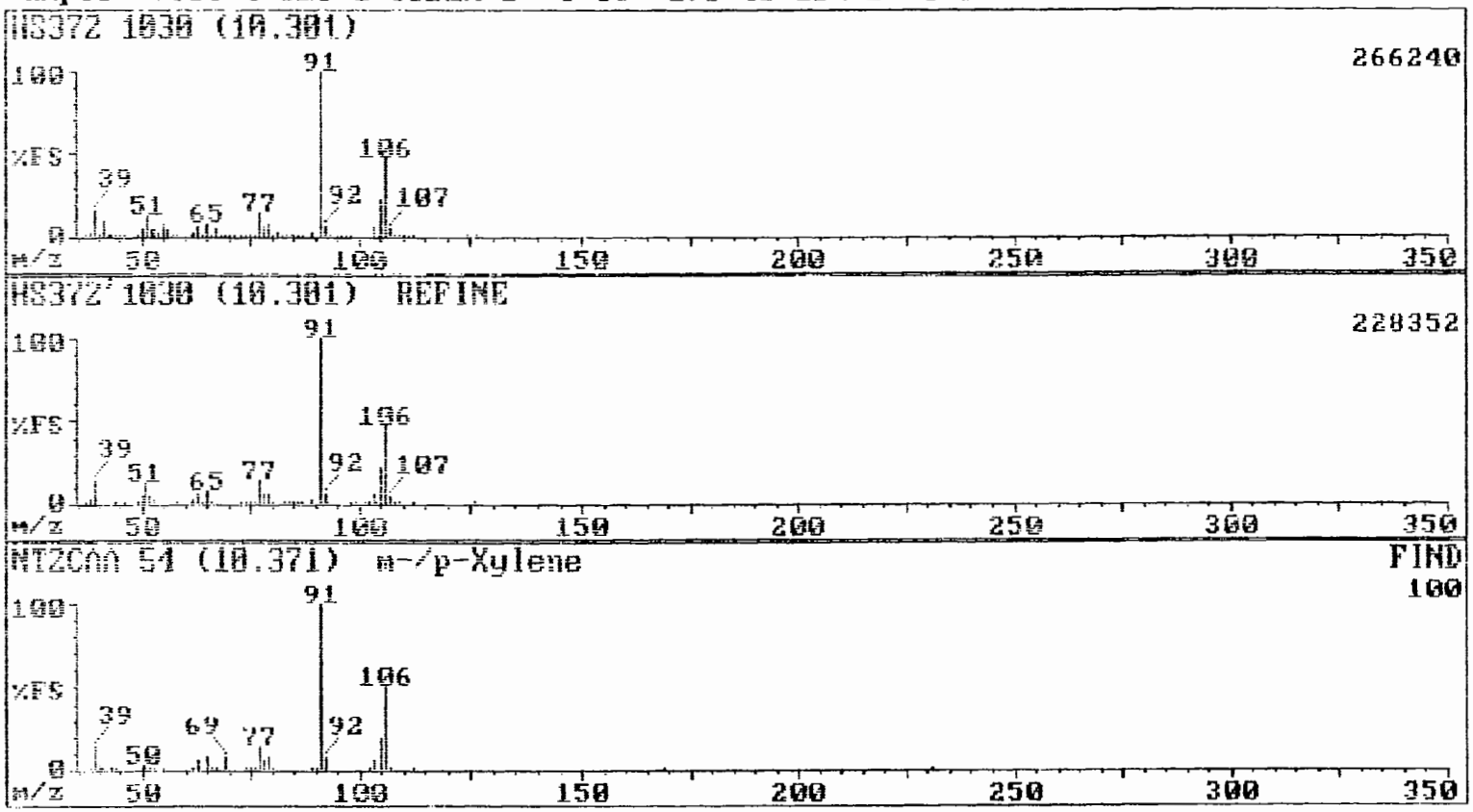






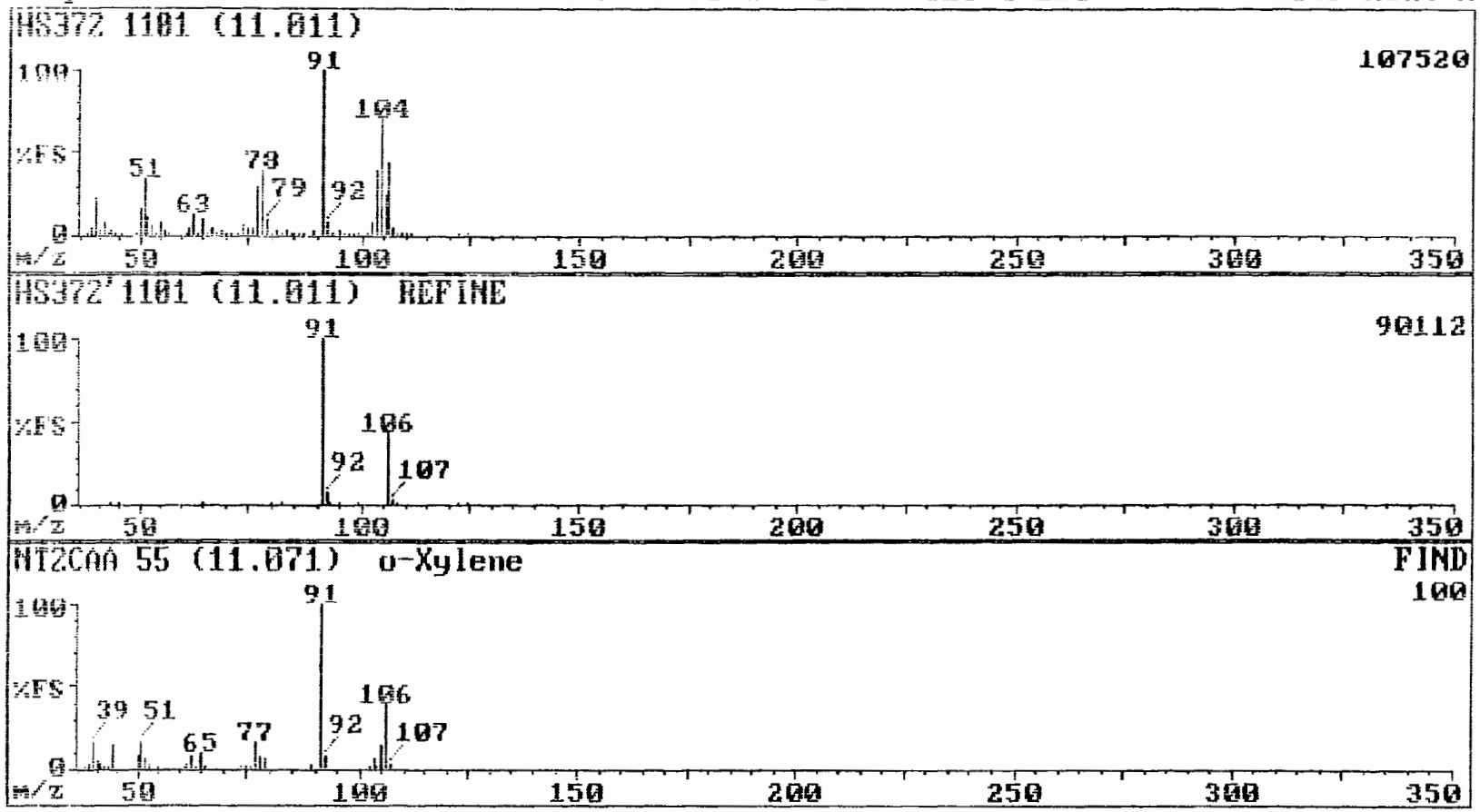
07-09-97 16:20 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 1 TUBEA/B T/TC 173-46-16A/B TLI#42284 Instrument H



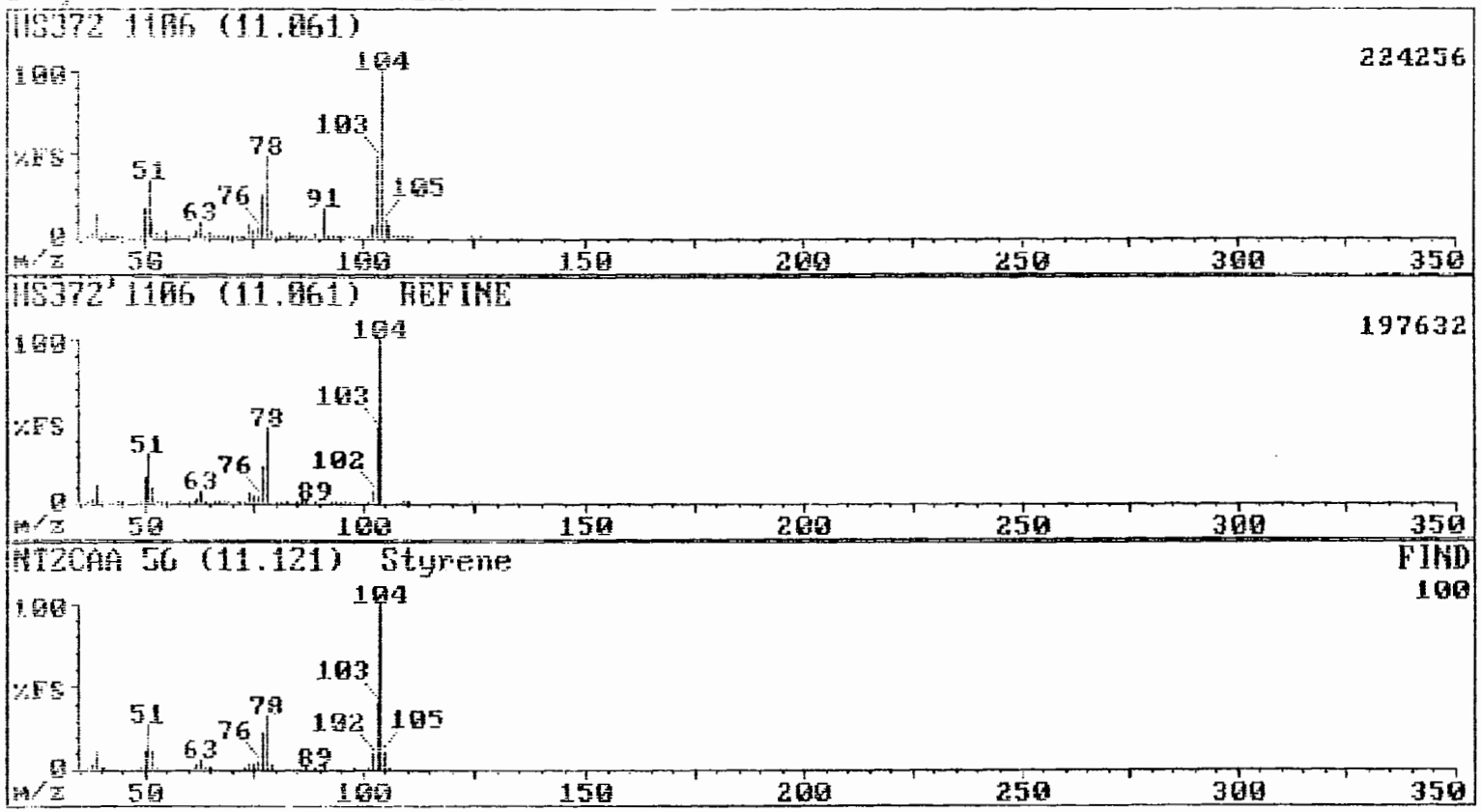
07-09-97 16:20 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 1 TUBEA/B T/TC 173-46-16A/B TLI#42284 Instrument H



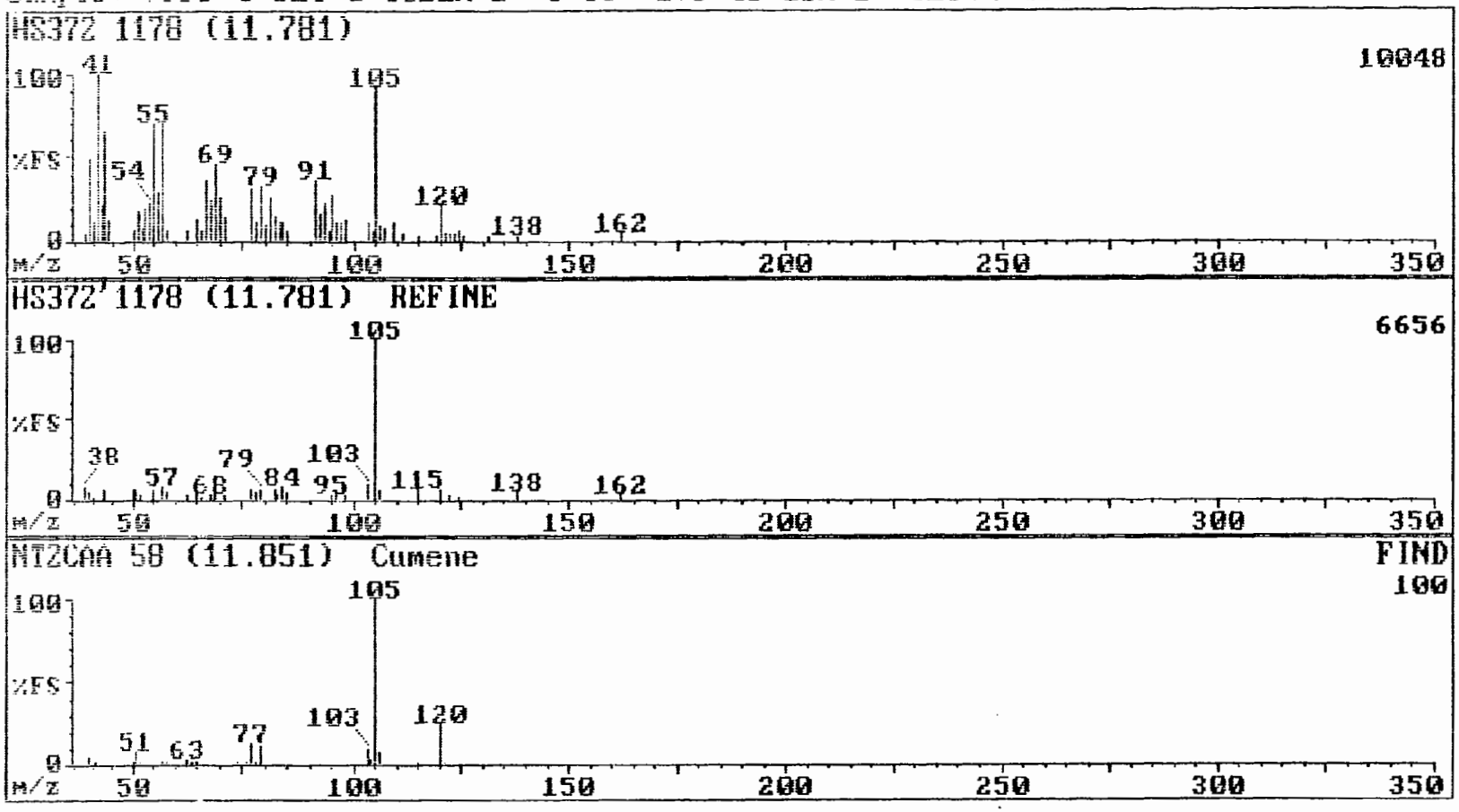
07 09 97 16:20 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 1 TUBEA/B T/TC 173-46-16A/B TLI#42284 Instrument H



07-09-97 16:20 Triangle Laboratories of RTP, Inc. (919) 544-5729

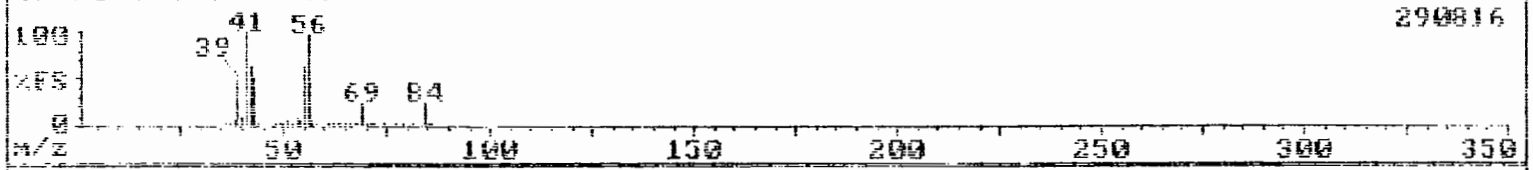
Sample: VOST-4 SET 1 TUBEA/B T/TC 173-46-16A/B TLI#42284 Instrument H



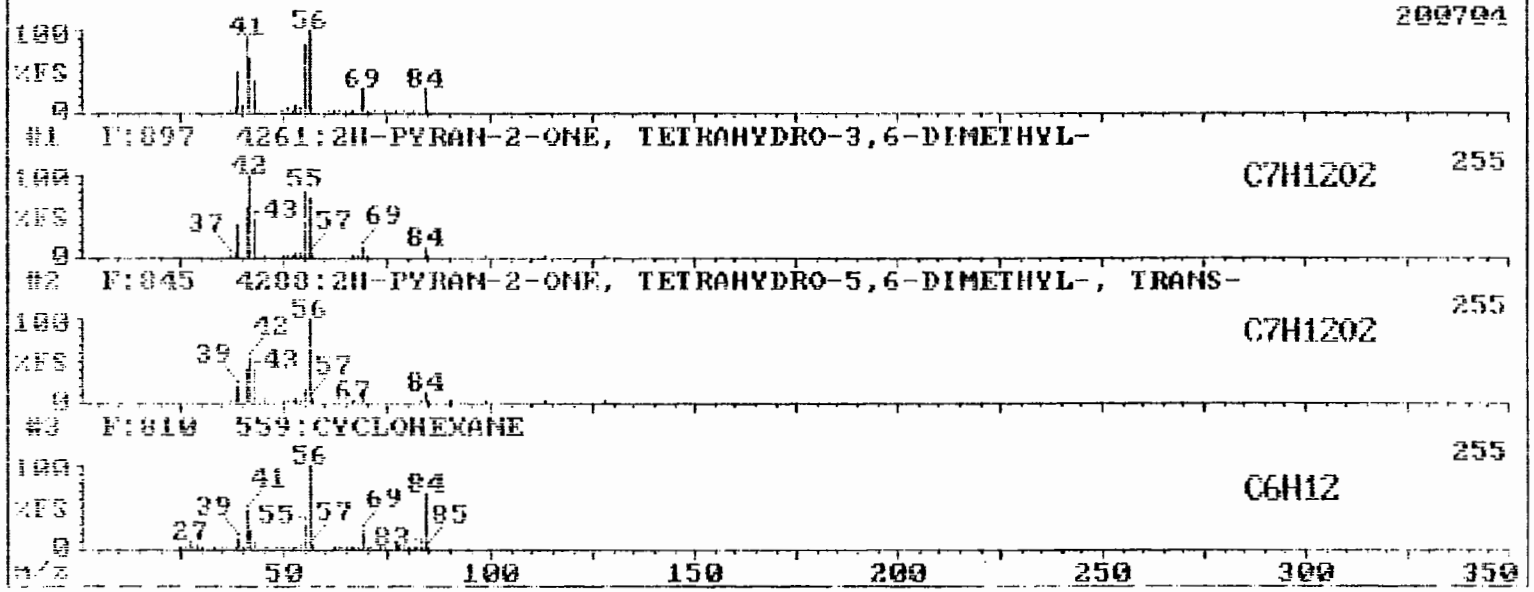
07/09/97 16:20 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 1 TUBEA/B T/TC 173-46-16A/B TLI#42284 Instrument: H

MS372 345 (3.450) NBS 290816



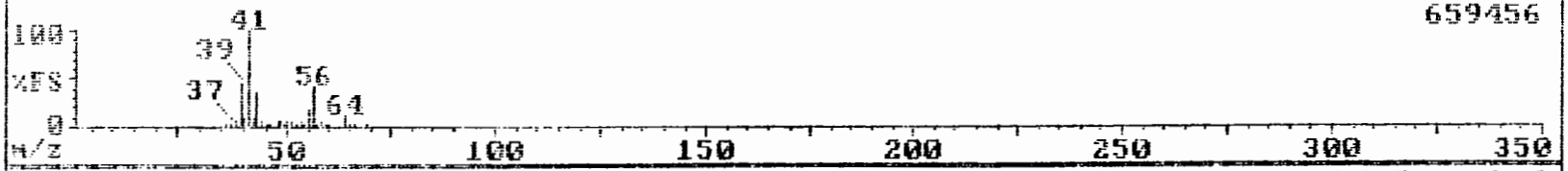
MS372'345 (3.451) REFINE NBS 61 Hits : 61 Searched 200704



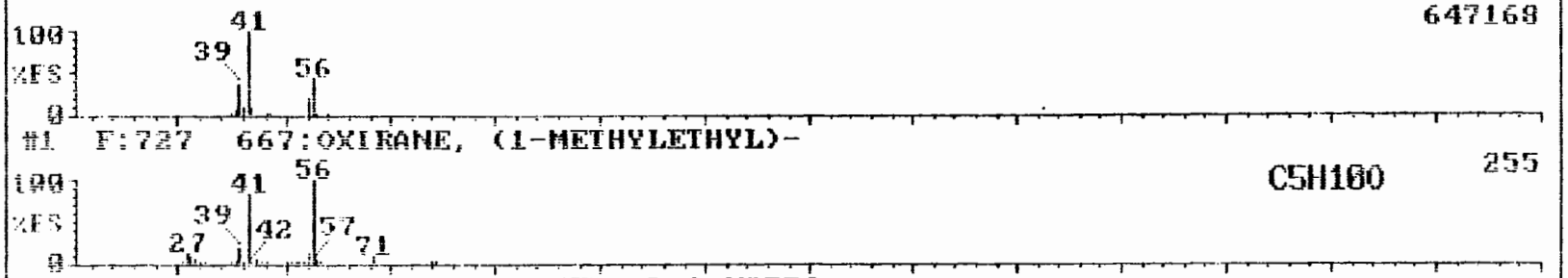
07/09/97 16:20 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 1 TUBEA/B T/TC 173-46-16A/B TLI#42284 Instrument: H

HS372 101 (1.010) NBS 659456



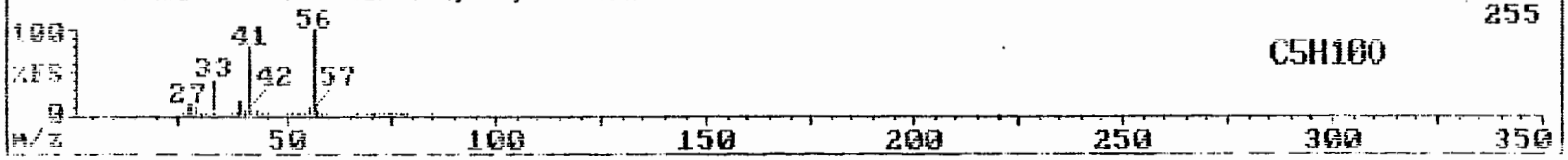
HS372 101 (1.011) REFINE NBS 28 Hits : 28 Searched 647168



#1 F:727 667:OXIRANE, (1-METHYLETHYL)- C5H10O 255

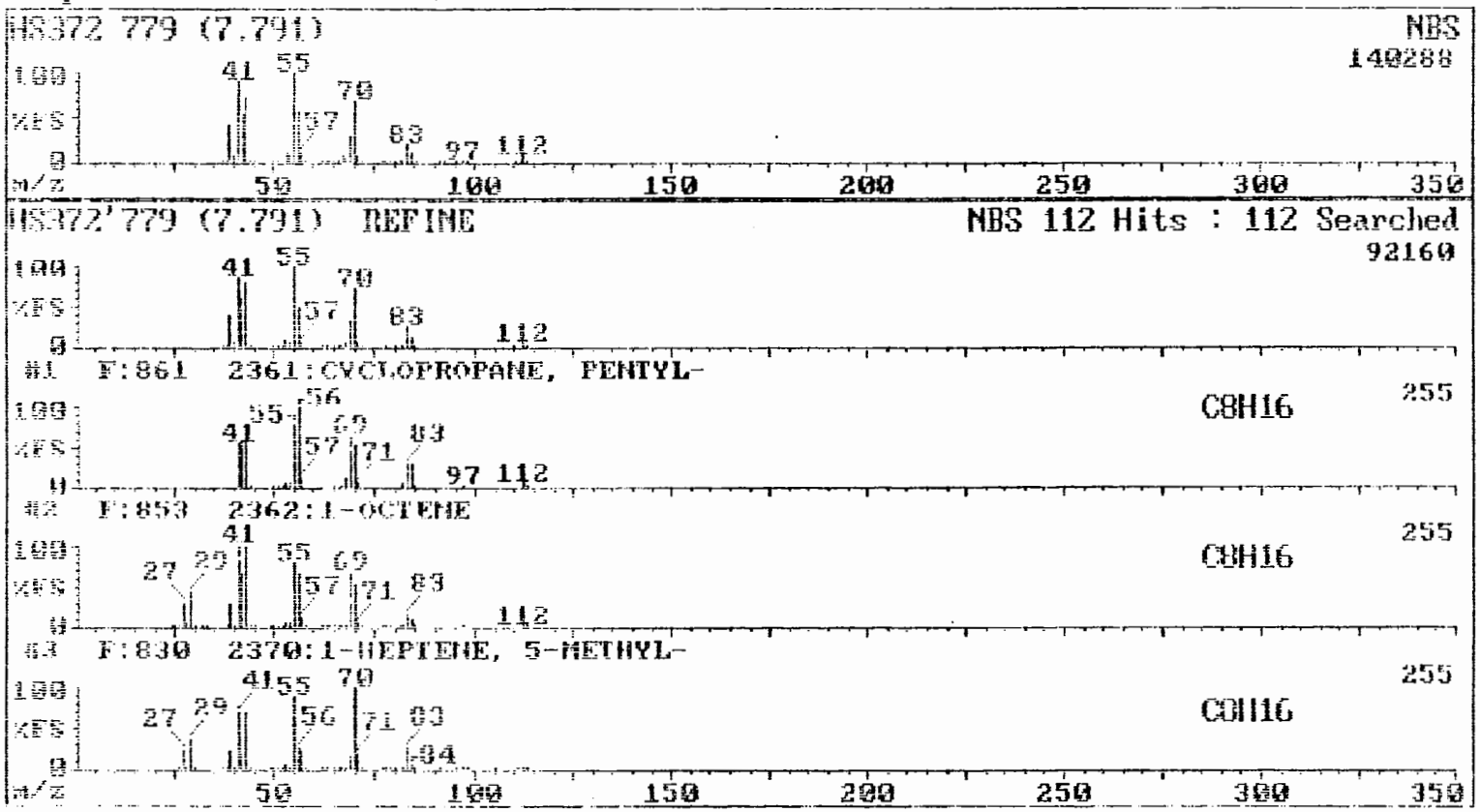
#2 F:723 1620:PROPANE, 2-METHYL-1-NITRO- C4H9O2N 255

#3 F:713 657:OXETANE, 3,3-DIMETHYL- C5H10O 255



07/00/97 10:20 Triangle Laboratories of RTP, Inc. (919) 544-5729

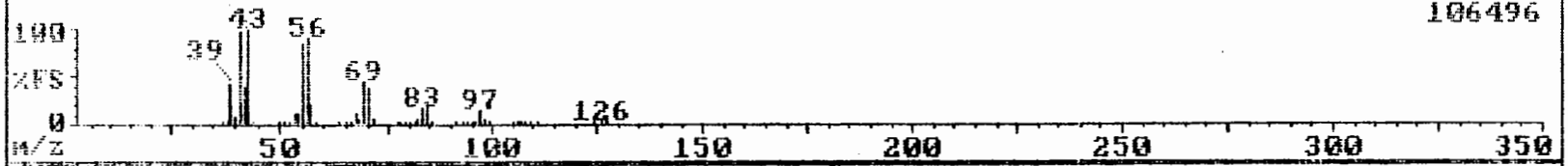
Sample: VOST 4 SET 1 TUBEA/B T/TC 173-46-160/B TLI#42284 Instrument: H



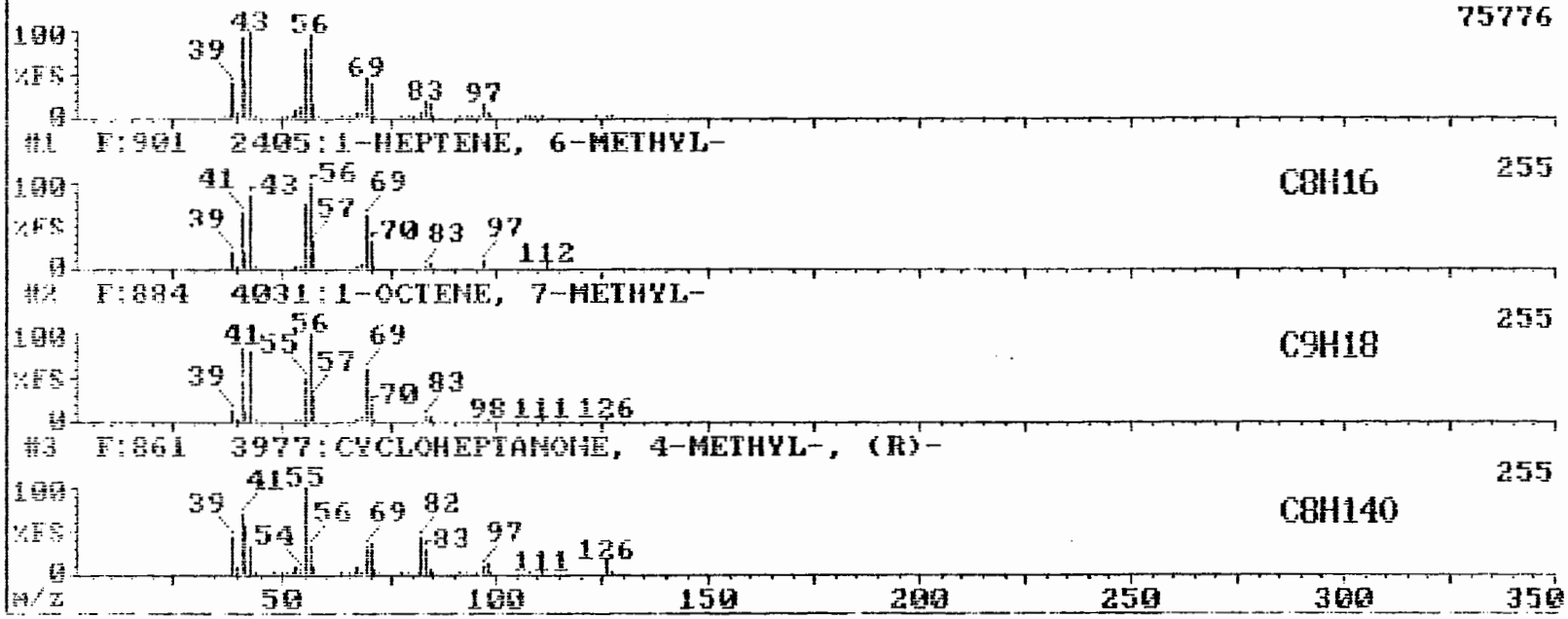
07/09/97 16:20 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 1 TUBEA/B T/TC 173-46-16A/B TLI#42284 Instrument: H

MS372 1047 (10.471) NBS 106496

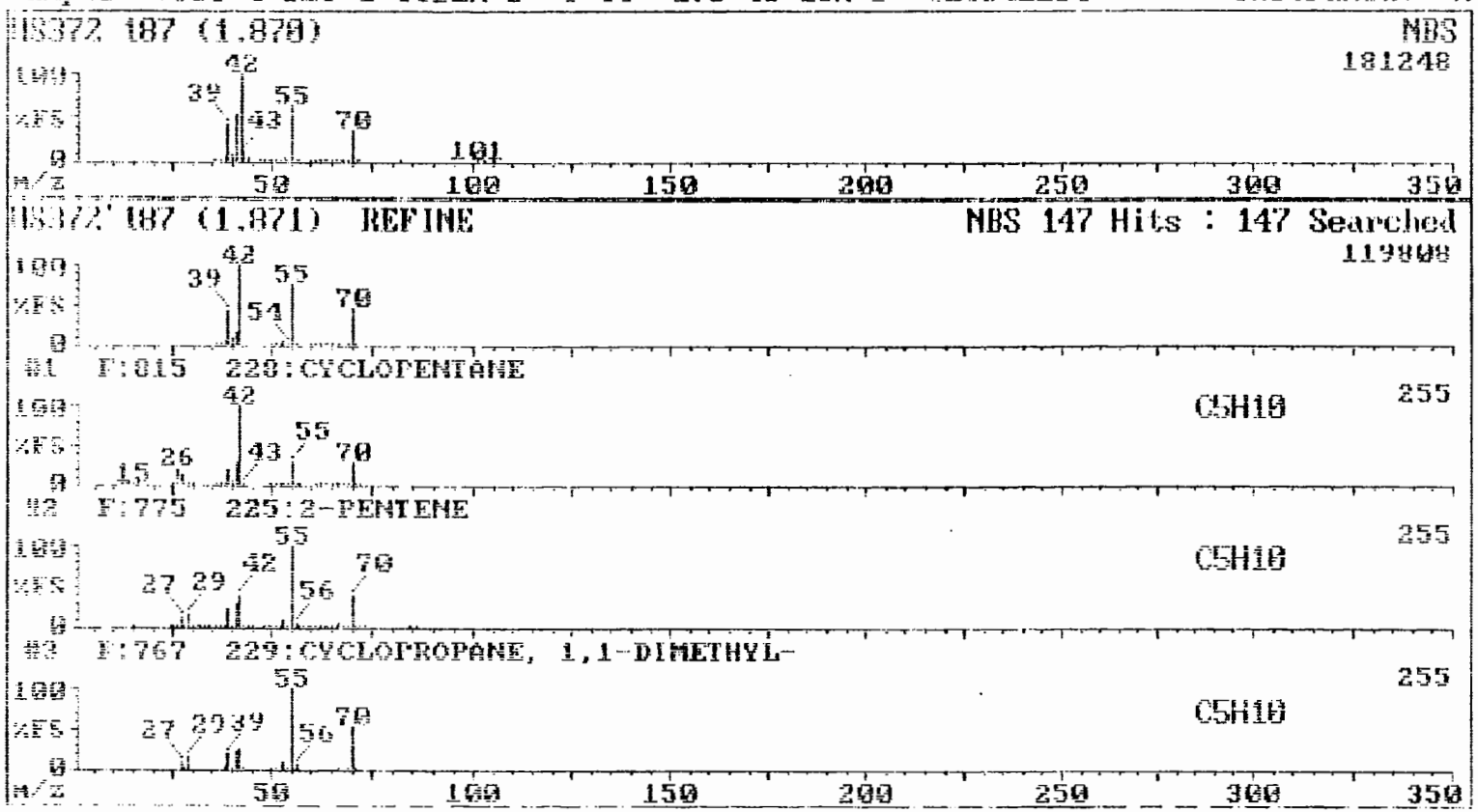


MS372' 1047 (10.471) REFINE NBS 83 Hits : 83 Searched 75776



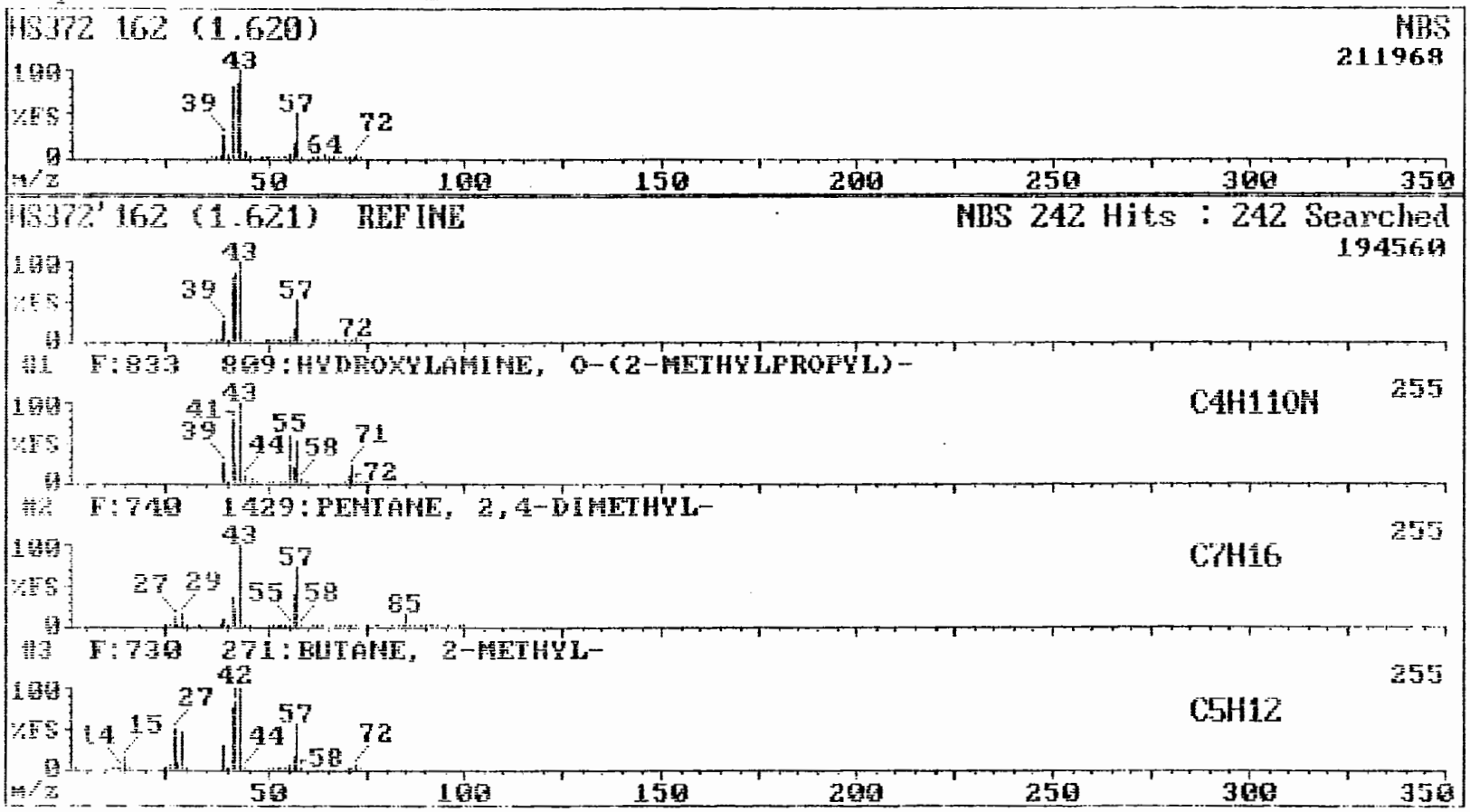
07/09/97 16:20 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 1 TUBEA/B T/TC 173-46-16A/B TLI#42204 Instrument: H



07/09/97 16:20 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 1 TUBEA/B T/TC 173-46-16A/B TLI#42284 Instrument: H

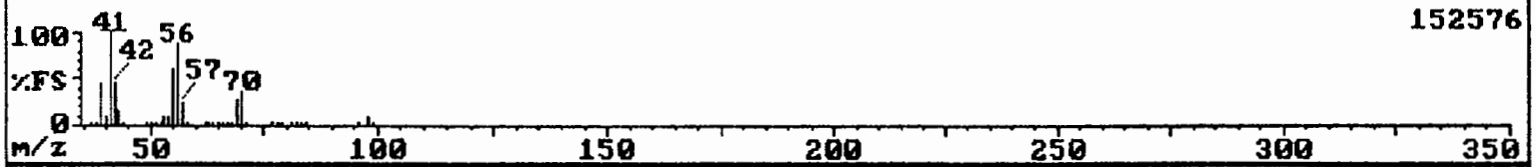


558 ~~557~~

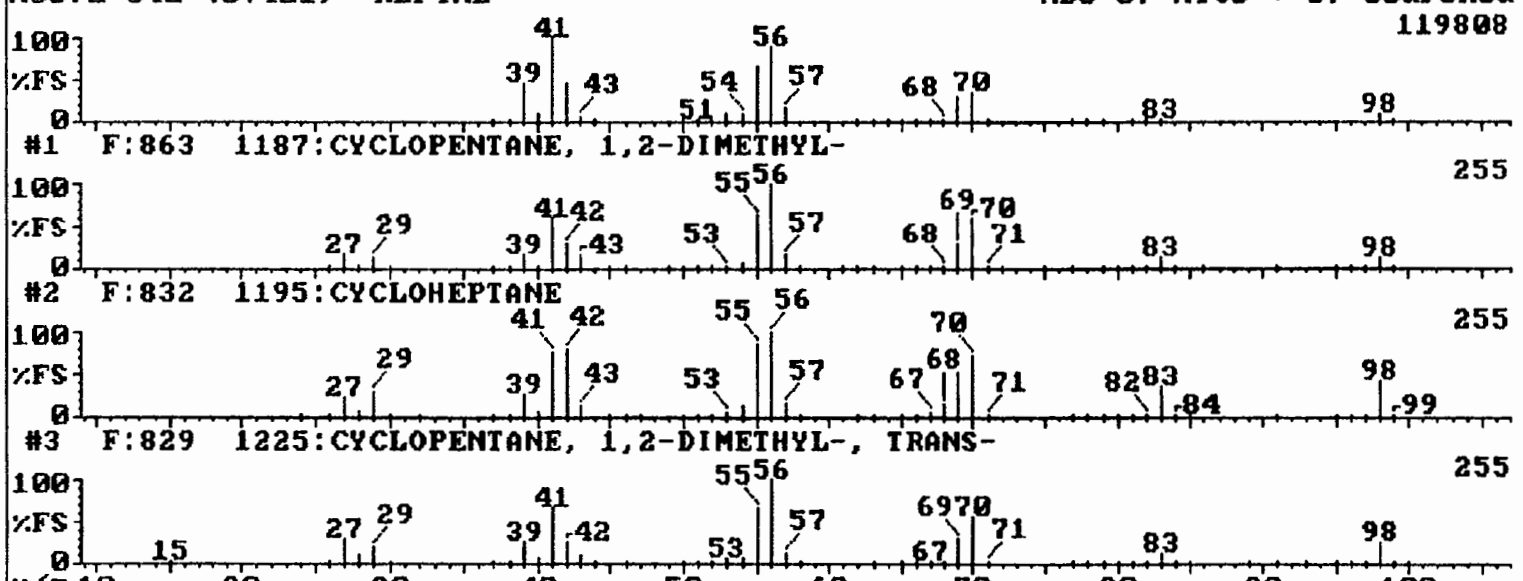
09-Jul-97 16:20 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 1 TUBEA/B T/TC 173-46-16A/B TLI#42284 Instrument H

HS372 542 (5.421) 152576

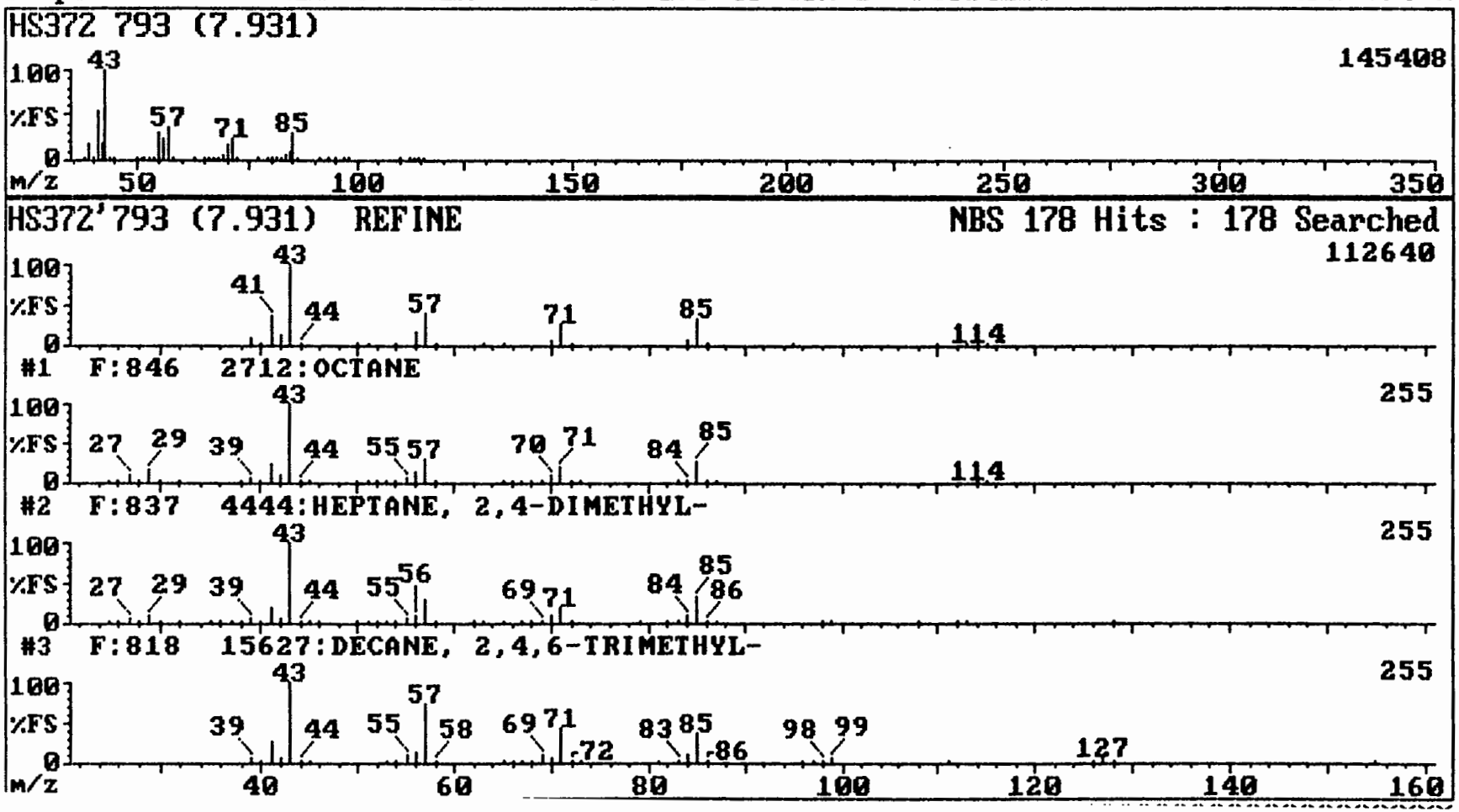


HS372'542 (5.421) REFINE NBS 37 Hits : 37 Searched



09-Jul-97 16:20 Triangle Laboratories of RTP, Inc. (919) 544-5729

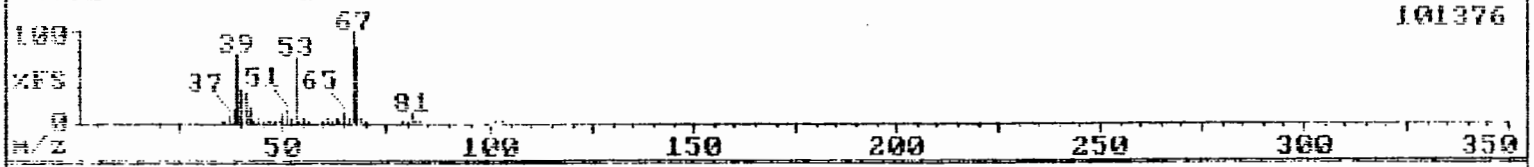
Sample: VOST-4 SET 1 TUBEA/B T/TC 173-46-16A/B TLI#42284 Instrument H



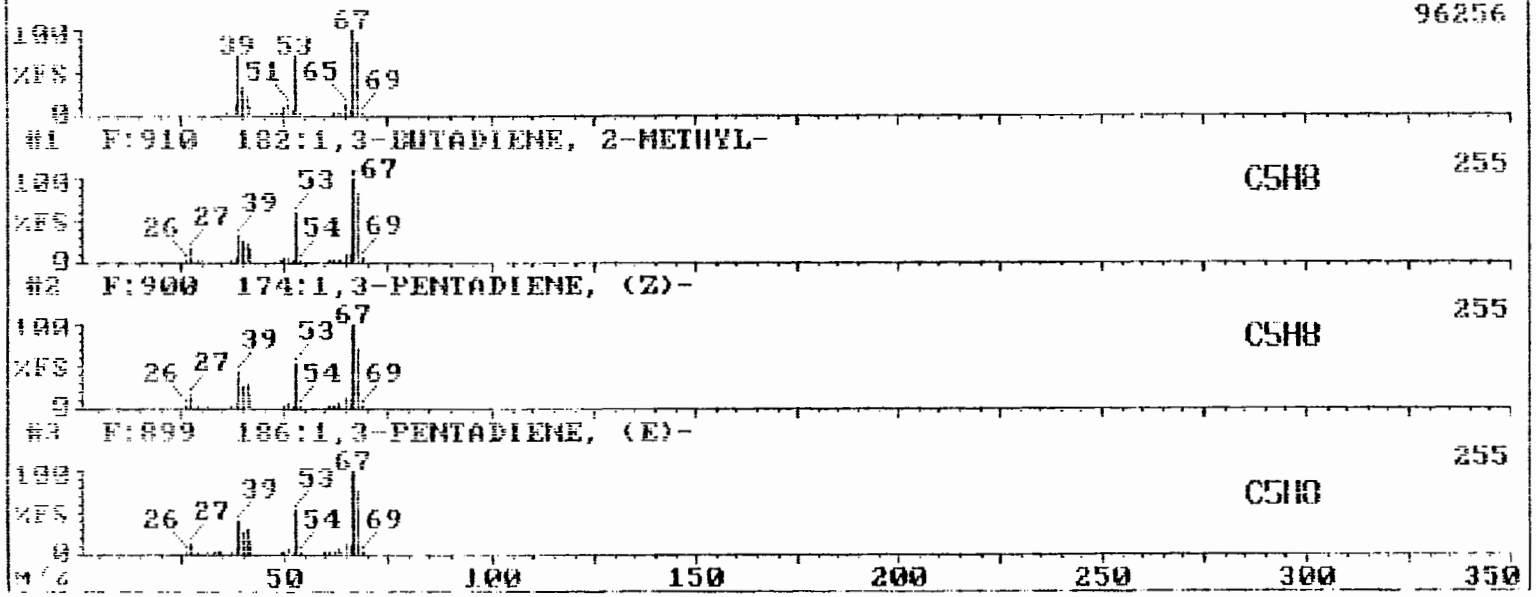
07/09/97 16:20 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 1 TUBEA/B T/TC 173-46-16A/B TLI#42284 Instrument: H

HS372 218 (2.180) NBS 101376



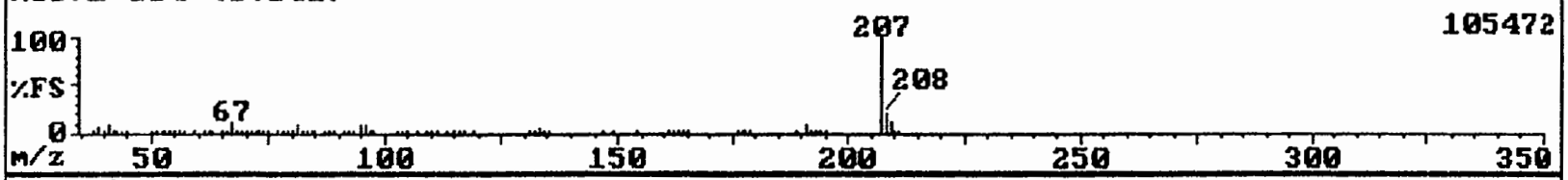
HS372'218 (2.181) REFINE NBS 33 Hits : 33 Searched 96256



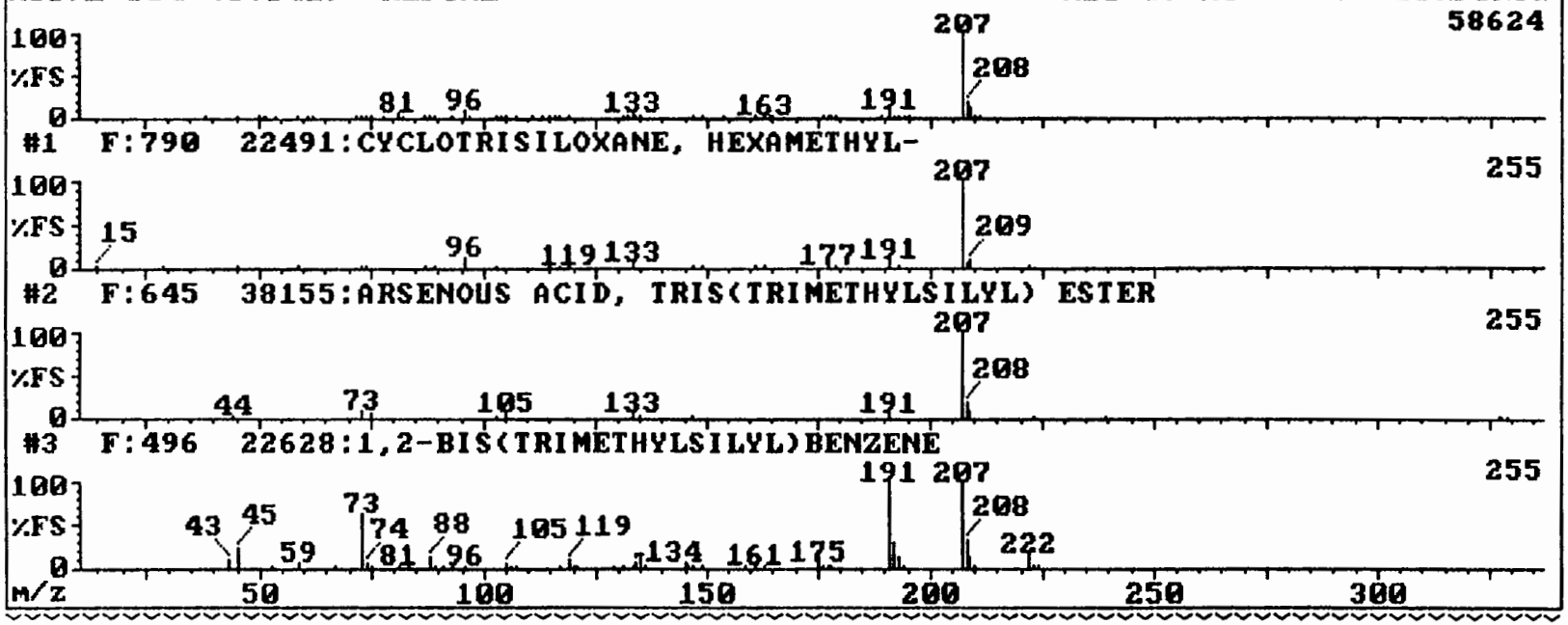
09-Jul-97 16:20 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 1 TUBEA/B T/TC 173-46-16A/B TLI#42284 Instrument H

HS372 864 (8.641)



HS372'864 (8.641) REFINE NBS 87 Hits : 87 Searched



Pacific Environmental Services

Project Number: 42284
Sample File: HS373

Method 8240A VOST
Sample ID: VOST-4 SET 2 TUBEA/B T/TC

Client Project: S407-003
TLI ID: 173-46-17A,B

Date Received: 06/30/97
Date Analyzed : 07/09/97

Response File: ICALH708

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
Bromochloromethane		IS 1	4.47		
Chloromethane	0.300		0.92		0.05
Vinyl Chloride		U		0.001	0.05
1,3-Butadiene	0.421		1.08		0.05
Bromomethane	0.016	J	1.41		0.05
Chloroethane	0.053		1.53		0.05
Vinyl bromide		U		0.001	0.05
Trichlorofluoromethane	0.033	J	1.81		0.05
1,1-Dichloroethene		U		0.001	0.05
Iodomethane		U		0.001	0.05
Carbon disulfide	0.744		2.47		0.05
Acetone	0.053	B	2.56		0.05
Allyl chloride		U		0.001	0.05
Methylene chloride	0.358	B	2.94		0.05
trans-1,2-Dichloroethene		U		0.001	0.05
tert-Butyl methyl ether		U		0.001	0.05
Acrylonitrile	2.295	E	3.24		0.05
n-Hexane	0.281		3.53		0.05
1,1-Dichloroethane		U		0.001	0.05
1,2-Epoxybutane		U		0.003	0.05
cis-1,2-Dichloroethene		U		0.001	0.05
Chloroform		U		0.001	0.05
1,2-Dichloroethane		U		0.001	0.05
Isooctane		U		0.001	0.05
1,4-Difluorobenzene		IS 2	5.62		
Vinyl acetate		U		0.001	0.05

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

Triangle Laboratories of RTP, Inc.
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

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Printed: 16:25 07/22/1997

Pacific Environmental Services

Project Number: 42284 | **Method 8240A VOST**
Sample File: HS373 | **Sample ID: VOST-4 SET 2 TUBEA/B T/TC**

Client Project: S407-003 | **Date Received: 06/30/97** | **Response File: ICALH708**
TLI ID: 173-46-17A,B
Date Analyzed : 07/09/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
2-Butanone	0.027	J	4.36		0.05
1,1,1-Trichloroethane		U		0.001	0.05
Carbon tetrachloride		U		0.001	0.05
Benzene	1.519	BE	5.10		0.05
Trichloroethene		U		0.001	0.05
1,2-Dichloropropane		U		0.001	0.05
Ethyl acrylate		U		0.001	0.05
Methyl methacrylate	0.218		6.45		0.05
Bromodichloromethane		U		0.001	0.05
cis-1,3-Dichloropropene		U		0.001	0.05
trans-1,3-Dichloropropene		U		0.001	0.05
1,1,2-Trichloroethane		U		0.001	0.05
Dibromochloromethane		U		0.001	0.05
Ethylene dibromide		U		0.001	0.05
Bromoform		U		0.001	0.05
Chlorobenzene-d_5		IS 3	9.74		
4-Methyl-2-pentanone		U		0.001	0.05
Toluene	0.621	B	7.56		0.05
Tetrachloroethene		U		0.001	0.05
2-Hexanone		U		0.001	0.05
Chlorobenzene	0.011	J	9.78		0.05
Ethylbenzene	0.080		10.07		0.05
m-/p-Xylene	0.214		10.30		0.10
o-Xylene	0.090		11.01		0.05
Styrene	0.263		11.06		0.05
1,1,2,2-Tetrachloroethane		U		0.001	0.05

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

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Pacific Environmental Services

Project Number: 42284 | Method 8240A VOST
Sample File: HS373 | Sample ID: VOST-4 SET 2 TUBEA/B T/TC

Client Project: S407-003 | Date Received: 06/30/97 | Response File: ICALH708
TLI ID: 173-46-17A,B
Date Analyzed : 07/09/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
Cumene	0.007	J	11.79		0.05

Surrogate Summary	Amount (ug)	RT	IS Ref	%REC
1,2-Dichloroethane-d_4	0.237	5.08	1	95
Benzene-d_6	0.276	5.06	2	110
Toluene-d_8	0.282	7.47	3	113

Reviewed by TW Date 7/22/97

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit

IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

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Printed: 16:25 07/22/1997

Pacific Environmental Services

Project Number: 42284 Method 8240A

Sample File: HS373 Sample ID: VOST-4 SET 2 TUBEA/B T/TC

Client Project:	S407-003	Date Received:	06/30/97
TLI ID:	173-46-17A,B	Date Analyzed:	07/09/97
	Dilution Factor:	1.00	

Tentatively Identified Compounds

Name	RT	Area	IS RT	IS Area	Amount, ug
Unknown	0.711	27882954	9.741	10573111	0.659
C7H14 Isomer	5.421	23254314	9.741	10573111	0.550
Sulfur Dioxide	0.841	20716460	9.741	10573111	0.490
C8H16 Isomer	7.791	19498870	9.741	10573111	0.461
C4H8 Isomer	1.011	15310318	9.741	10573111	0.362
C9H18 Isomer	10.471	14679076	9.741	10573111	0.347
C5H10 Isomer	1.860	9742207	9.741	10573111	0.230
Octane	7.931	9190736	9.741	10573111	0.217
C5H8 Isomer	2.170	6804485	9.741	10573111	0.161
C13H28 Isomer	10.611	6661280	9.741	10573111	0.158

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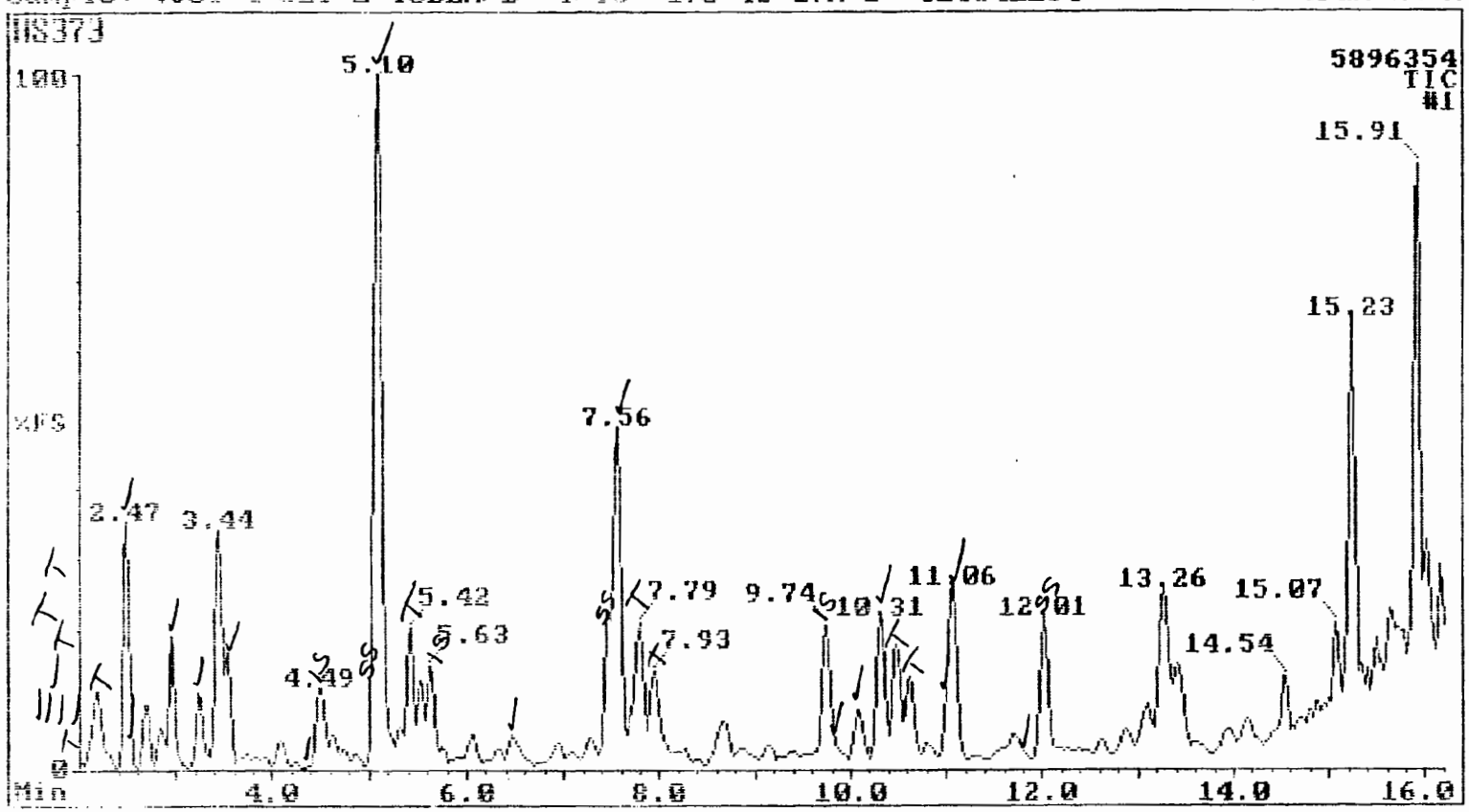
07-09-97 16:44 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 2 TUBEA/B T/TC 173-46-17A/B TLI#42284 Instrument H



Data Review: TW
Date: 7-22-97

JAN pm 1: HS373 LAB-BASE QUAN 07-02-97 18:1[illegible]

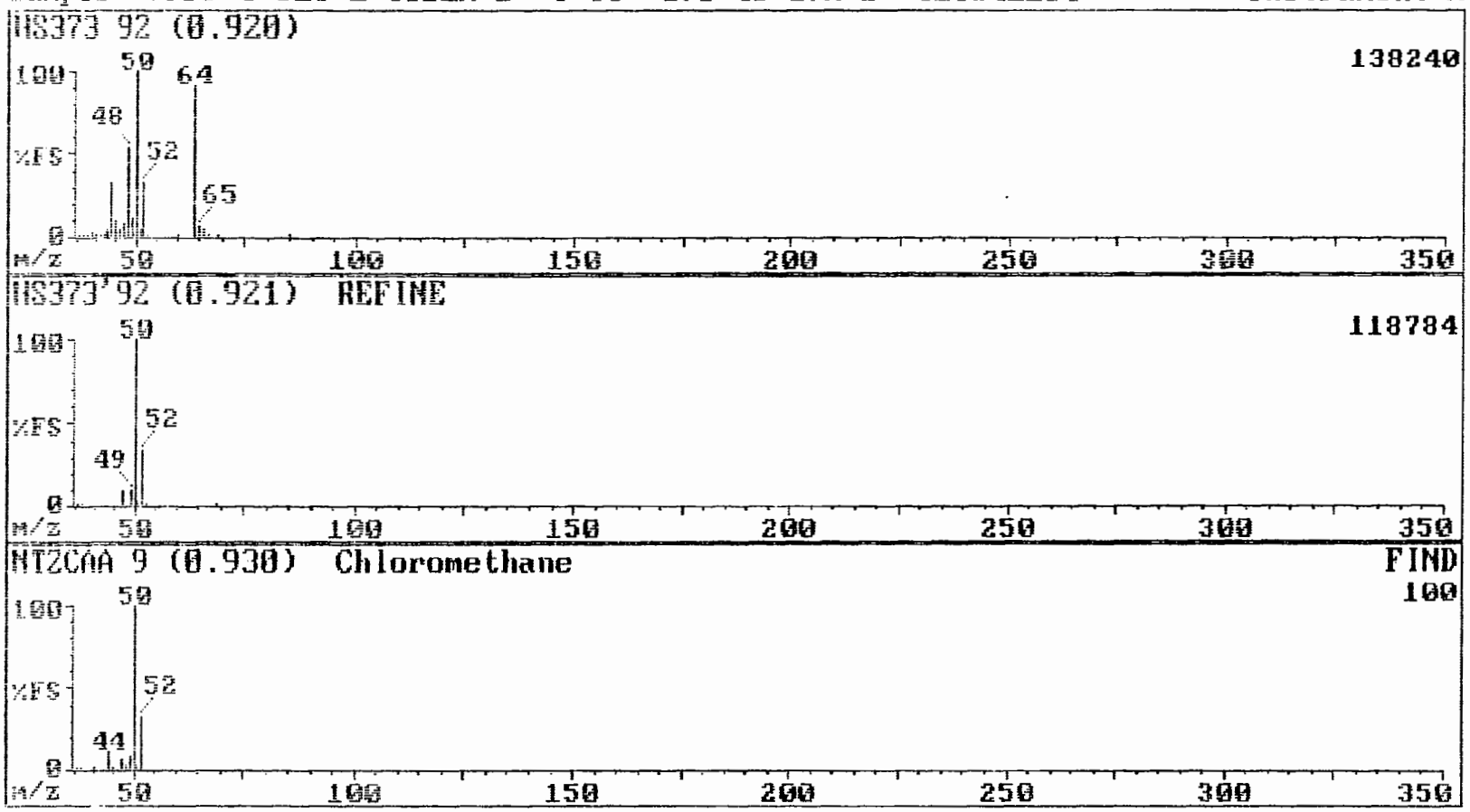
No.	MAT	FOR	REV	Delta	Area	P.Flags	RT	QM	Name
1	100	79	98	-4	355752	bb	4.47	128	Bromochloromethane
2	100	87	97	1	2047344	bb	5.62	114	1,4-Difluorobenzene
3	100	94	98	1	2703524	bv	9.74	117	Chlorobenzene-d5
4	47	17	60	2	907996	bv	5.08	65	1,2-Dichloroethane-d4
5	99	78	80	1	2615668	bv	5.06	84	Benzene-d6
6	100	87	98	1	3466653	bv	7.47	98	Toluene-d8
~~7~~	~~27~~	~~10~~	~~59~~	~~-31~~	~~32443~~	~~A~~	~~12.16~~	98	o-Xylene-d10 FP TW
8	100	84	94	1	1773349	vv	12.01	95	4-Bromofluorobenzene
9	100	79	85	0	897728	vv	0.92	50	Chloromethane
~~10~~	~~14~~	~~14~~	~~21~~	~~-23~~	~~188072~~	~~A~~	~~0.72~~	62	Vinyl Chloride FP TW
11	100	84	100	0	1578128	vv	1.08	39	1,3-Butadiene
12	86	44	93	0	49488	bv	1.41	94	Bromomethane
13	47	25	50	0	105488	A	1.53	64	Chloroethane
14	0	0	0	0	0		0.00	106	Vinyl bromide
15	65	27	80	-1	134024	bb	1.81	101	Trichlorofluoromethane
16	0	0	0	0	0		0.00	96	1,1-Dichloroethene
17	0	0	0	0	0		0.00	142	Iodomethane
18	100	82	99	-1	6684092	bv	2.47	76	Carbon disulfide
19	82	54	82	1	99365	bv	2.56	43	Acetone
~~20~~	~~66~~	~~44~~	~~64~~	~~1~~	~~18412~~	~~vb~~	~~2.80~~	76	Allyl chloride FP TW
21	100	73	90	0	1003044	bb	2.94	84	Methylene chloride
22	0	0	0	0	0		0.00	96	trans-1,2-Dichloroethene
~~23~~	~~45~~	~~33~~	~~42~~	~~3~~	~~472~~	~~bb~~	~~3.31~~	73	tert-Butyl methyl eth FP TW
24	100	83	93	0	1407788	bv	3.24	53	Acrylonitrile
25	100	97	100	-1	1873052	vv	3.53	57	n-Hexane
26	0	0	0	0	0		0.00	63	1,1-Dichloroethane
~~27~~	~~55~~	~~44~~	~~55~~	~~7~~	~~130595~~	~~bv~~	~~4.08~~	42	1,2-Epoxybutane FP TW
28	0	0	0	0	0		0.00	96	cis-1,2-Dichloroethene
29	0	0	0	0	0		0.00	83	Chloroform
30	0	0	0	0	0		0.00	62	1,2-Dichloroethane
~~31~~	~~40~~	~~55~~	~~62~~	~~29~~	~~1199092~~	~~vv~~	~~5.53~~	57	Isooctane
~~32~~	~~32~~	~~29~~	~~61~~	~~28~~	~~2540388~~	~~A~~	~~3.44~~	43	Vinyl acetate FP TW
33	66	42	65	1	8760	vv	4.36	72	2-Butanone
34	0	0	0	0	0		0.00	97	1,1,1-Trichloroethane
35	0	0	0	0	0		0.00	117	Carbon tetrachloride
36	100	94	100	1	15765910	bv	5.10	78	Benzene
37	0	0	0	0	0		0.00	130	Trichloroethene
~~38~~	~~33~~	~~29~~	~~53~~	~~-19~~	~~6963~~	~~A~~	~~5.90~~	63	1,2-Dichloropropane FP TW
~~39~~	~~40~~	~~36~~	~~65~~	~~13~~	~~377600~~	~~bb~~	~~6.04~~	55	Ethyl acrylate
40	100	92	98	1	432988	vb	6.45	69	Methyl methacrylate
41	0	0	0	0	0		0.00	83	Bromodichloromethane
42	0	0	0	0	0		0.00	75	cis-1,3-Dichloropropene
43	0	0	0	0	0		0.00	75	trans-1,3-Dichloropropen
44	0	0	0	0	0		0.00	97	1,1,2-Trichloroethane
45	0	0	0	0	0		0.00	129	Dibromochloromethane
46	0	0	0	0	0		0.00	107	Ethylene dibromide
47	0	0	0	0	0		0.00	173	Bromoform
~~48~~	~~34~~	~~28~~	~~76~~	~~-19~~	~~198198~~	~~vv~~	~~7.26~~	43	4-Methyl-2-pentanone FP TW
49	100	95	99	1	4967556	bv	7.56	92	Toluene
50	0	0	0	0	0		0.00	164	Tetrachloroethene

Data Review: TW
Date: 7-22-97

No.	MAT	FOR	REV	Delta	Area	P.Flags	RT	QM	Name
~~51~~	~~34~~	~~13~~	~~55~~	~~0~~	~~30160~~	~~p~~	~~8.62~~	43	2-Hexanone FPTW
52	60	24	74	0	117316	bb	9.78	112	Chlorobenzene
53	100	83	98	0	444294	bv	10.07	106	Ethylbenzene
54	100	83	93	-1	1474808	vv	10.30	106	m-/p-Xylene
55	100	80	87	1	595528	bv	11.01	106	o-Xylene
56	100	89	96	1	2864632	bv	11.06	104	Styrene
~~57~~	~~26~~	~~4~~	~~43~~	~~0~~	~~4720~~	~~p~~	~~12.43~~	83	1,1,2,2-Tetrachloro FPTW
58	57	29	66	1	162125	bv	11.79	105	Cumene

07-09-97 16:44 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 2 TUBEA/B T/TC 173-46-17A/B TLI#42284 Instrument H



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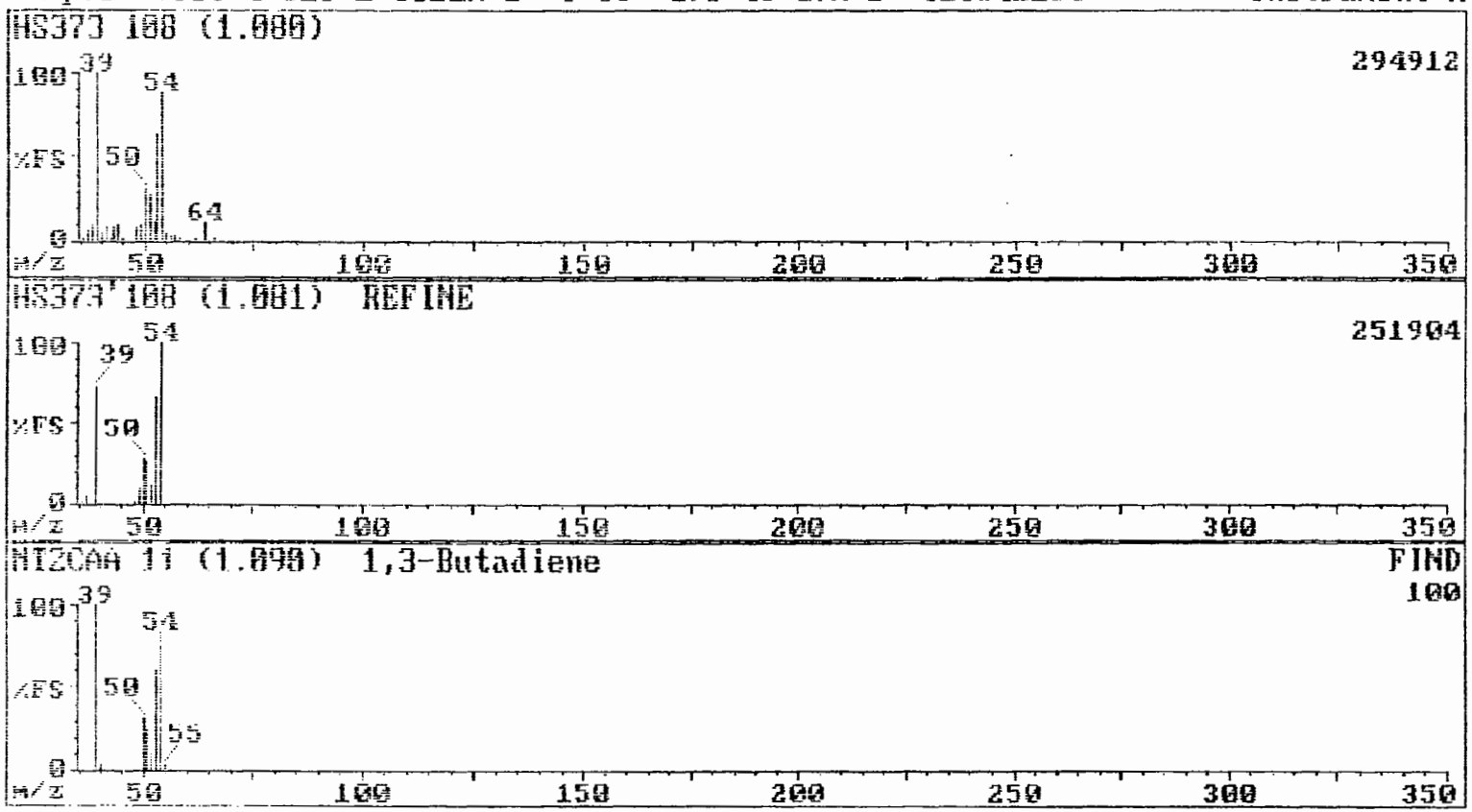

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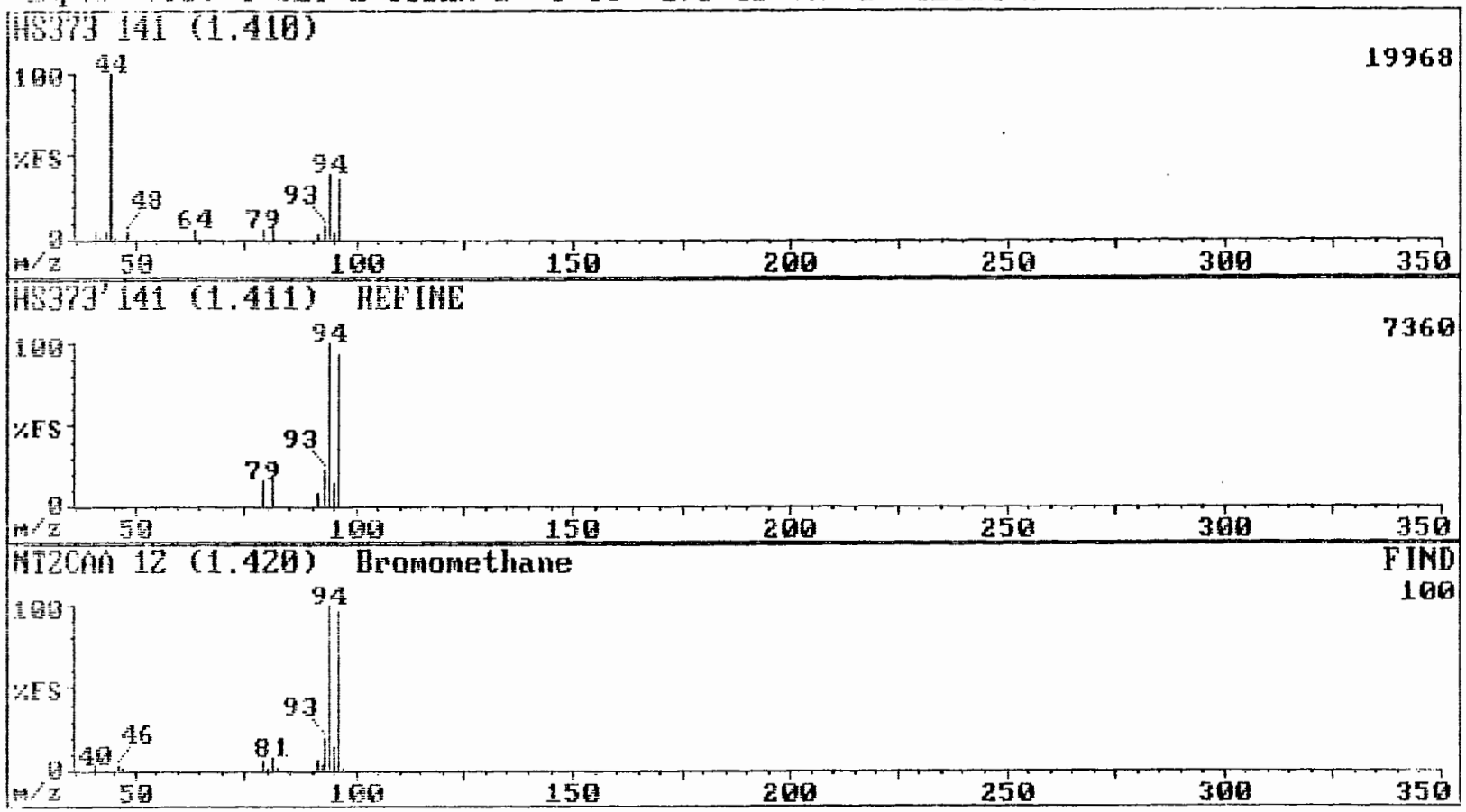

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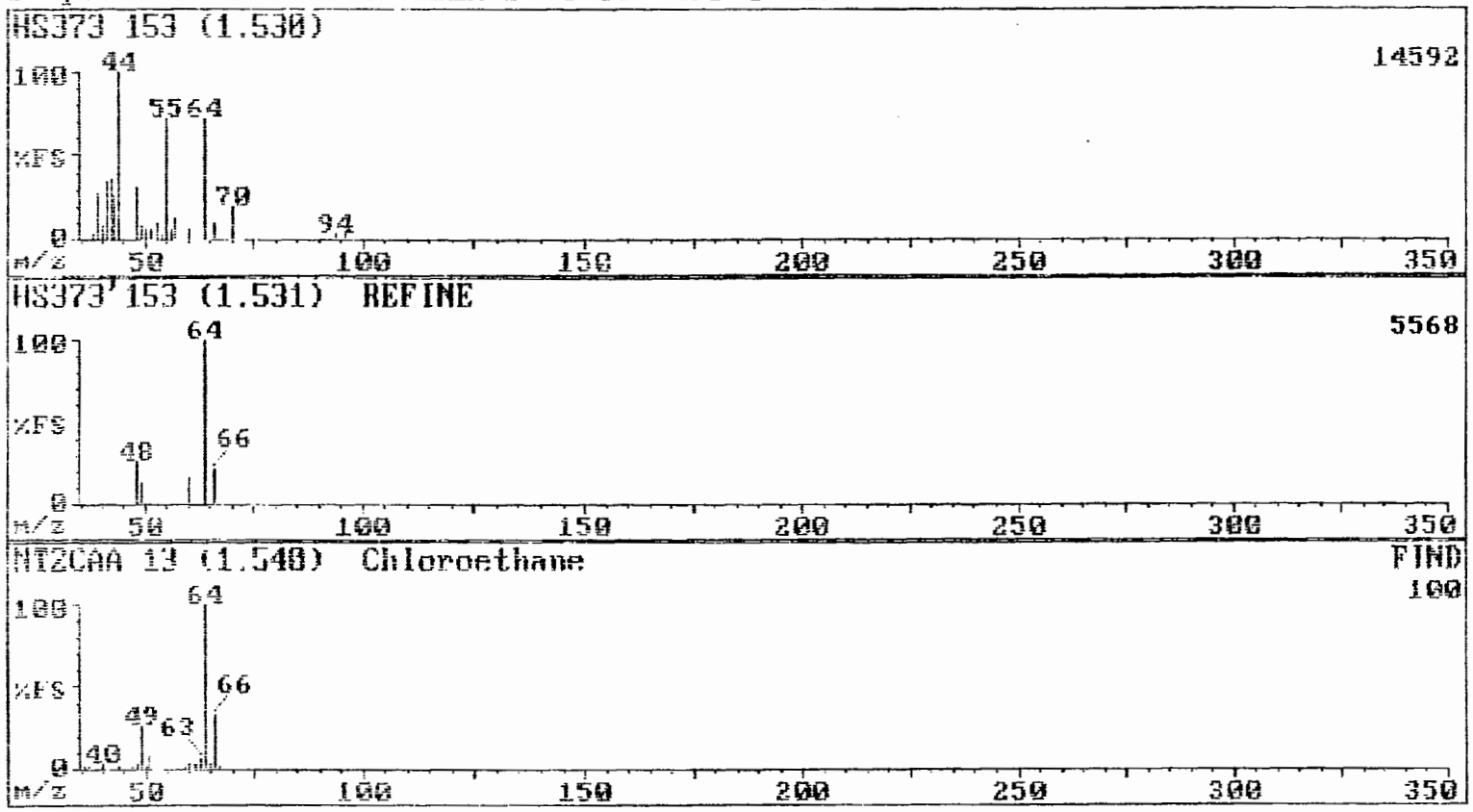

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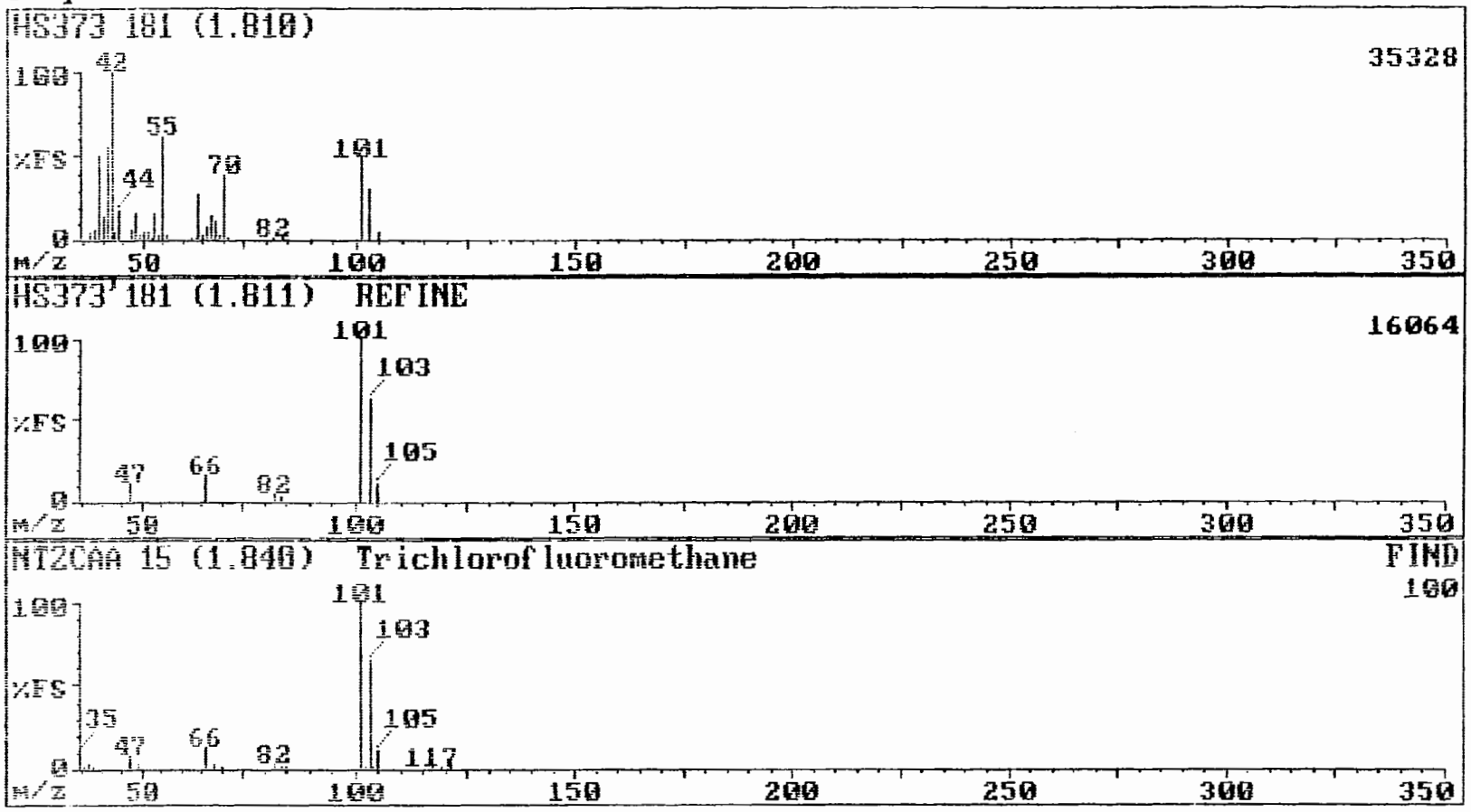

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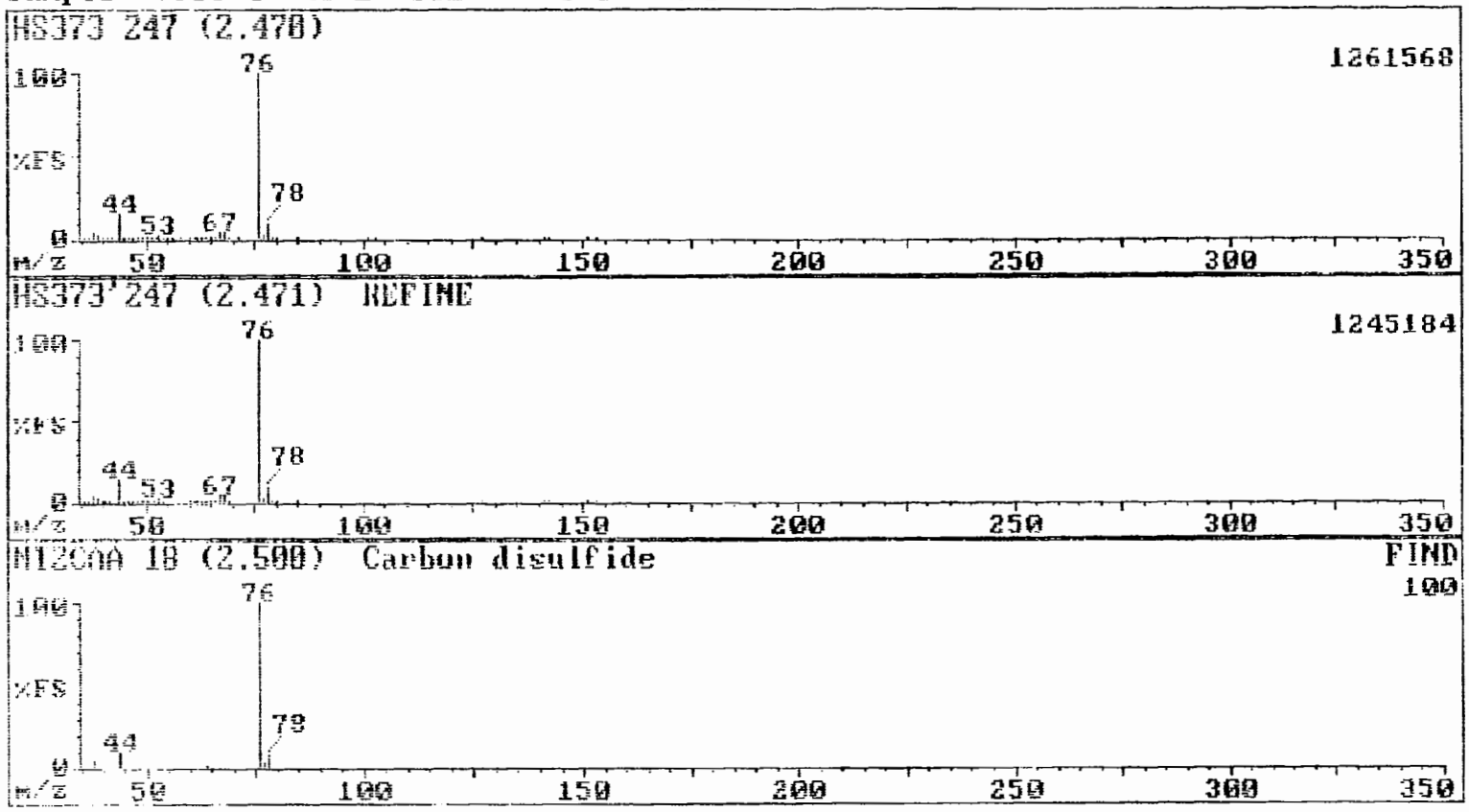

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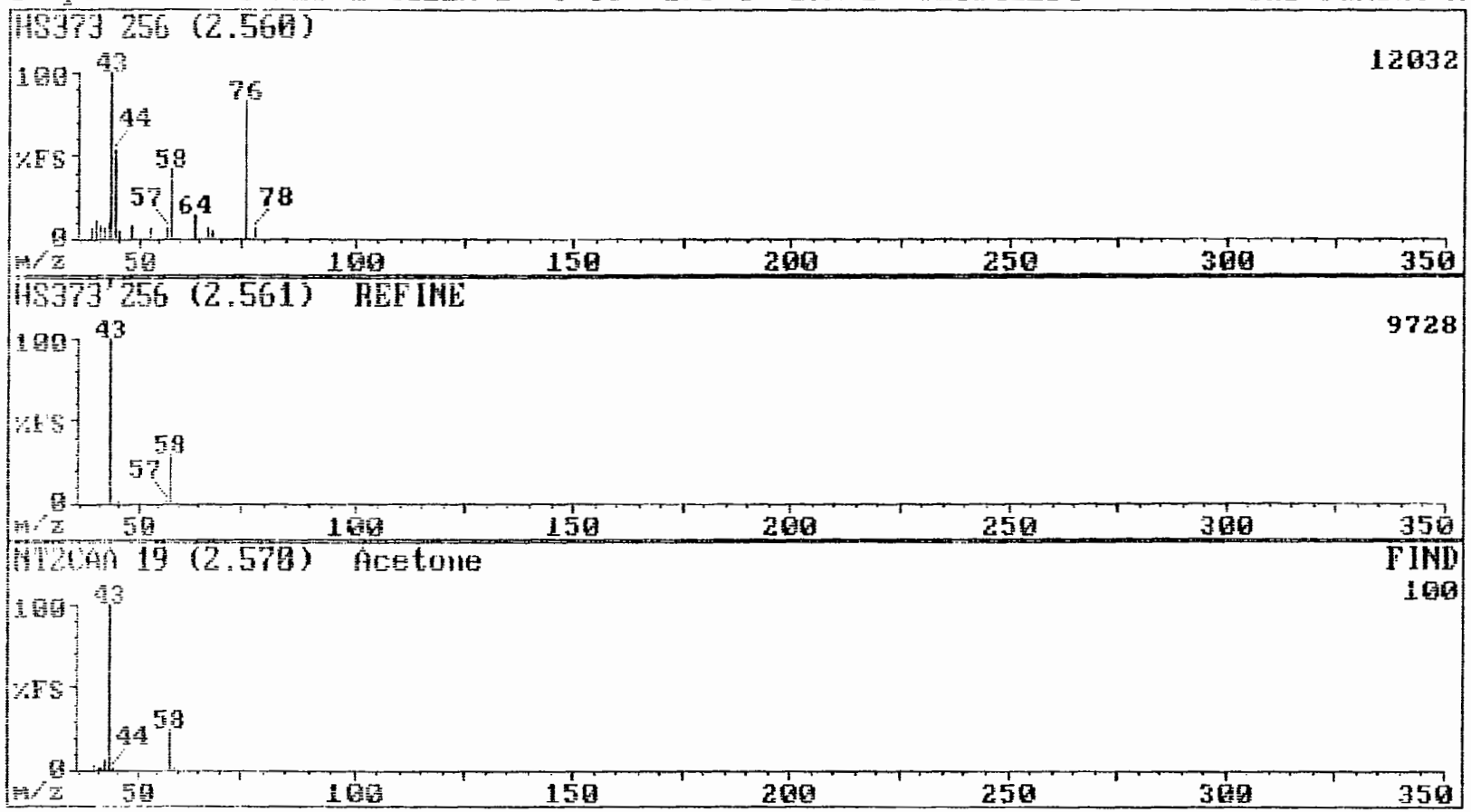
Sample: VOST-4 SET 2 TUBEA/B T/TC 173-46-17A/B TLI#42284 Instrument H



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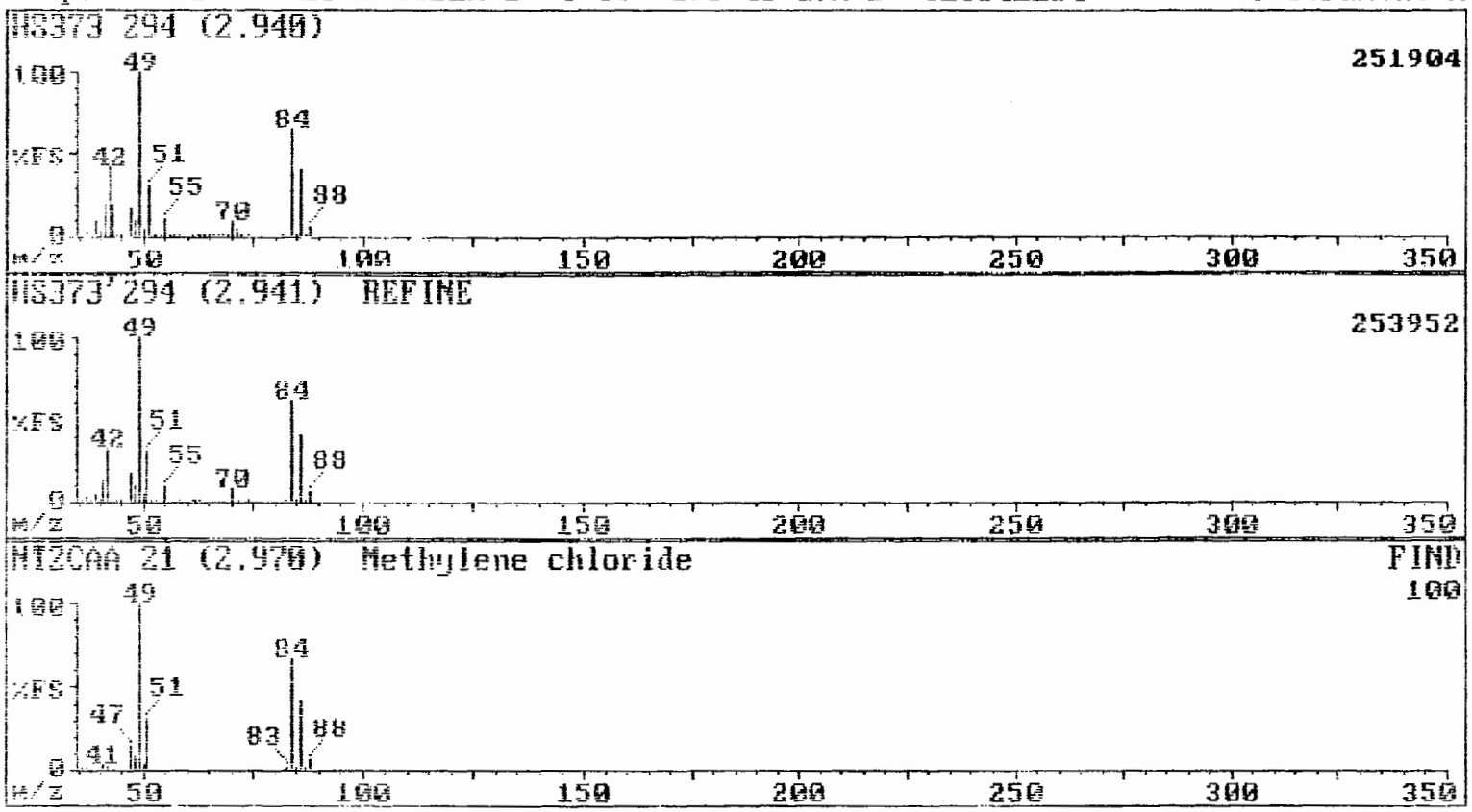

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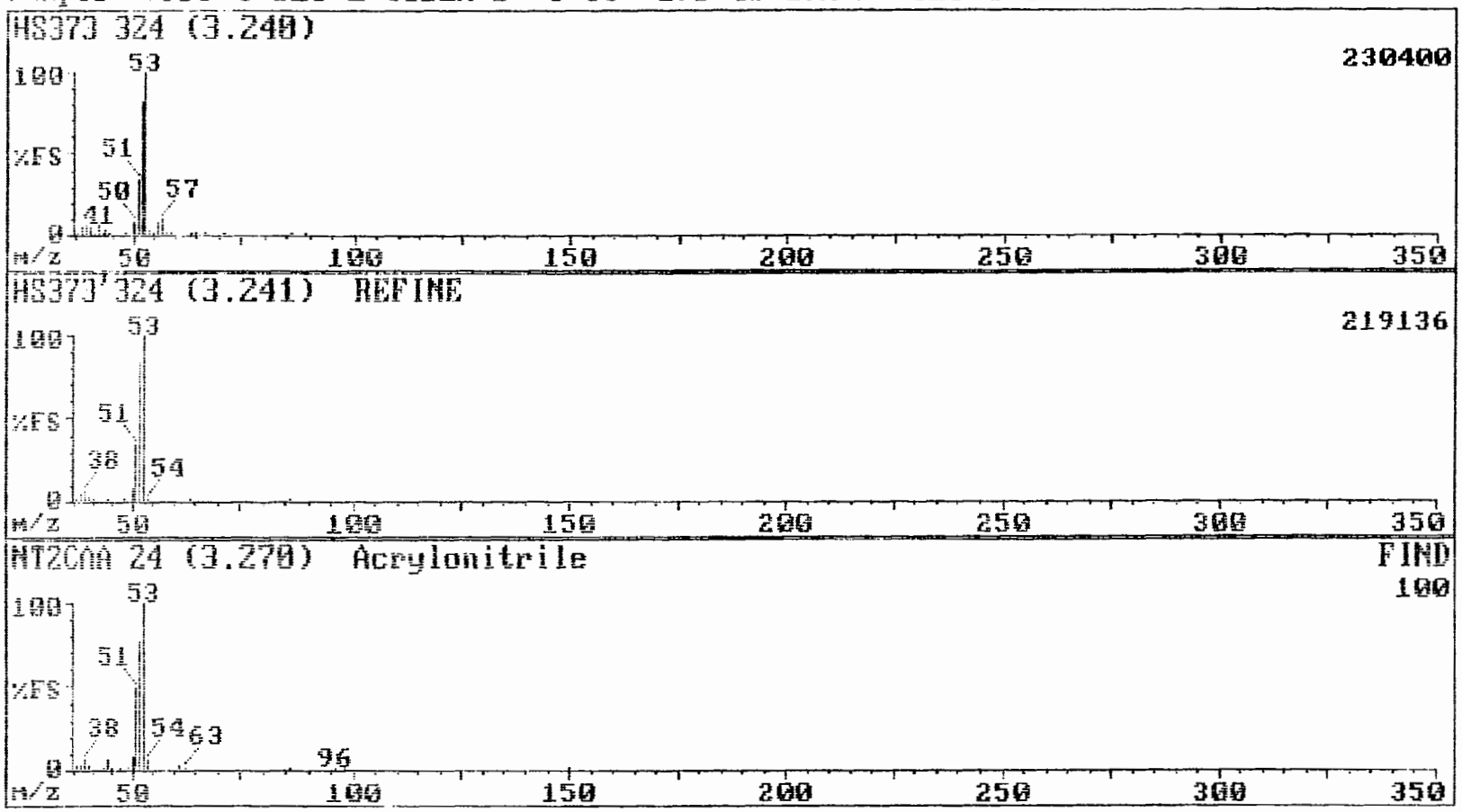

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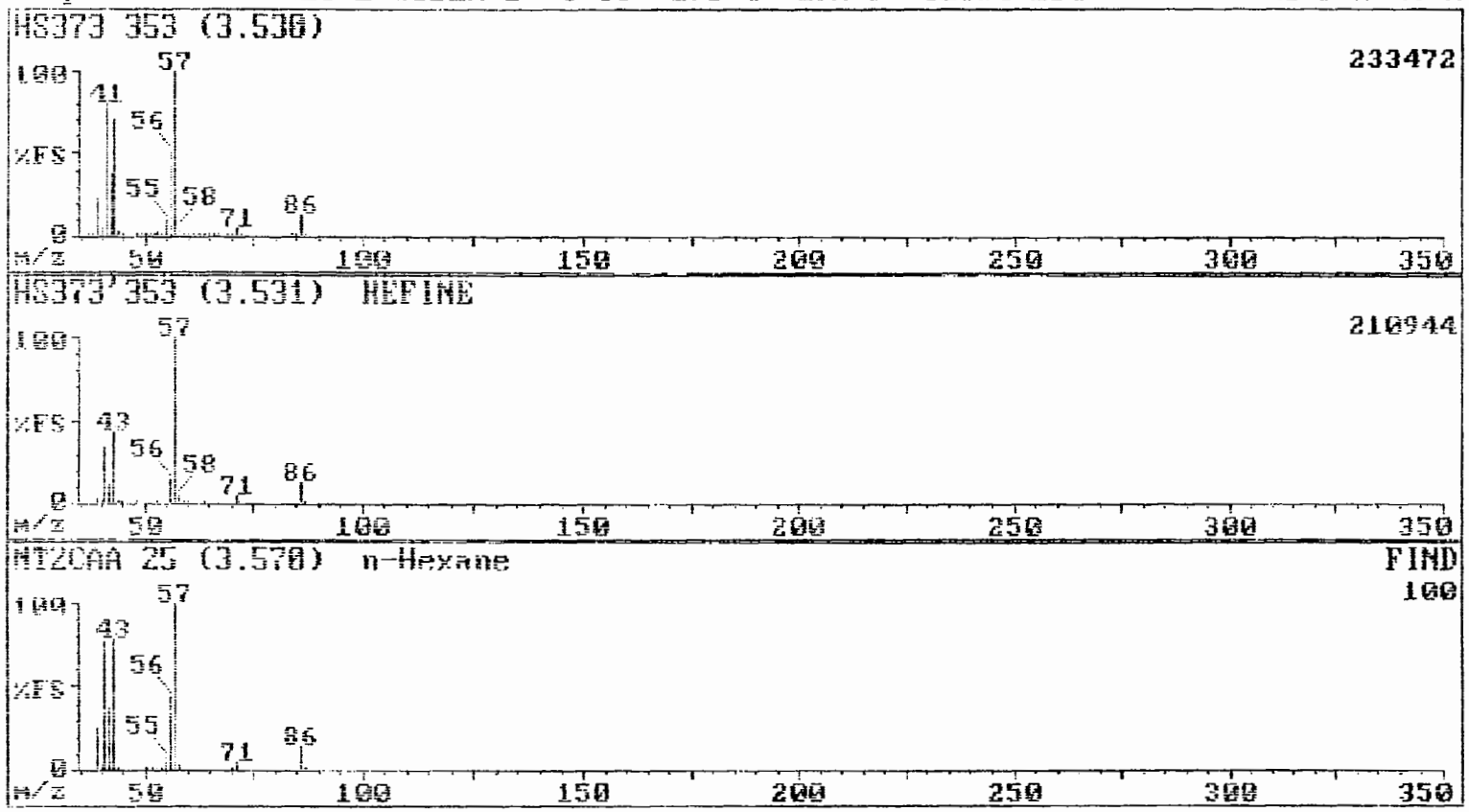

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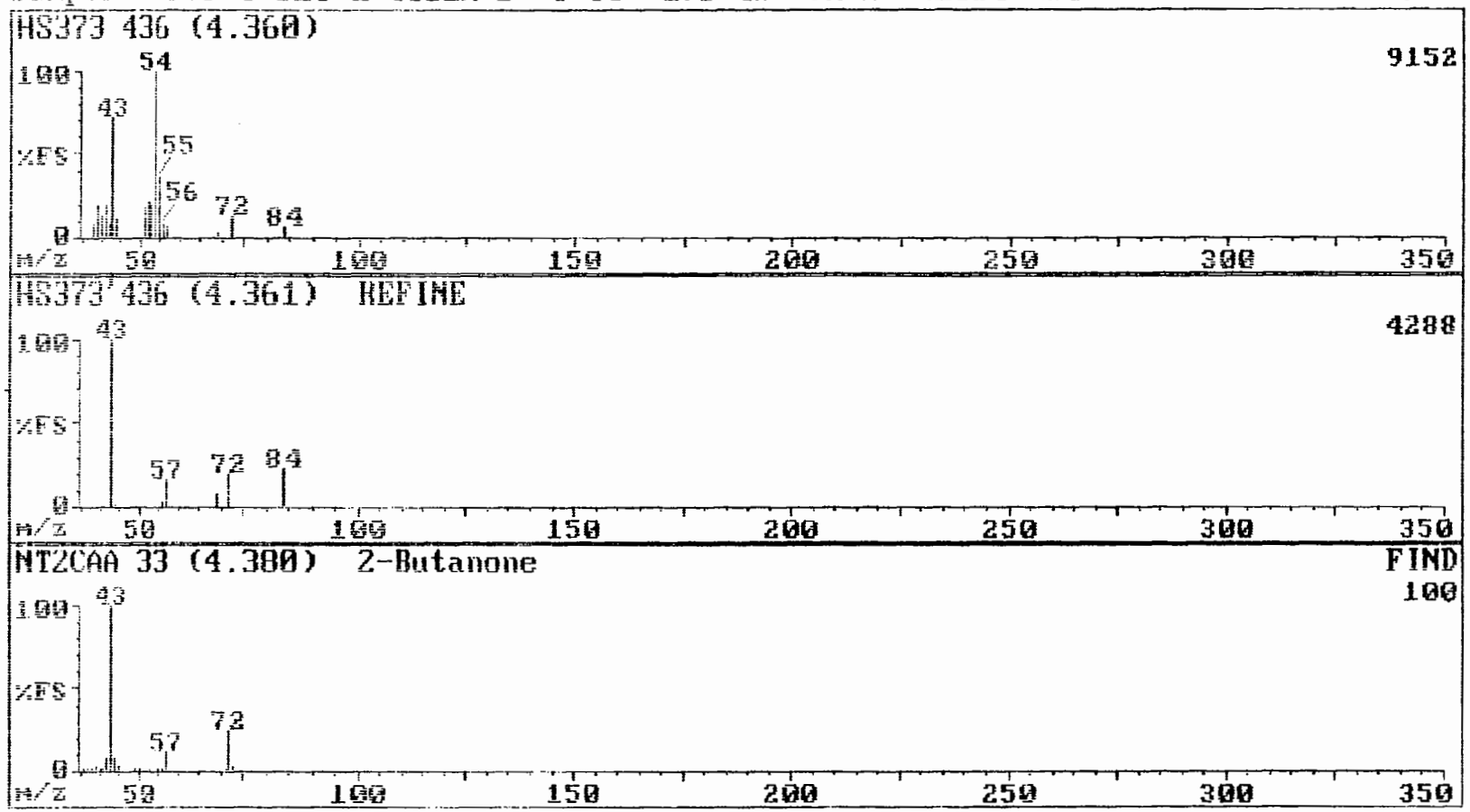
Sample: VOST-4 SET 2 TUBEA/B T/TC 173-46-17A/B TLI#42284 Instrument H



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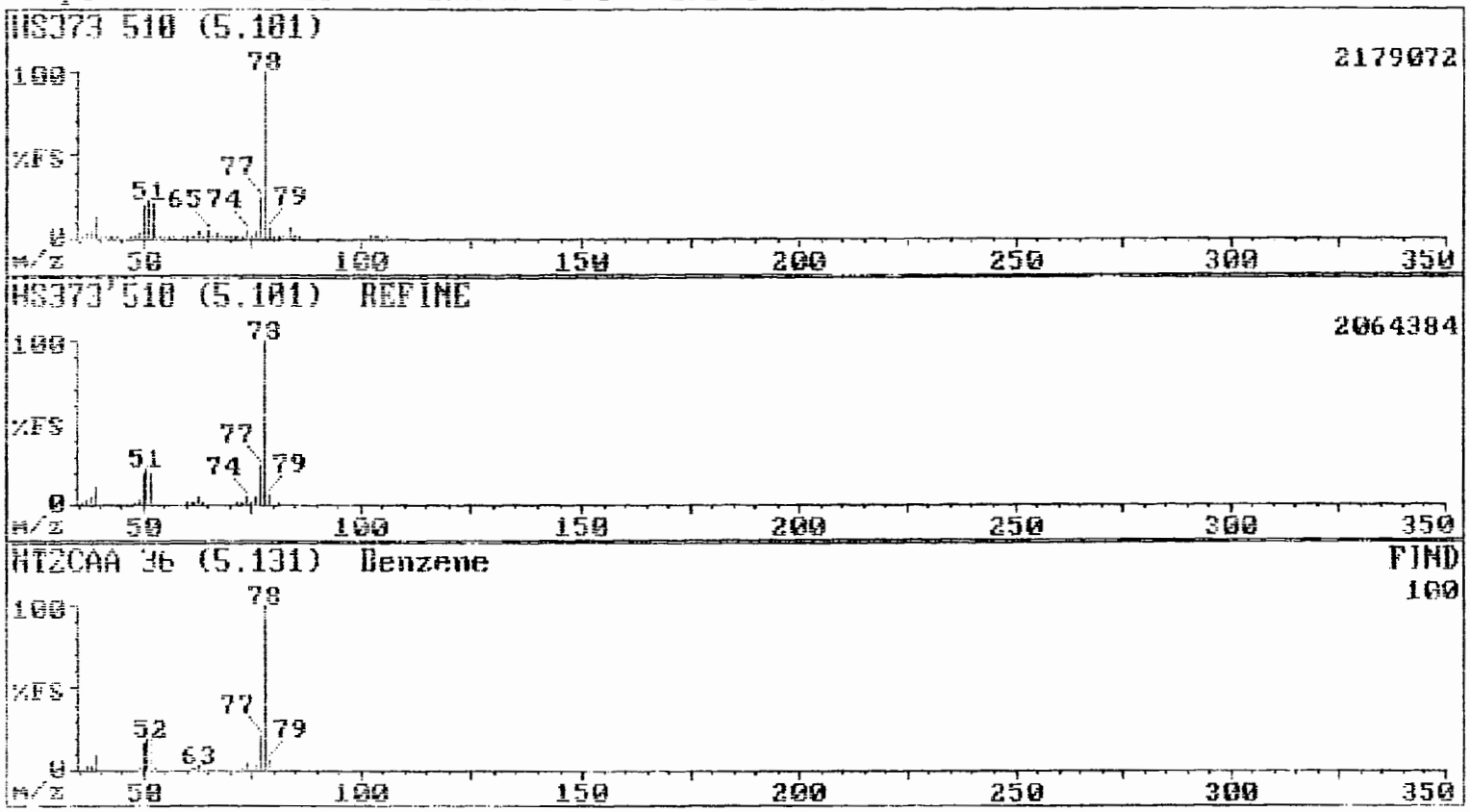
Sample: VOST-4 SET 2 TUBEA/B T/TC 173-46-17A/B TLI#42284 Instrument H



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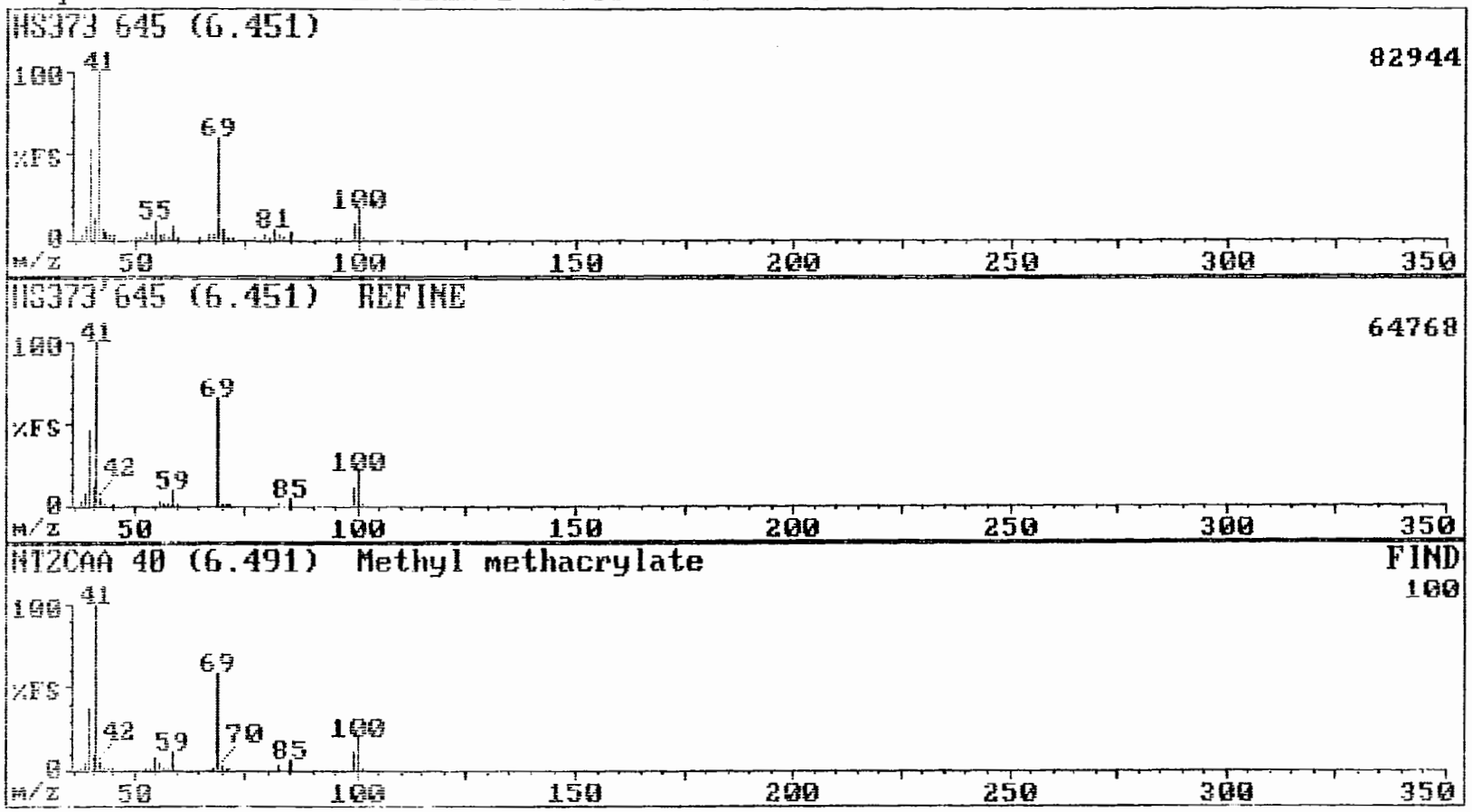
Sample: VOST-4 SET 2 TUBEA/B T/TC 173-46-17A/B TLI#42284 Instrument H



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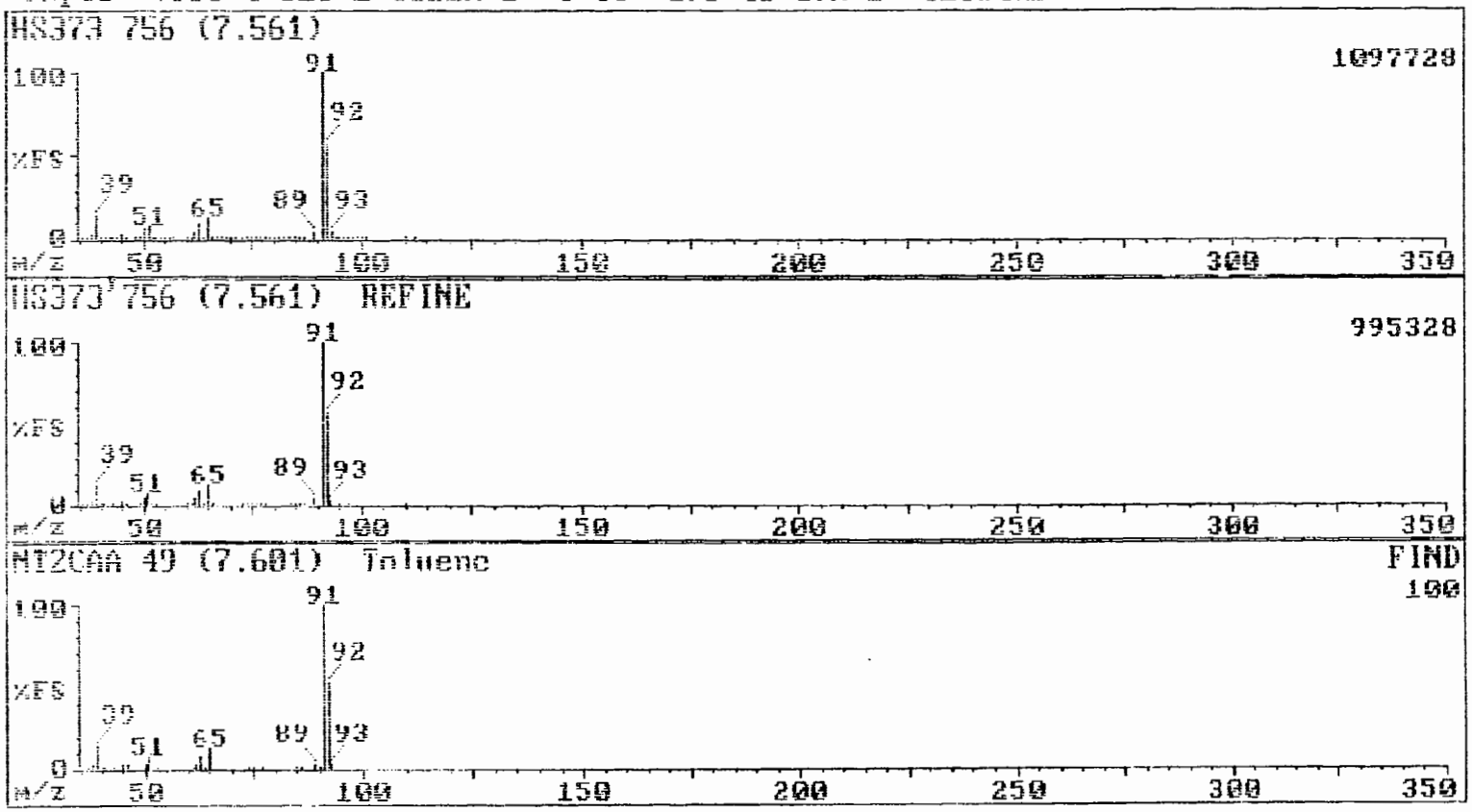
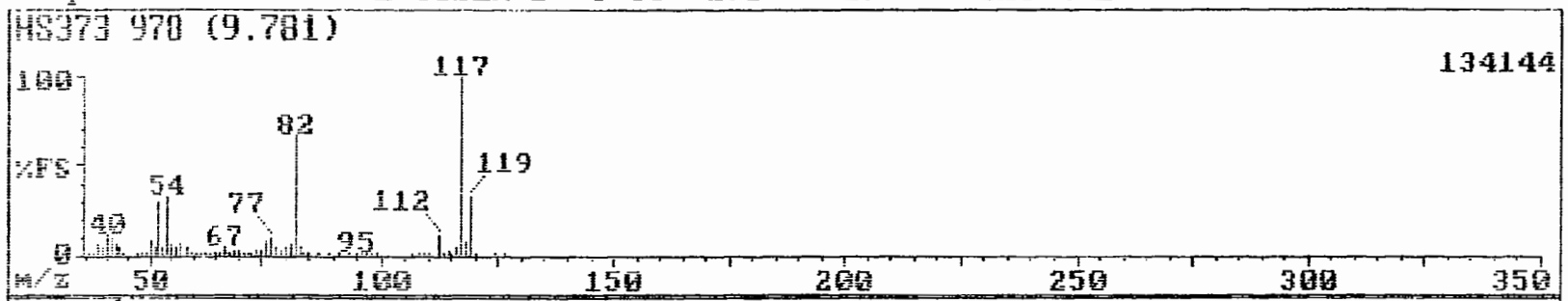
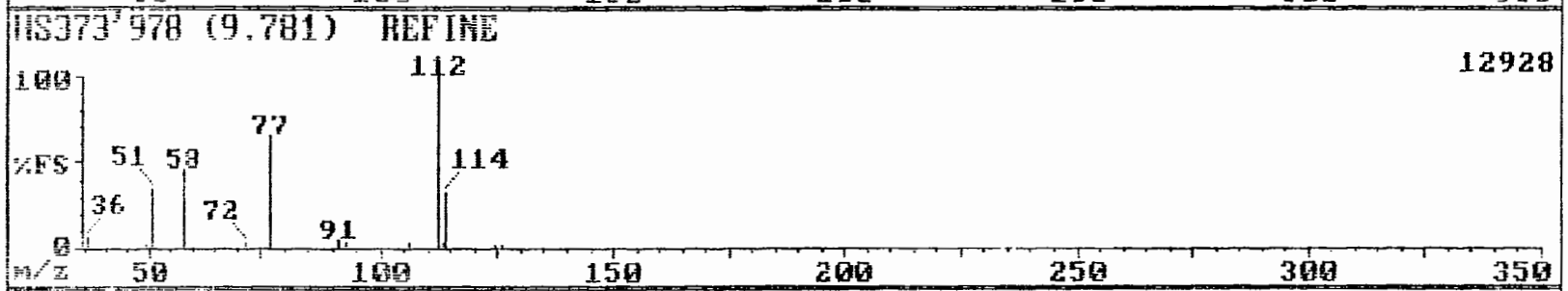
Sample: VOST-4 SET 2 TUBEA/B T/TC 173-46-17A/B TLI#42284 Instrument H

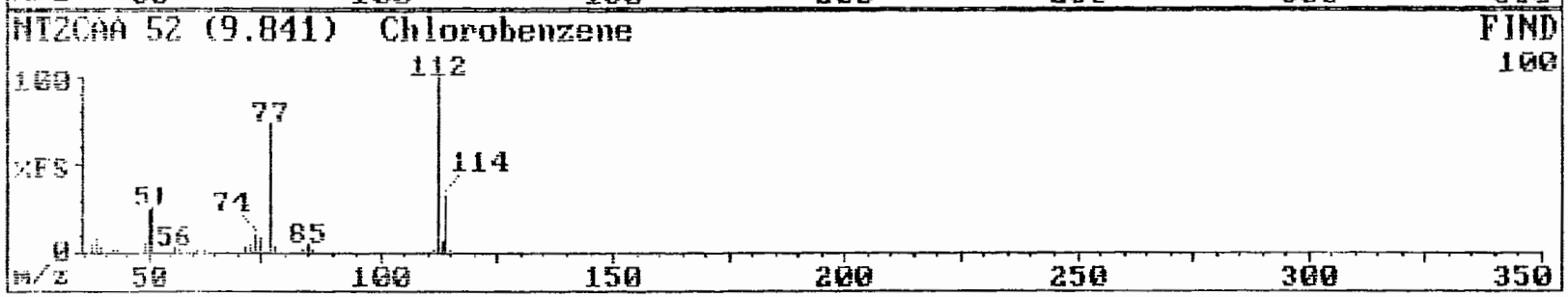


07-09-97 16:44 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 2 TUBEA/B T/TC 173-46-17A/B TLI#42204 Instrument H

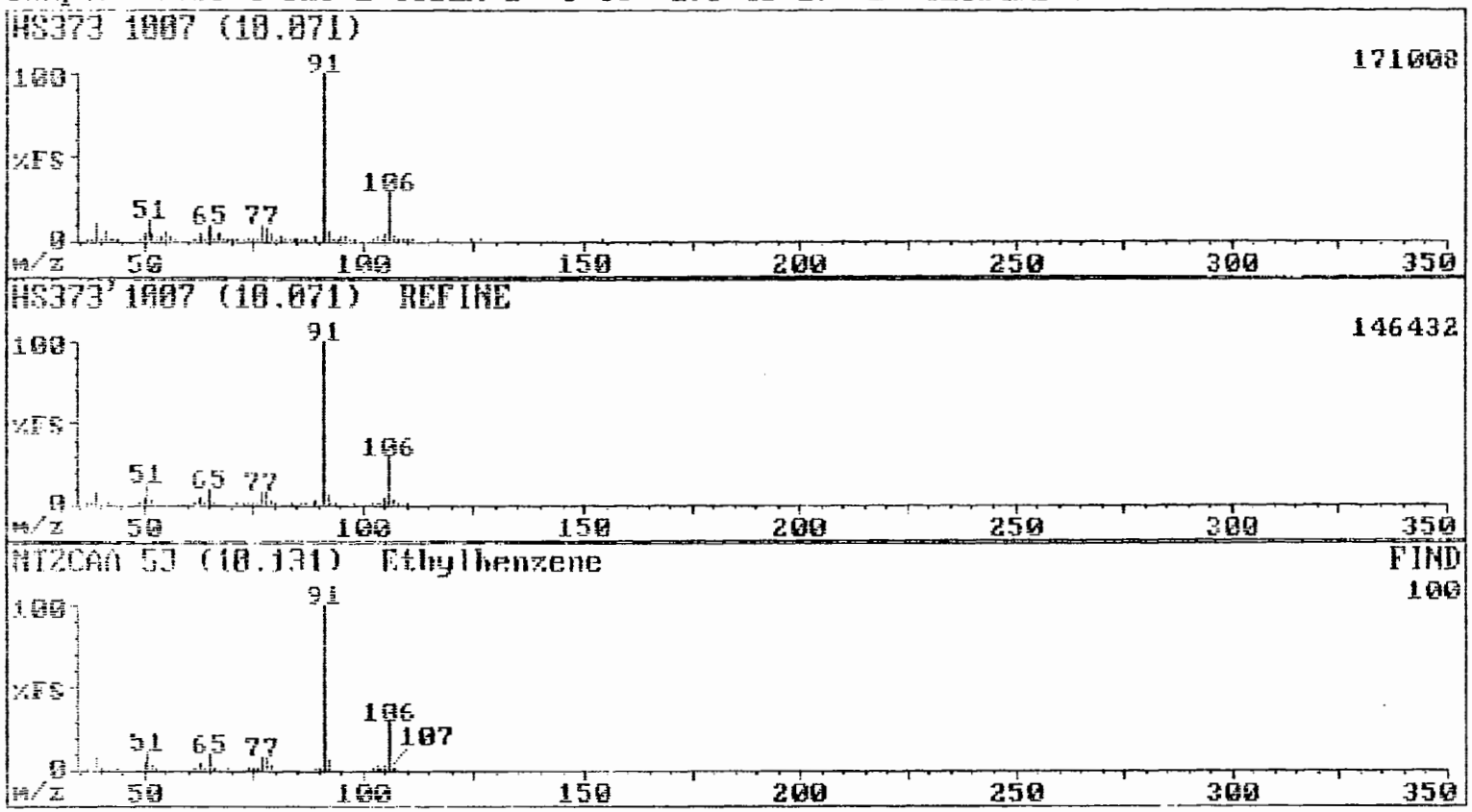






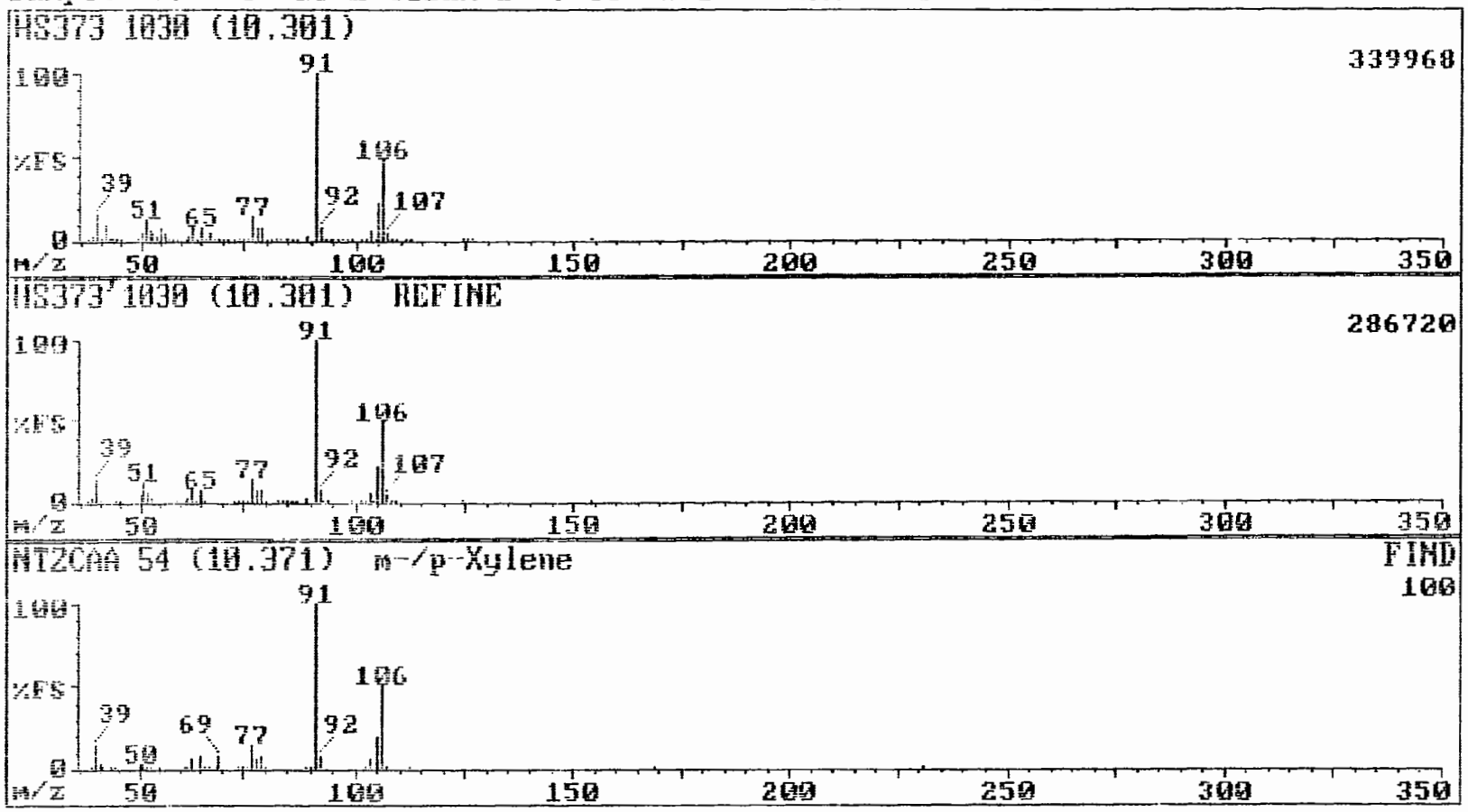
07-09-97 16:44 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 2 TUBEA/B T/TC 173-46-17A/B TLI#42284 Instrument H



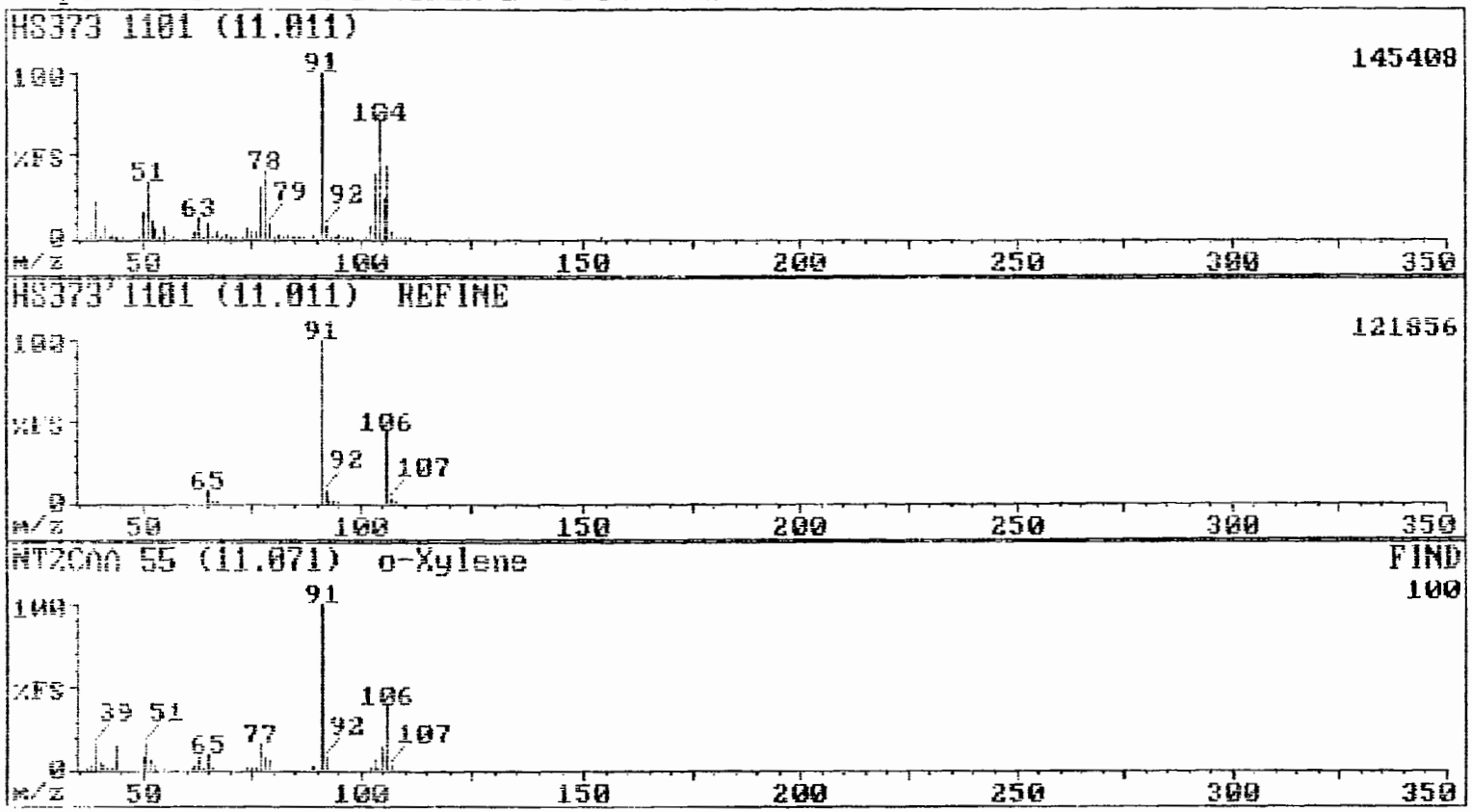
07-09-97 16:44 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 2 TUBEA/B T/TC 173-46-17A/B TLI#42284 Instrument H



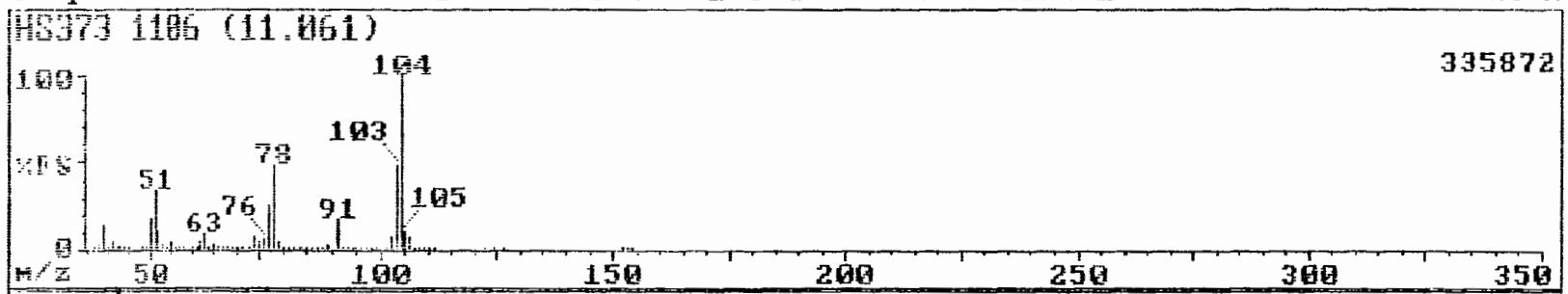
07-09-97 16:44 Triangle Laboratories of RTP, Inc. (919) 544-5729

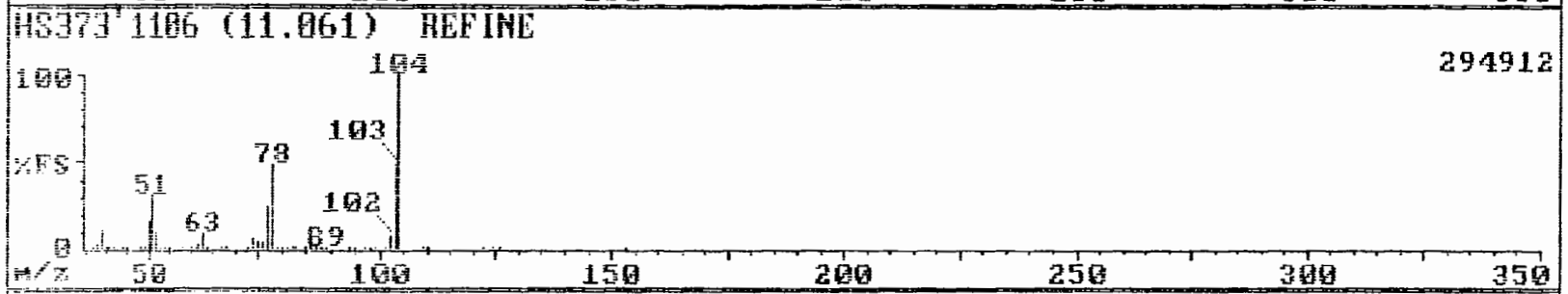
Sample: VOST-4 SET 2 TUBEA/B T/TC 173-46-17A/B TLI#42284 Instrument H

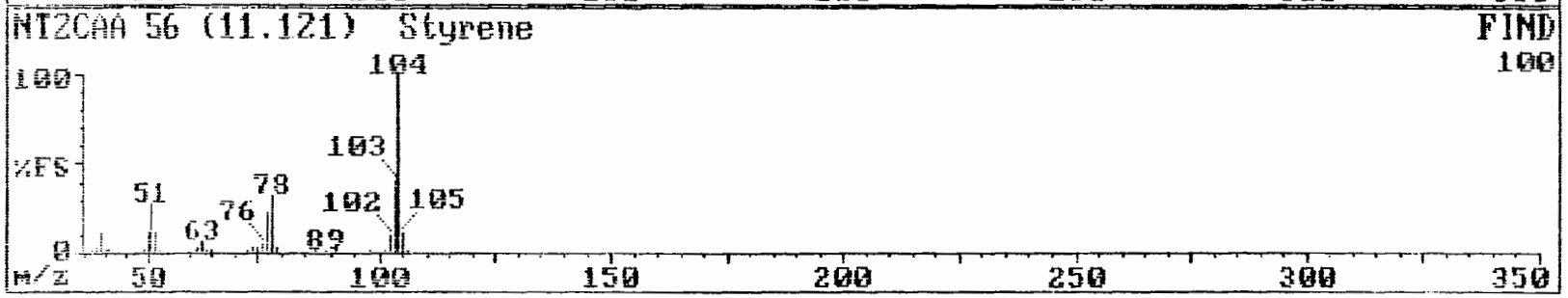


07-09-97 16:44 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 2 TUBEA/B T/TC 173-46-17A/B TLI#42284 Instrument H

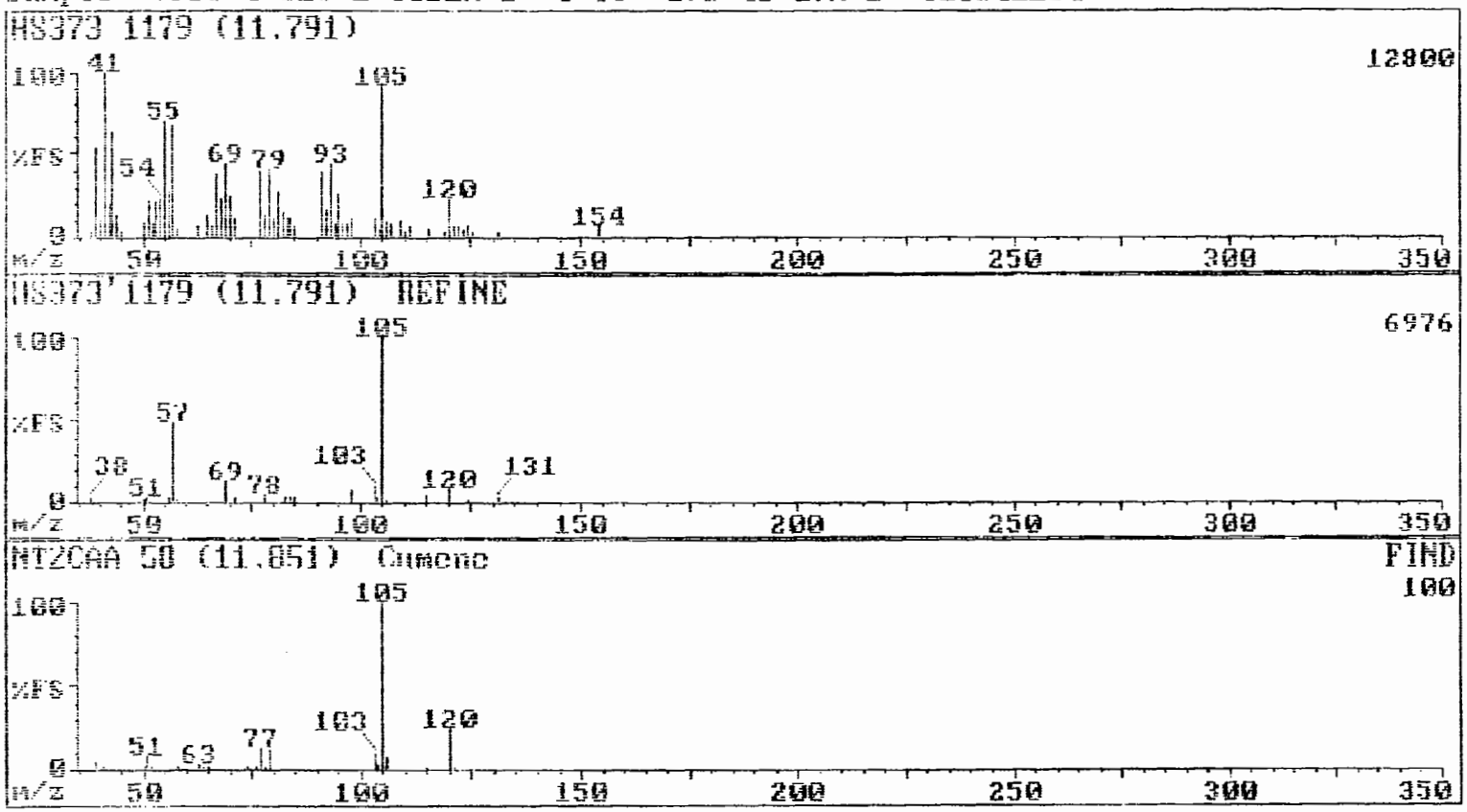






07-09-97 16:44 Triangle Laboratories of RTP, Inc. (919) 544-5729

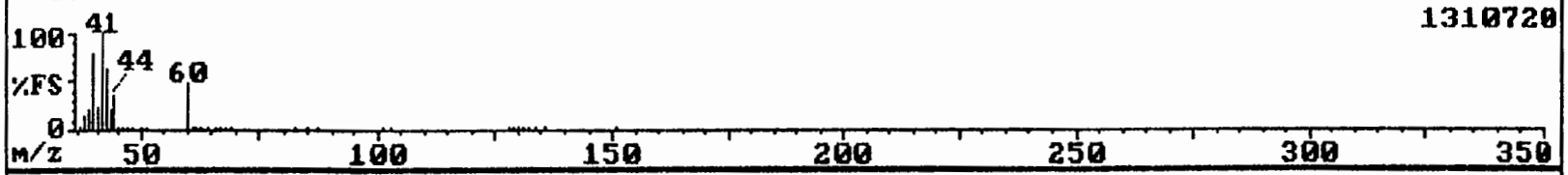
Sample: VOST-4 SET 2 TUBEA/B T/TC 173-46-17A/B TLI#42284 Instrument H



09-Jul-97 16:44 Triangle Laboratories of RTP, Inc. (919) 544-5729

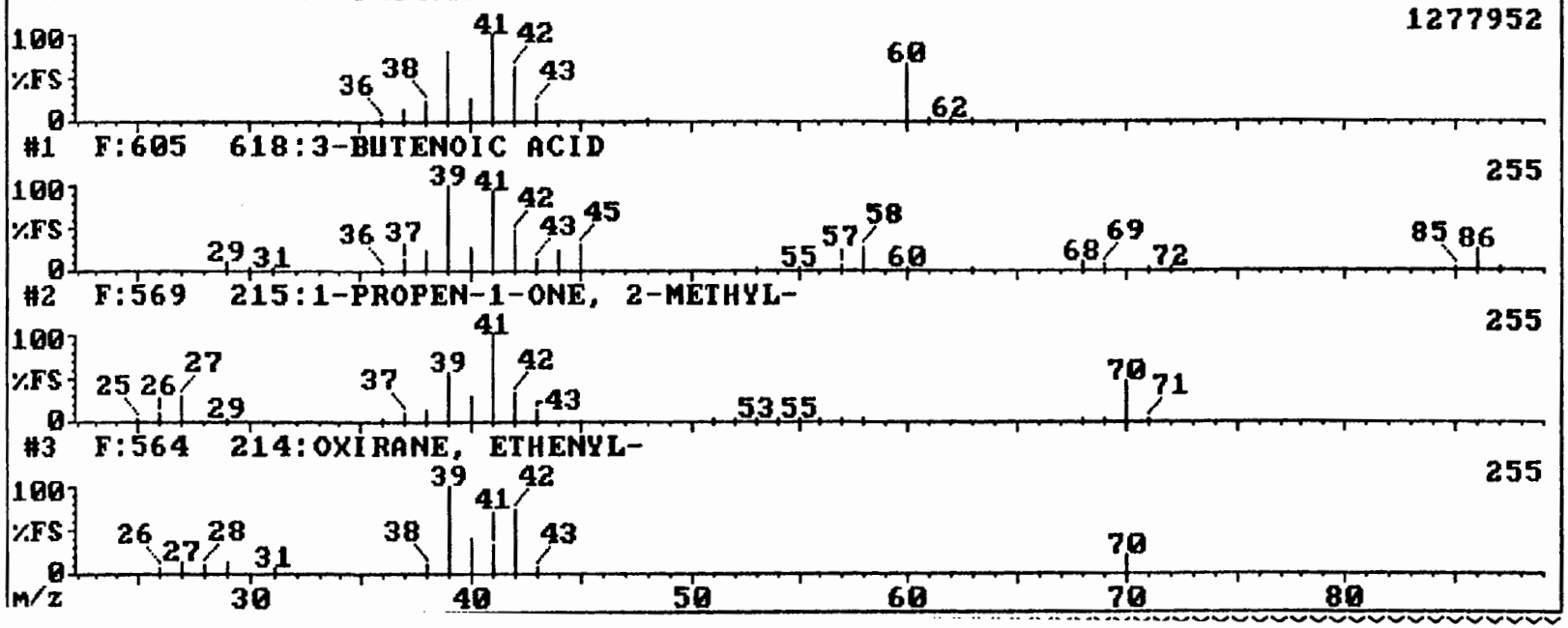
Sample: VOST-4 SET 2 TUBEA/B T/TC 173-46-17A/B TLI#42284 Instrument H

HS373 71 (0.710) 1310720



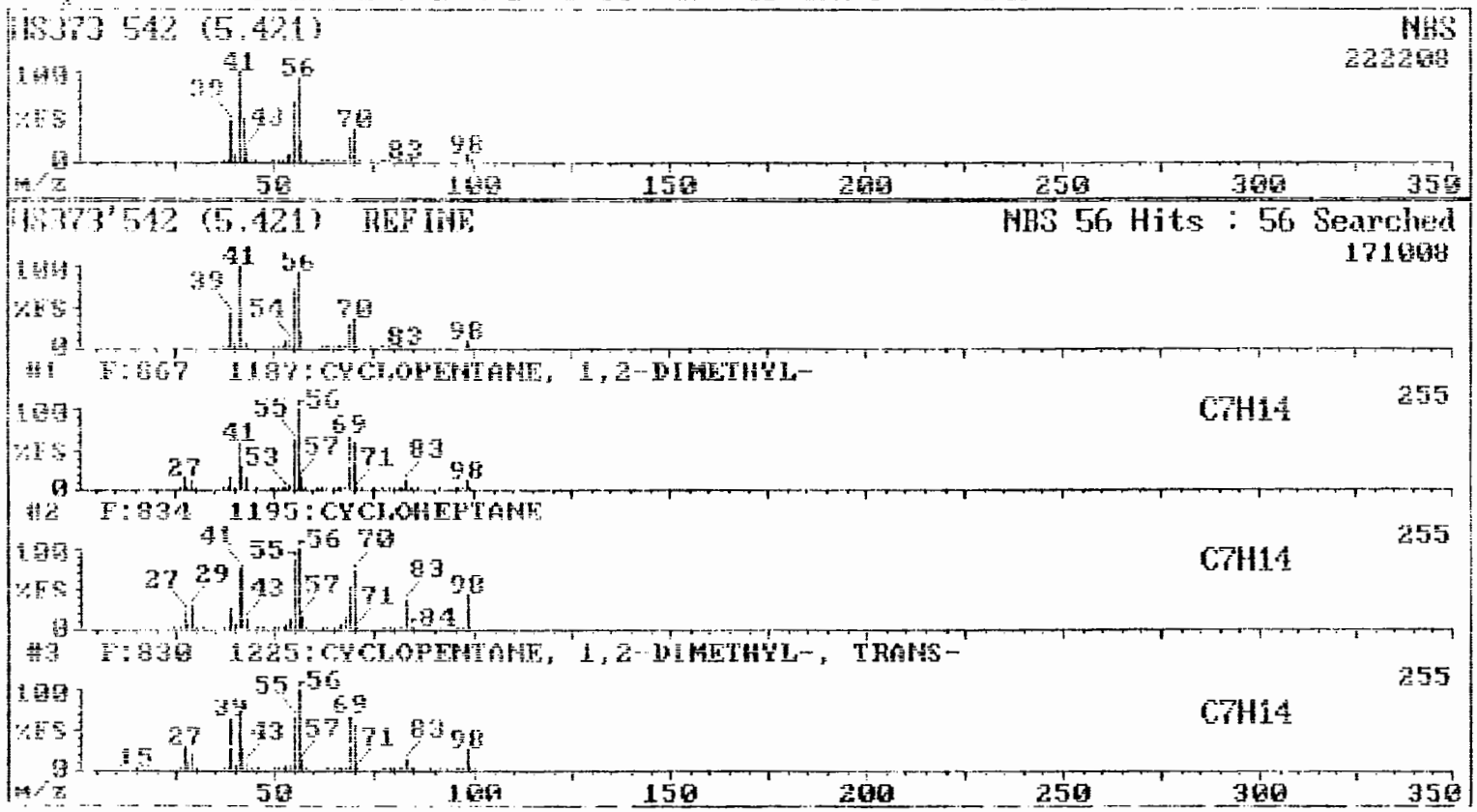
HS373'71 (0.711) REFINE NBS 67 Hits : 67 Searched

1277952



07/09/97 16:44 Triangle Laboratories of RTP, Inc. (919) 544-5729

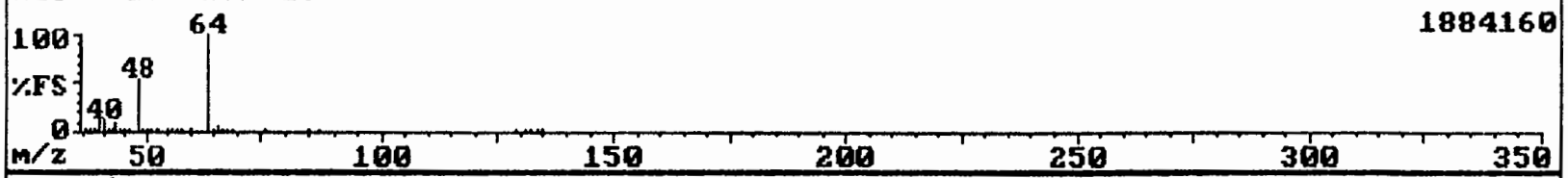
Sample: VOST-4 SET 2 TUBE0/B I/TC 173-46-170/B TLI#42204 Instrument: H



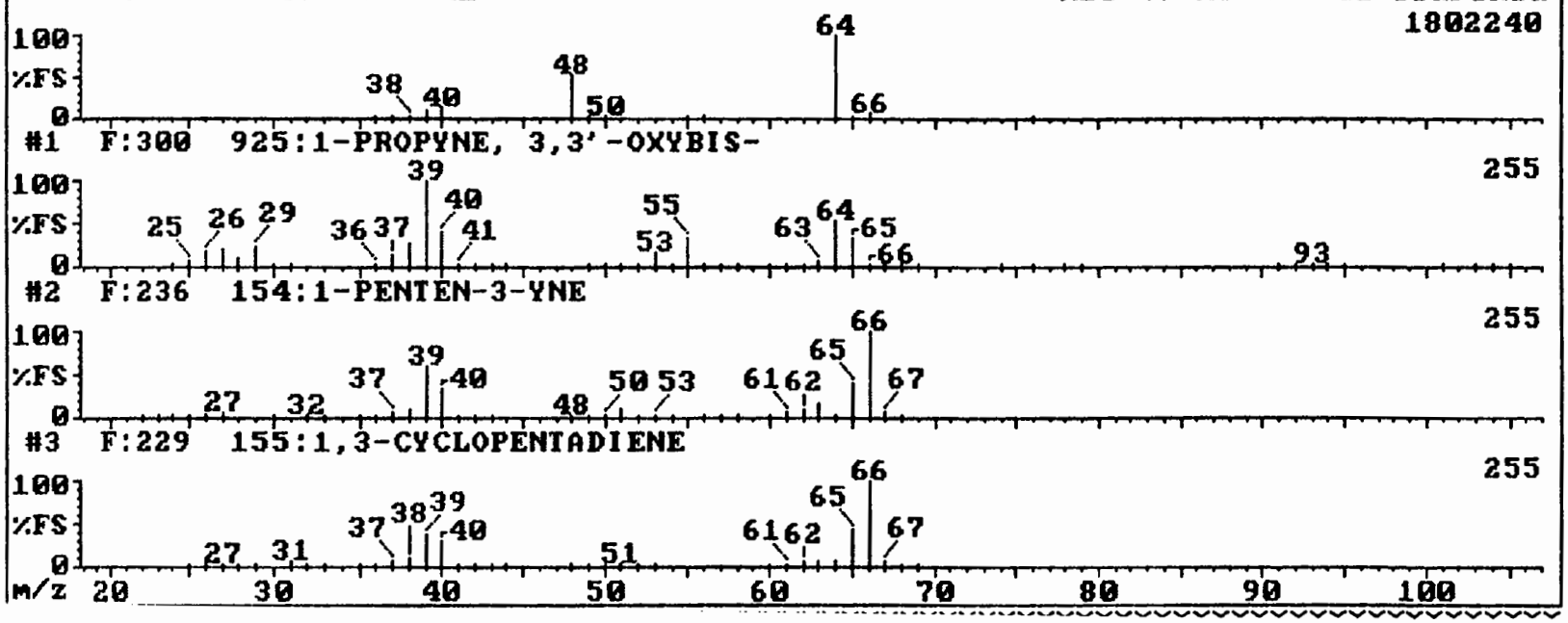
09-Jul-97 16:44 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 2 TUBEA/B T/TC 173-46-17A/B TLI#42284 Instrument H

HS373 84 (0.840)



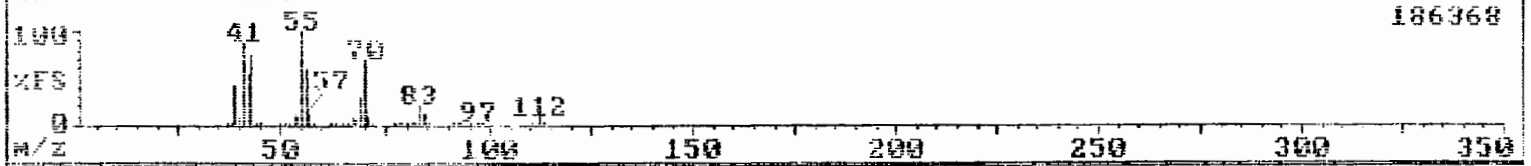
HS373'84 (0.841) REFINE NBS 41 Hits : 41 Searched



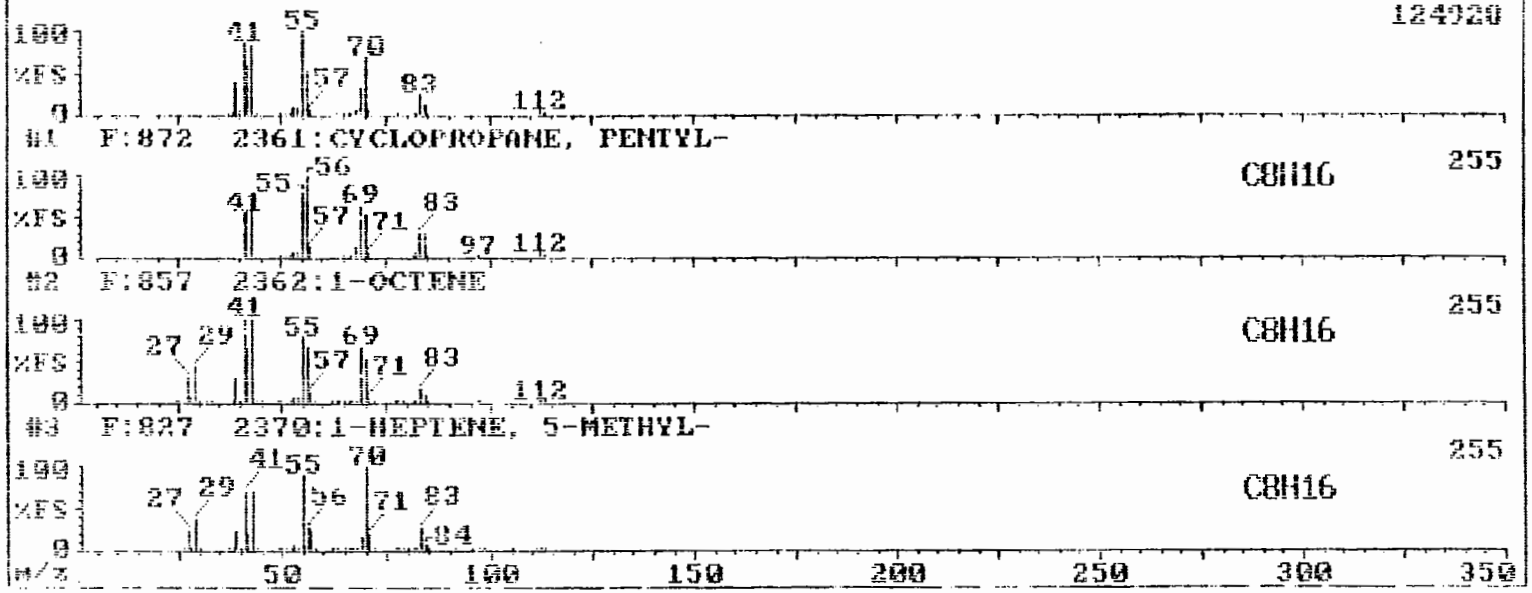
07/09/97 16:44 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST 4 SET 2 TUBEA/B T/TC 173-46-17A/B TL1#42284 Instrument: H

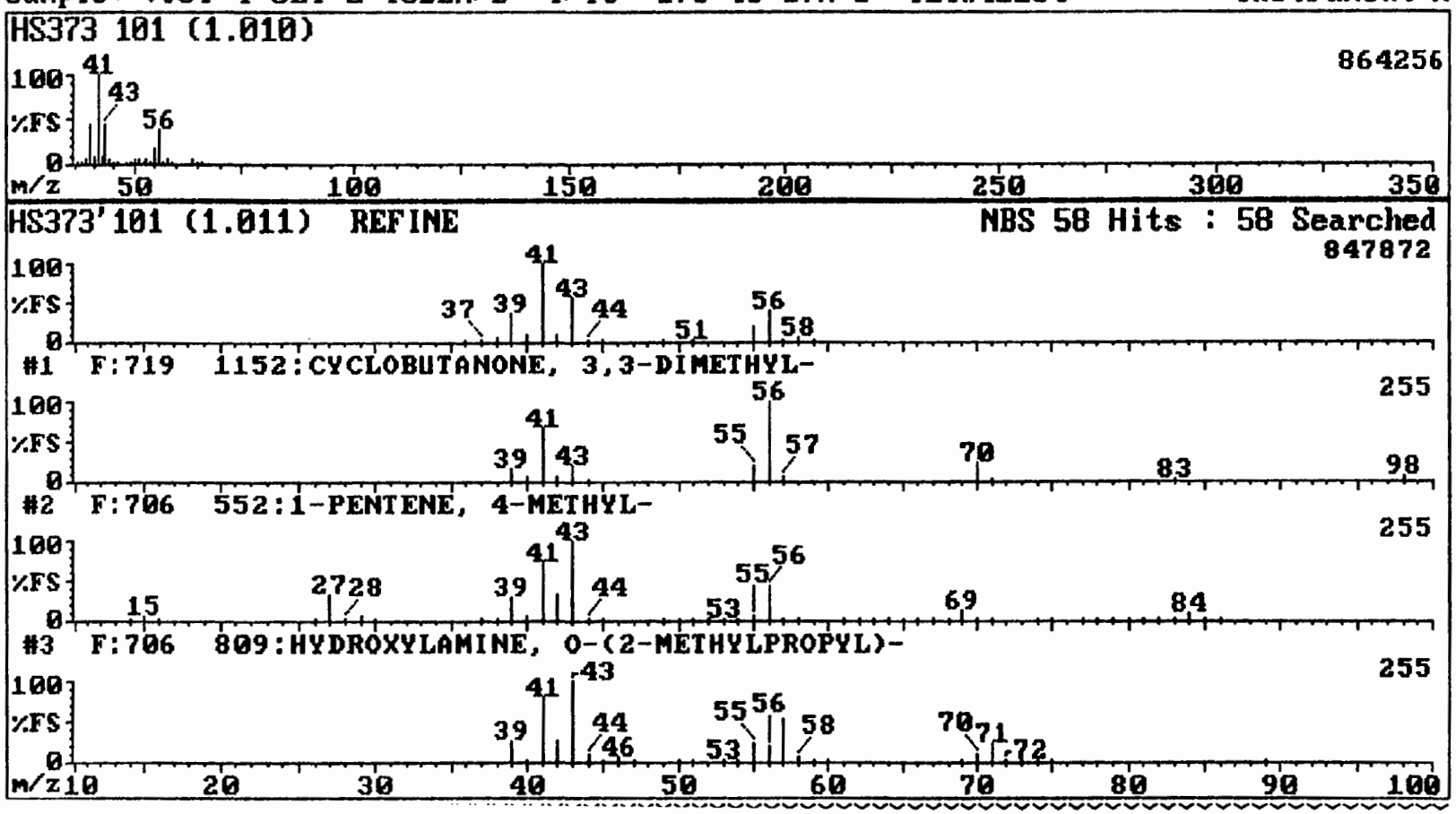
MS373 779 (7.791) NBS 186368



MS373'779 (7.791) REFINE NBS 112 Hits : 112 Searched 124920



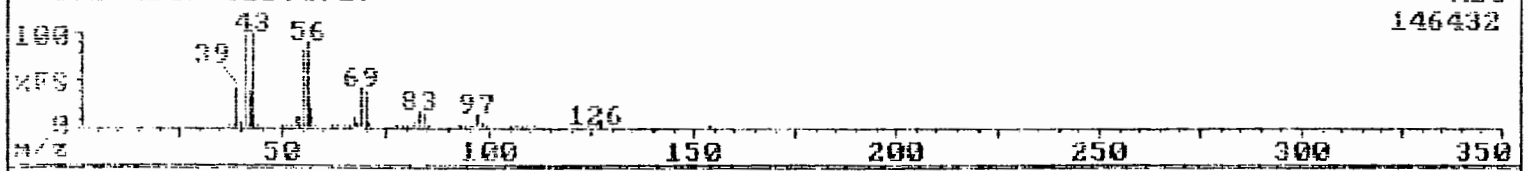
09-Jul-97 16:44 Triangle Laboratories of RTP, Inc. (919) 544-5729
Sample: VOST-4 SET 2 TUBEA/B T/TC 173-46-17A/B TLI#42284 Instrument H



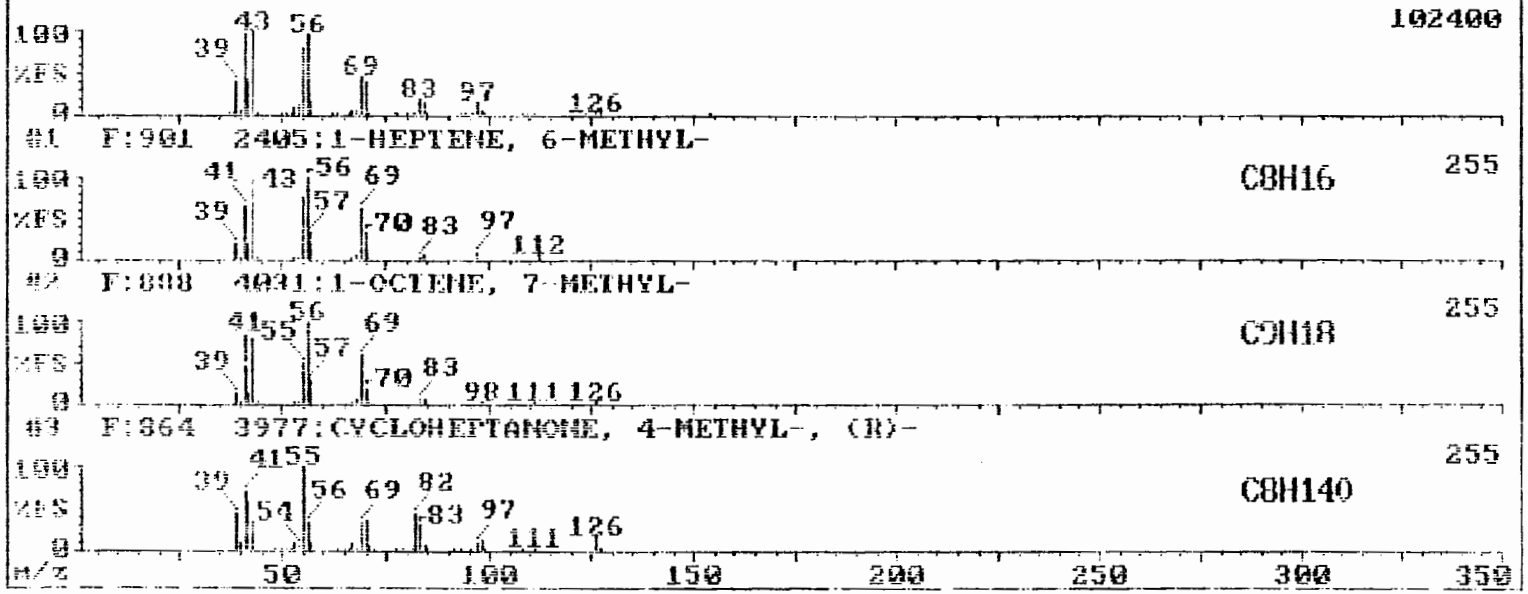
07/09/97 16:44 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 2 TUBEA/B T/TC 173-46-17A/B TL1H42284 Instrument: H

HS373 1047 (10.471) NBS 146432



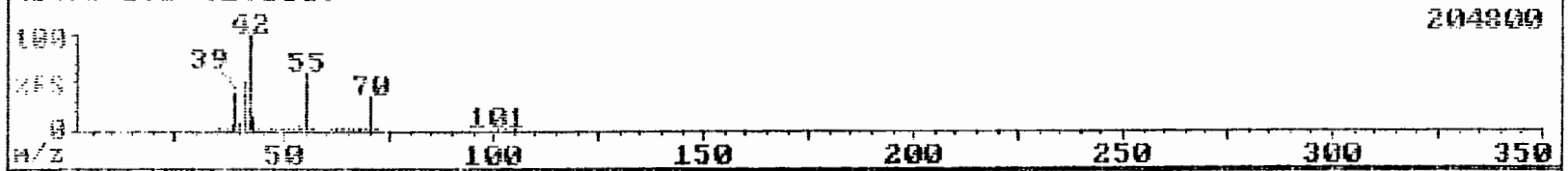
HS373 1047 (10.471) REFINE NBS 83 Hits : 83 Searched 102400



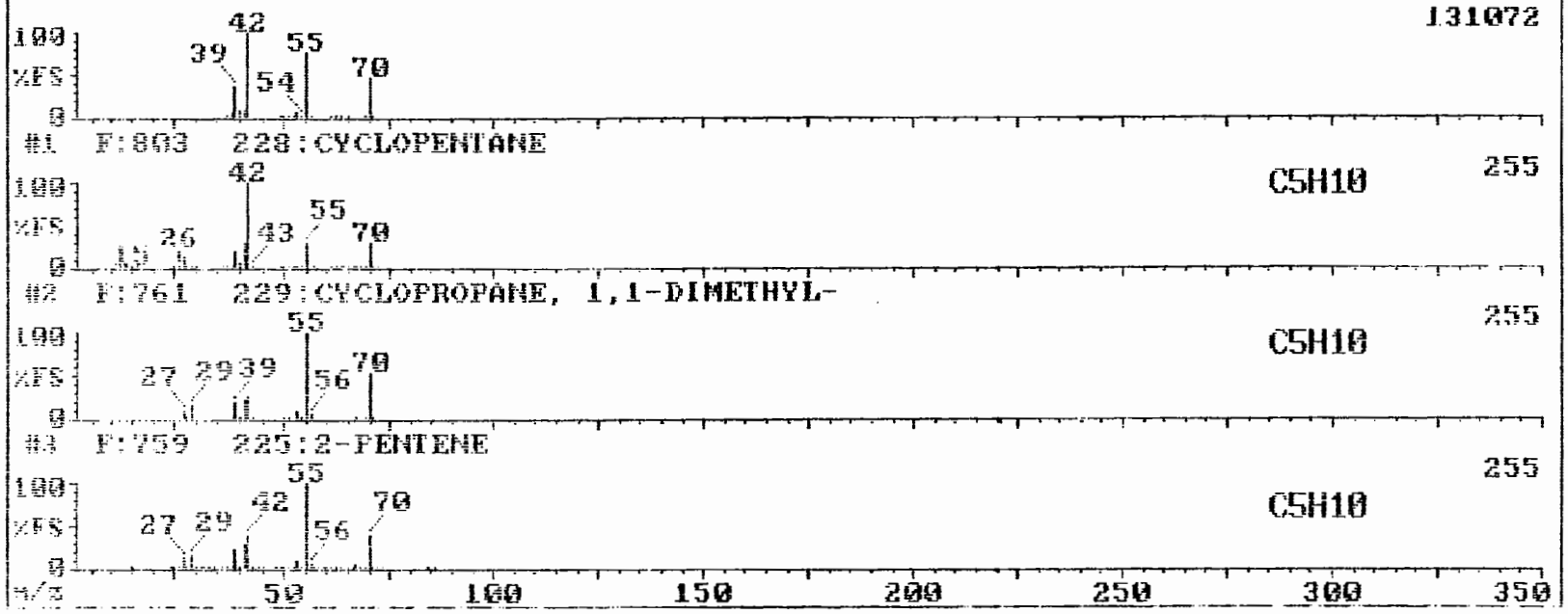
07/09/97 16:44 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 2 TUBE A/B T/TC 173-46-170/B TLI#42284 Instrument: H

MS373 186 (1.860) NBS 204800

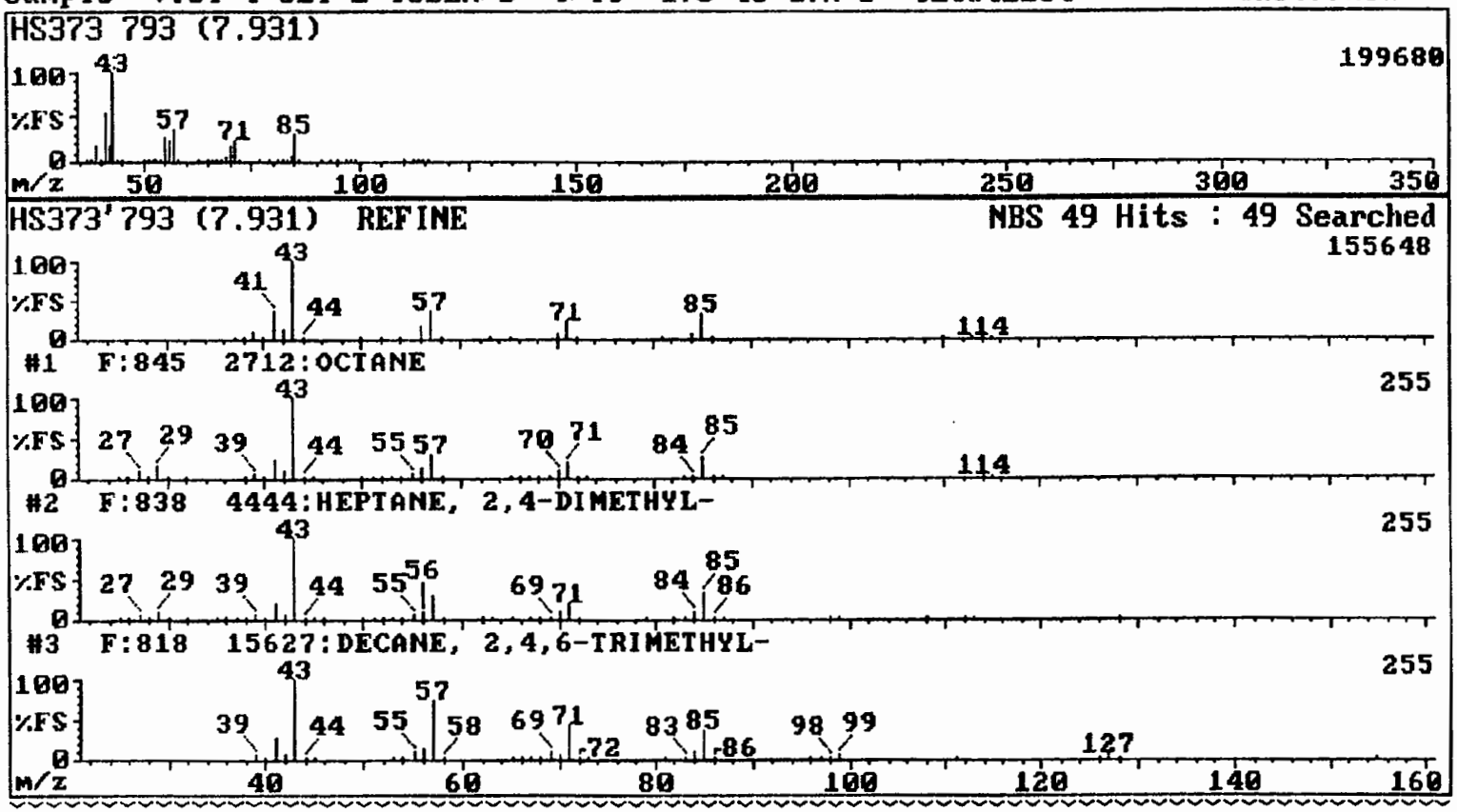


MS373'186 (1.861) REFINE NBS 147 Hits : 147 Searched 131072



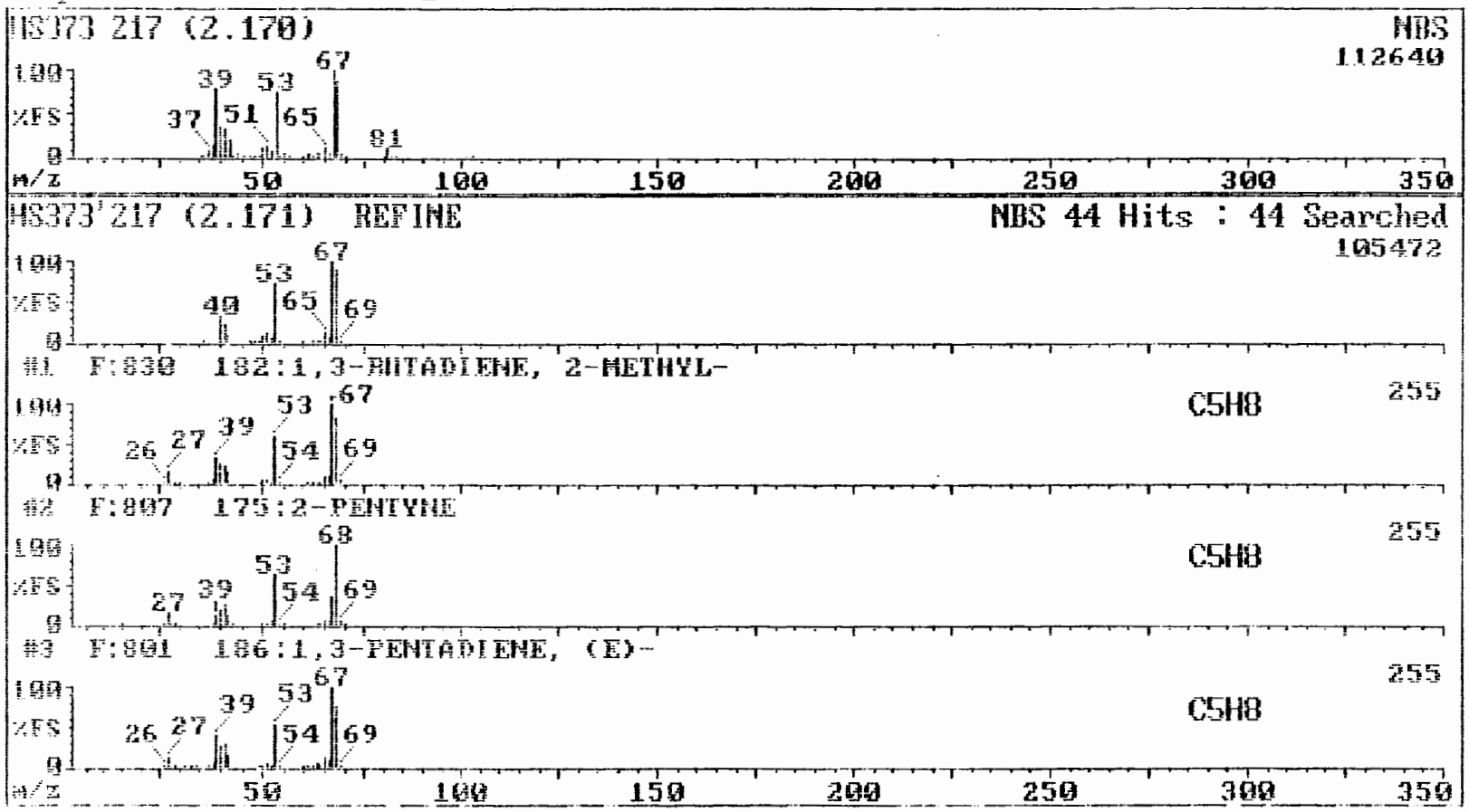
09-Jul-97 16:44 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 2 TUBEA/B T/TC 173-46-17A/B TLI#42284 Instrument H



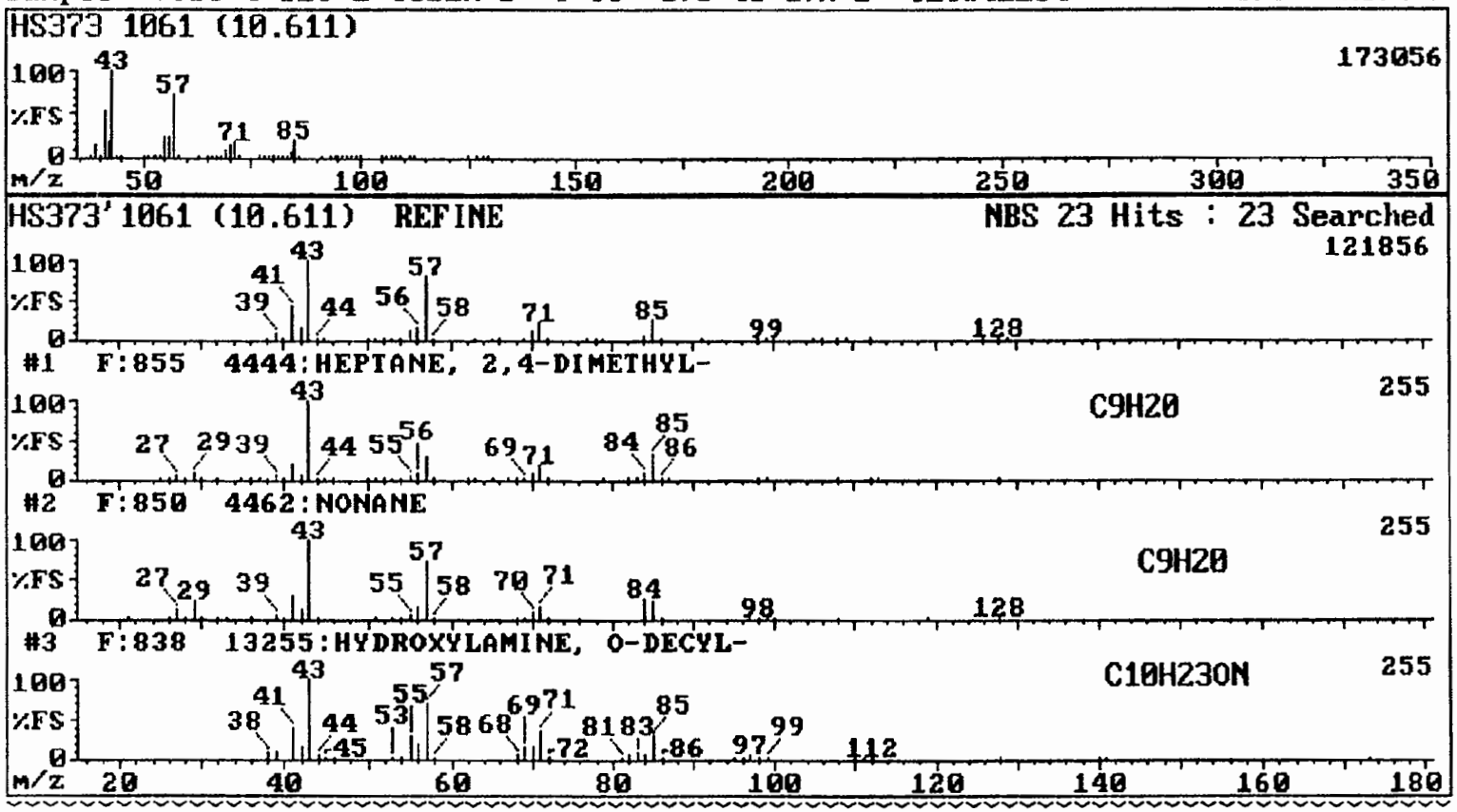
07/09/97 16:44 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 2 TUBEA/B T/TC 173-46-17A/B TLI#42284 Instrument: H



09-Jul-97 16:44 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 2 TUBEA/B T/TC 173-46-17A/B TLI#42284 Instrument H



Pacific Environmental Services

Project Number: 42284 | **Method 8240A VOST**
Sample File: HS374 | **Sample ID: VOST-4 SET 3 TUBEA/B T/TC**

Client Project: S407-003 | **Date Received: 06/30/97** | **Response File: ICALH708**
TLI ID: 173-46-18A,B
Date Analyzed : 07/09/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
Bromochloromethane		IS 1	4.47		
Chloromethane	0.192		0.91		0.05
Vinyl Chloride		U		0.001	0.05
1,3-Butadiene	0.246		1.06		0.05
Bromomethane	0.020	J	1.40		0.05
Chloroethane	0.092		1.52		0.05
Vinyl bromide		U		0.001	0.05
Trichlorofluoromethane	0.037	J	1.80		0.05
1,1-Dichloroethene		U		0.001	0.05
Iodomethane		U		0.001	0.05
Carbon disulfide	0.398		2.46		0.05
Acetone	0.041	BJ	2.53		0.05
Allyl chloride		U		0.001	0.05
Methylene chloride	0.771	B	2.93		0.05
trans-1,2-Dichloroethene		U		0.001	0.05
tert-Butyl methyl ether		U		0.001	0.05
Acrylonitrile	0.618		3.22		0.05
n-Hexane	0.353		3.52		0.05
1,1-Dichloroethane		U		0.001	0.05
1,2-Epoxybutane		U		0.003	0.05
cis-1,2-Dichloroethene		U		0.001	0.05
Chloroform		U		0.001	0.05
1,2-Dichloroethane		U		0.001	0.05
Isooctane	0.017	J	5.26		0.05
1,4-Difluorobenzene		IS 2	5.62		
Vinyl acetate		U		0.001	0.05

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

Triangle Laboratories of RTP, Inc.
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Savar v3.5
Printed: 15:04 07/22/1997

Pacific Environmental Services

Project Number: 42284 | **Method 8240A VOST**
Sample File: HS374 | **Sample ID: VOST-4 SET 3 TUBEA/B T/TC**

Client Project: S407-003 | **Date Received: 06/30/97** | **Response File: ICALH708**
TLI ID: 173-46-18A,B
Date Analyzed : 07/09/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
2-Butanone	0.011	J	4.35		0.05
1,1,1-Trichloroethane		U		0.001	0.05
Carbon tetrachloride		U		0.001	0.05
Benzene	1.139	BE	5.09		0.05
Trichloroethene		U		0.001	0.05
1,2-Dichloropropane		U		0.001	0.05
Ethyl acrylate		U		0.001	0.05
Methyl methacrylate	0.016	J	6.45		0.05
Bromodichloromethane		U		0.001	0.05
cis-1,3-Dichloropropene		U		0.001	0.05
trans-1,3-Dichloropropene		U		0.001	0.05
1,1,2-Trichloroethane		U		0.001	0.05
Dibromochloromethane		U		0.001	0.05
Ethylene dibromide		U		0.001	0.05
Bromoform		U		0.001	0.05
Chlorobenzene-d_5		IS 3	9.73		
4-Methyl-2-pentanone		U		0.001	0.05
Toluene	0.435	B	7.55		0.05
Tetrachloroethene		U		0.001	0.05
2-Hexanone		U		0.001	0.05
Chlorobenzene	0.006	J	9.78		0.05
Ethylbenzene	0.049	J	10.06		0.05
m-/p-Xylene	0.137		10.30		0.10
o-Xylene	0.059		11.00		0.05
Styrene	0.194		11.05		0.05
1,1,2,2-Tetrachloroethane		U		0.001	0.05

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

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Printed: 15:04 07/22/1997

Pacific Environmental Services

Project Number: 42284 | **Method 8240A VOST**
Sample File: HS374 | **Sample ID: VOST-4 SET 3 TUBEA/B T/TC**

Client Project: S407-003 | **Date Received: 06/30/97** | **Response File: ICALH708**
TLI ID: 173-46-18A,B
Date Analyzed : 07/09/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
Cumene	0.004	J	11.78		0.05

Surrogate Summary	Amount (ug)	RT	IS Ref	%REC
1,2-Dichloroethane-d_4	0.267	5.07	1	107
Benzene-d_6	0.271	5.05	2	108
Toluene-d_8	0.281	7.46	3	112

Reviewed by TW Date 7/22/97

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

Triangle Laboratories of RTP, Inc.
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

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Printed: 15:04 07/22/1997

Pacific Environmental Services

Project Number: 42284 Method 8240A
Sample File: HS374 Sample ID: VOST-4 SET 3 TUBEA/B T/TC

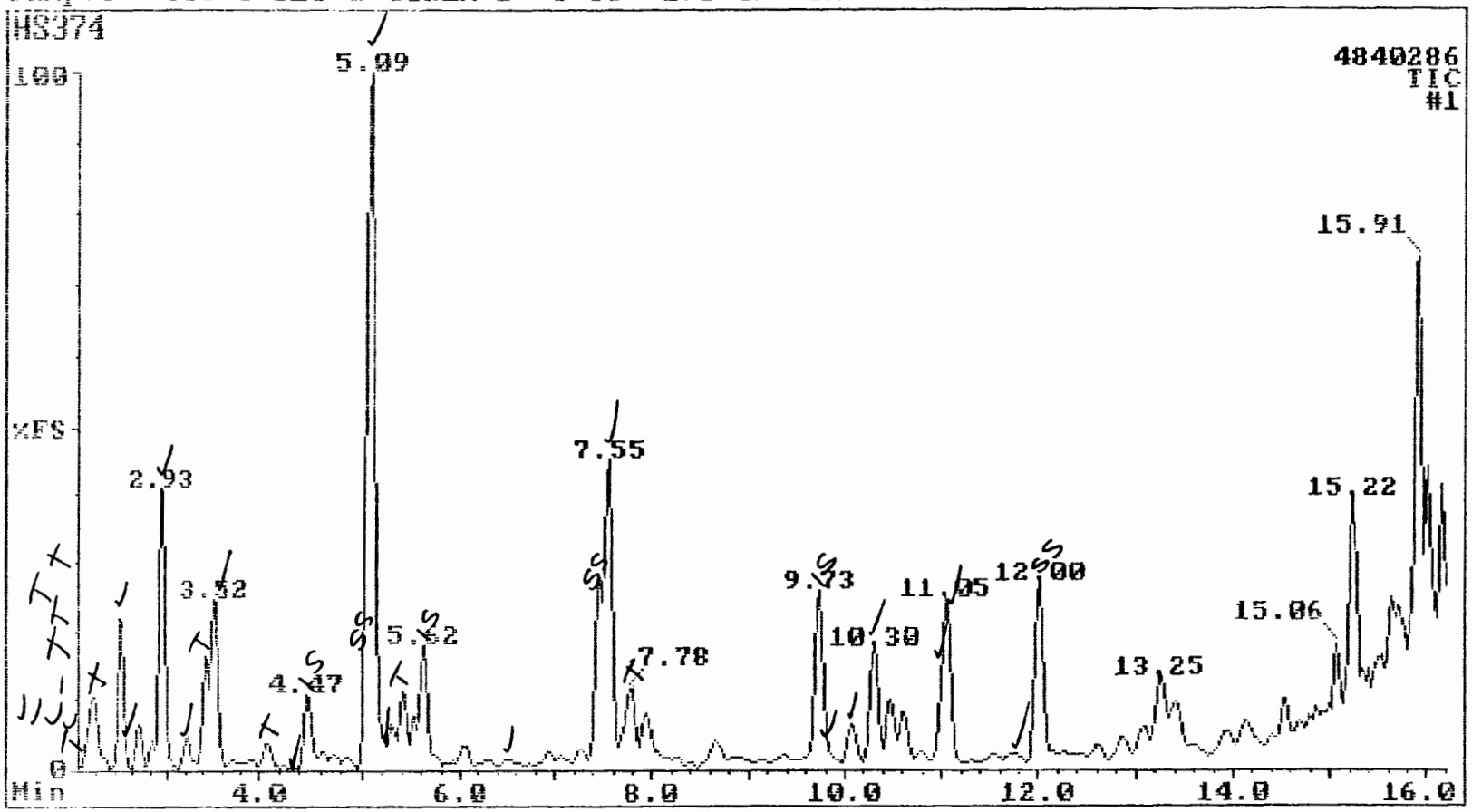
Client Project:	S407-003	Date Received:	06/30/97
TLI ID:	173-46-18A,B	Date Analyzed:	07/09/97
	Dilution Factor:	1.00	

Tentatively Identified Compounds

Name	RT	Area	IS RT	IS Area	Amount, ug
Unknown	0.711	23335034	4.471	5102518	1.143
Methyl Propane Isomer	0.821	15791845	4.471	5102518	0.774
Methylbutane Isomer	1.600	10170422	4.471	5102518	0.498
C4H8 Isomer	1.001	9320503	4.471	5102518	0.457
Pentane	1.910	6837718	4.471	5102518	0.335
C5H8 Isomer	2.160	5955569	4.471	5102518	0.292
C8H16 Isomer	7.781	12139416	9.731	11891588	0.255
C6H12 Isomer	3.431	5206325	4.471	5102518	0.255
C7H14 Isomer	5.411	4149131	4.471	5102518	0.203
Tetrahydrodimethyl Pyranone Isomer	4.080	3389451	4.471	5102518	0.166

07-09-97 17:14 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 3 TUBEA/B T/TC 173-46-18A/B TLI#42284 Instrument H



Data Review: TW
Date: 7-29-97

QUAN File : H0374 LAB-BASE QUAN 07-22-97 [illegible]

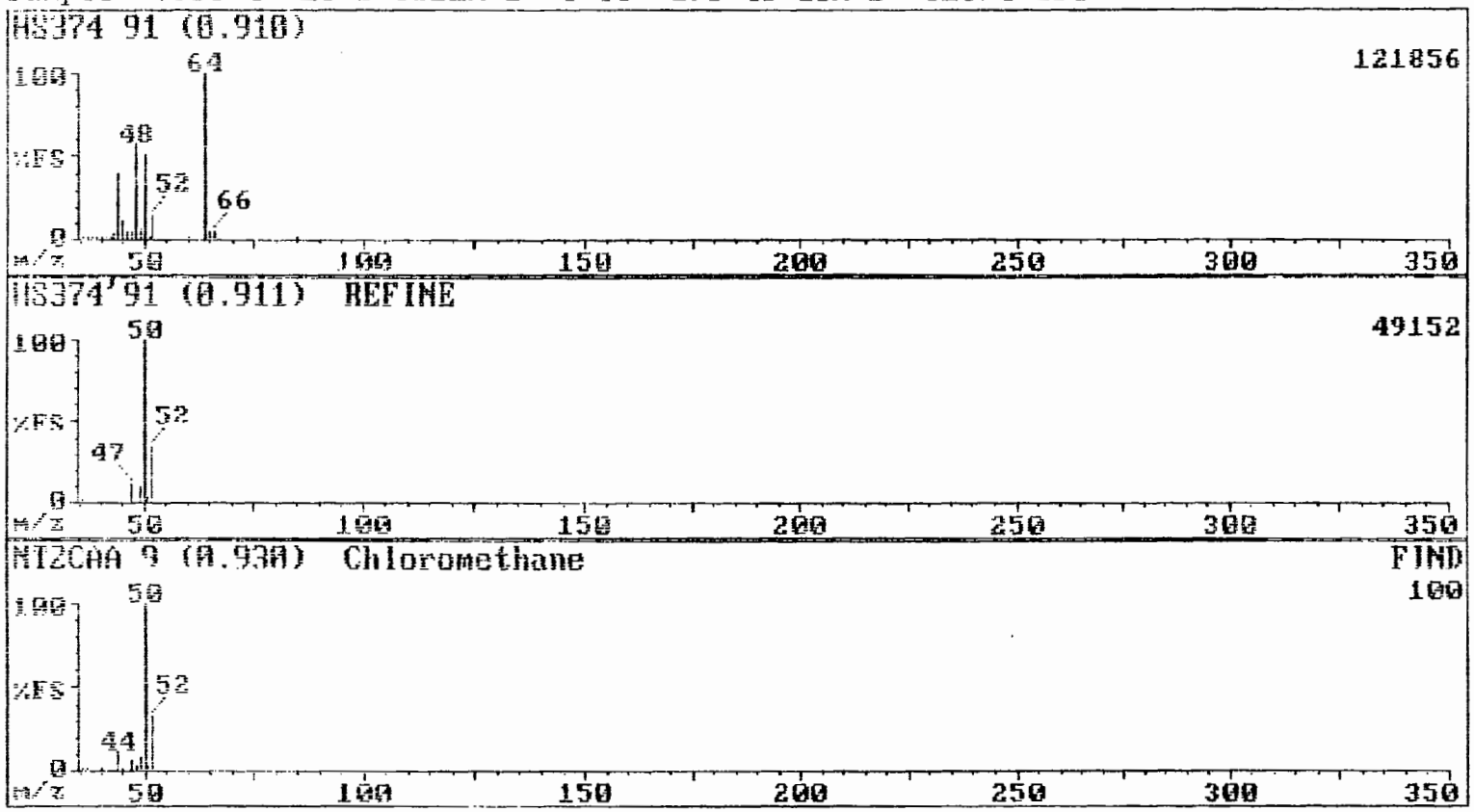
No.	MAT	FOR	REV	Delta	Area	P.Flags	RT	QM	Name
1	100	89	99	-4	334236	bb	4.47	128	Bromochloromethane
2	100	91	97	1	2171584	bb	5.62	114	1,4-Difluorobenzene
3	100	96	98	0	2906476	bv	9.73	117	Chlorobenzene-d5
4	53	19	66	1	961040	bv	5.07	65	1,2-Dichloroethane-d4
5	100	83	84	0	2719808	bv	5.05	84	Benzene-d6
6	100	89	99	0	3705427	bv	7.46	98	Toluene-d8
~~7~~	~~23~~	~~11~~	~~36~~	~~14~~	~~26690~~	~~A~~	~~12.62~~	98	o-Xylene-d10 FP TW
8	100	86	94	2	1884595	vv	12.00	95	4-Bromofluorobenzene
9	88	68	72	-1	540752	bv	0.91	50	Chloromethane
~~10~~	~~14~~	~~15~~	~~29~~	~~-21~~	~~392~~	~~bb~~	~~0.94~~	62	Vinyl Chloride FP TW
11	100	79	100	-2	~~1909832~~ ~~A~~ 865828		~~1.06~~ 1.06	39	1,3-Butadiene mi TW
12	87	47	95	-1	58416	bb	1.40	94	Bromomethane
13	45	26	49	-1	172156	bv	1.52	64	Chloroethane
14	0	0	0	0	0		0.00	106	Vinyl bromide
15	76	39	89	-2	140824	bb	1.80	101	Trichlorofluoromethane
16	0	0	0	0	0		0.00	96	1,1-Dichloroethene
17	0	0	0	0	0		0.00	142	Iodomethane
18	100	80	99	-2	3361036	bv	2.46	76	Carbon disulfide
19	73	44	73	-2	71653	bv	2.53	43	Acetone
~~20~~	~~63~~	~~41~~	~~62~~	~~-1~~	~~9898~~	~~A~~	~~2.78~~	76	Allyl chloride FP TW
21	100	84	95	-1	2030930	bv	2.93	84	Methylene chloride
22	0	0	0	0	0		0.00	96	trans-1,2-Dichloroethene
~~23~~	~~66~~	~~49~~	~~57~~	~~-1~~	~~5476~~	~~A~~	~~3.29~~	73	tert-Butyl methyl et FP TW
24	91	61	92	-2	356206	bv	3.22	53	Acrylonitrile
25	100	98	100	-2	2206284	vv	3.52	57	n-Hexane
26	0	0	0	0	0		0.00	63	1,1-Dichloroethane
~~27~~	~~56~~	~~45~~	~~56~~	~~-7~~	~~110757~~	~~vv~~	~~4.08~~	42	1,2-Epoxybutane FP TW
28	0	0	0	0	0		0.00	96	cis-1,2-Dichloroethene
29	0	0	0	0	0		0.00	83	Chloroform
30	0	0	0	0	0		0.00	62	1,2-Dichloroethane
31	84	50	86	2	362799	bv	5.26	57	Isooctane
~~32~~	~~32~~	~~30~~	~~62~~	~~29~~	~~1764726~~	~~vv~~	~~3.52~~	43	Vinyl acetate FP TW
33	71	50	66	0	3824	A	4.35	72	2-Butanone
34	0	0	0	0	0		0.00	97	1,1,1-Trichloroethane
35	0	0	0	0	0		0.00	117	Carbon tetrachloride
36	100	92	100	0	12531880	bv	5.09	78	Benzene
37	0	0	0	0	0		0.00	130	Trichloroethene
~~38~~	~~27~~	~~15~~	~~44~~	~~18~~	~~388~~	~~bb~~	~~5.92~~	63	1,2-Dichloropropane FP TW
~~39~~	~~39~~	~~39~~	~~62~~	~~-13~~	~~234048~~	~~vv~~	~~6.04~~	55	Ethyl acrylate
40	94	68	82	1	33068	vv	6.45	69	Methyl methacrylate
41	0	0	0	0	0		0.00	83	Bromodichloromethane
42	0	0	0	0	0		0.00	75	cis-1,3-Dichloropropene
43	0	0	0	0	0		0.00	75	trans-1,3-Dichloropropen
44	0	0	0	0	0		0.00	97	1,1,2-Trichloroethane
45	0	0	0	0	0		0.00	129	Dibromochloromethane
46	0	0	0	0	0		0.00	107	Ethylene dibromide
47	0	0	0	0	0		0.00	173	Bromoform
~~48~~	~~36~~	~~32~~	~~78~~	~~29~~	~~128046~~	~~vv~~	~~7.25~~	43	4-Methyl-2-pentanone FP TW
49	100	95	99	0	3744644	bv	7.55	92	Toluene
50	0	0	0	0	0		0.00	164	Tetrachloroethene

Data Review: TW
Date: 7-22-97

No.	MAT	FOR	REV	Delta	Area	P.Flags	RT	QM	Name
~~51~~	~~75~~	~~13~~	~~52~~	~~7~~	~~23344~~	~~A~~	~~8.69~~	43	2-Hexanone PP TW
52	54	21	70	1	74224	bb	9.78	112	Chlorobenzene
53	100	85	98	0	289779	bv	10.06	106	Ethylbenzene
54	100	86	94	0	1019096	vv	10.30	106	m-/p-Xylene
55	100	81	88	1	419692	bv	11.00	106	o-Xylene
56	100	91	97	1	2270084	bv	11.03	104	Styrene
~~57~~	~~27~~	~~5~~	~~46~~	~~6~~	~~1984~~	~~A~~	~~12.41~~	83	1,1,2,2-Tetrachloro PP TW
58	56	28	64	1	90055	bv	11.78	105	Cumene

07-09-97 17:14 Triangle Laboratories of RTP, Inc. (919) 544-5729

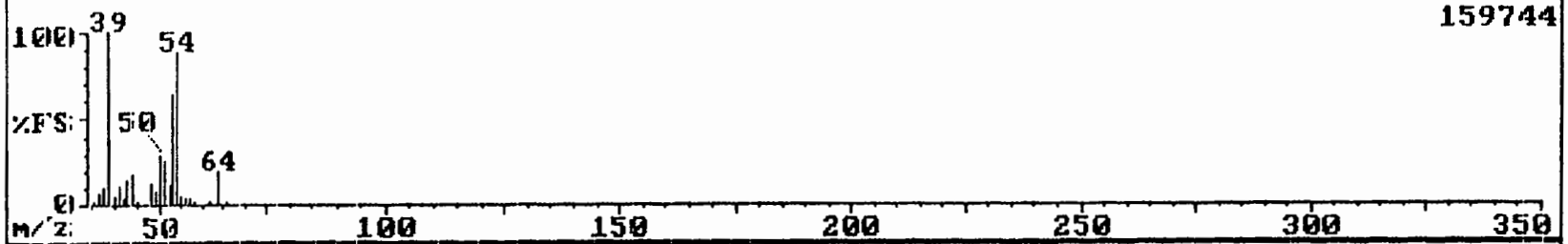
Sample: VOST-4 SET 3 TUBEA/B T/TC 173-46-18A/B TLI#42284 Instrument II



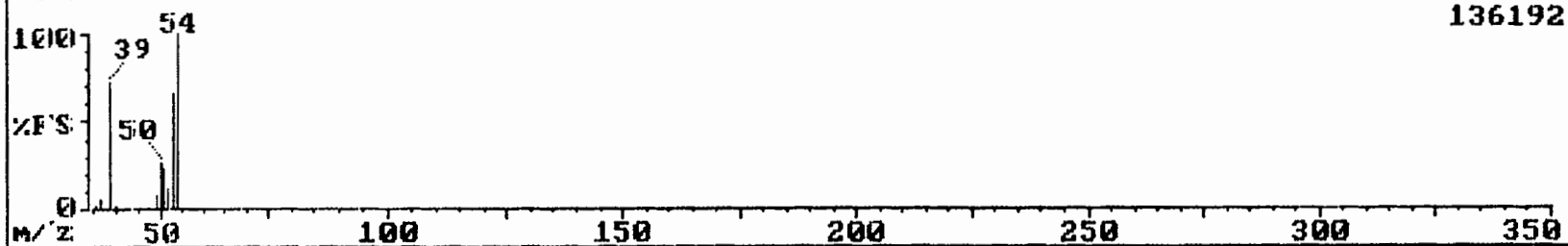
09-Jul-97 17:14 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 3 TUBEA/B T/TC 173-46-18A/B TLI#42284 Instrument H

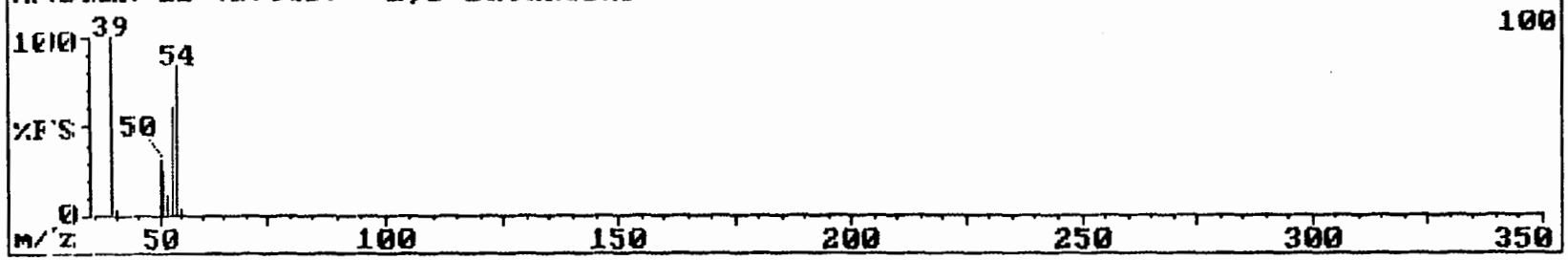
HS3174 106 (1.060) 159744



HS3174 106 (1.061) REFINE 136192

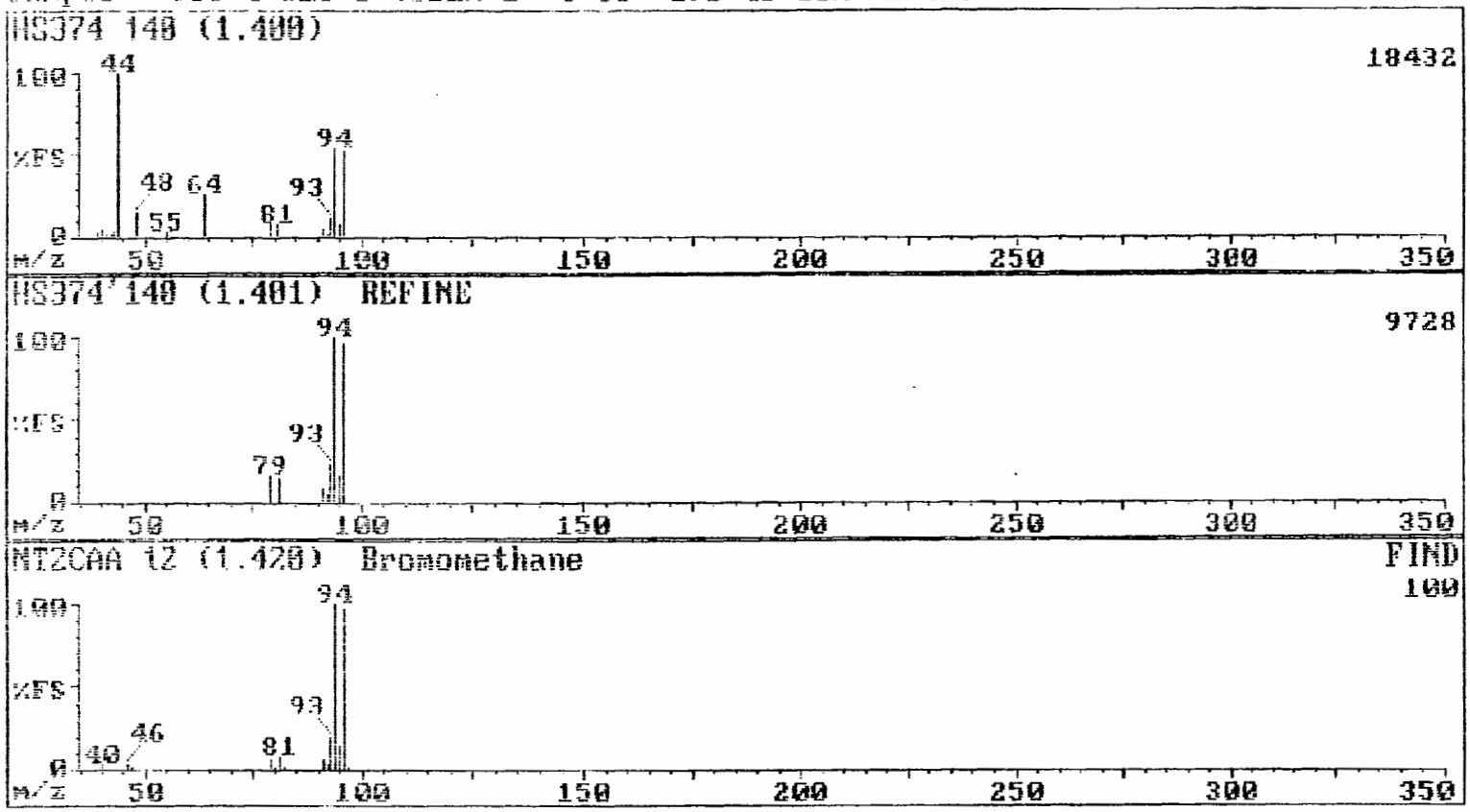


MASTER 11 (1.440) 1,3-Butadiene FIND 100



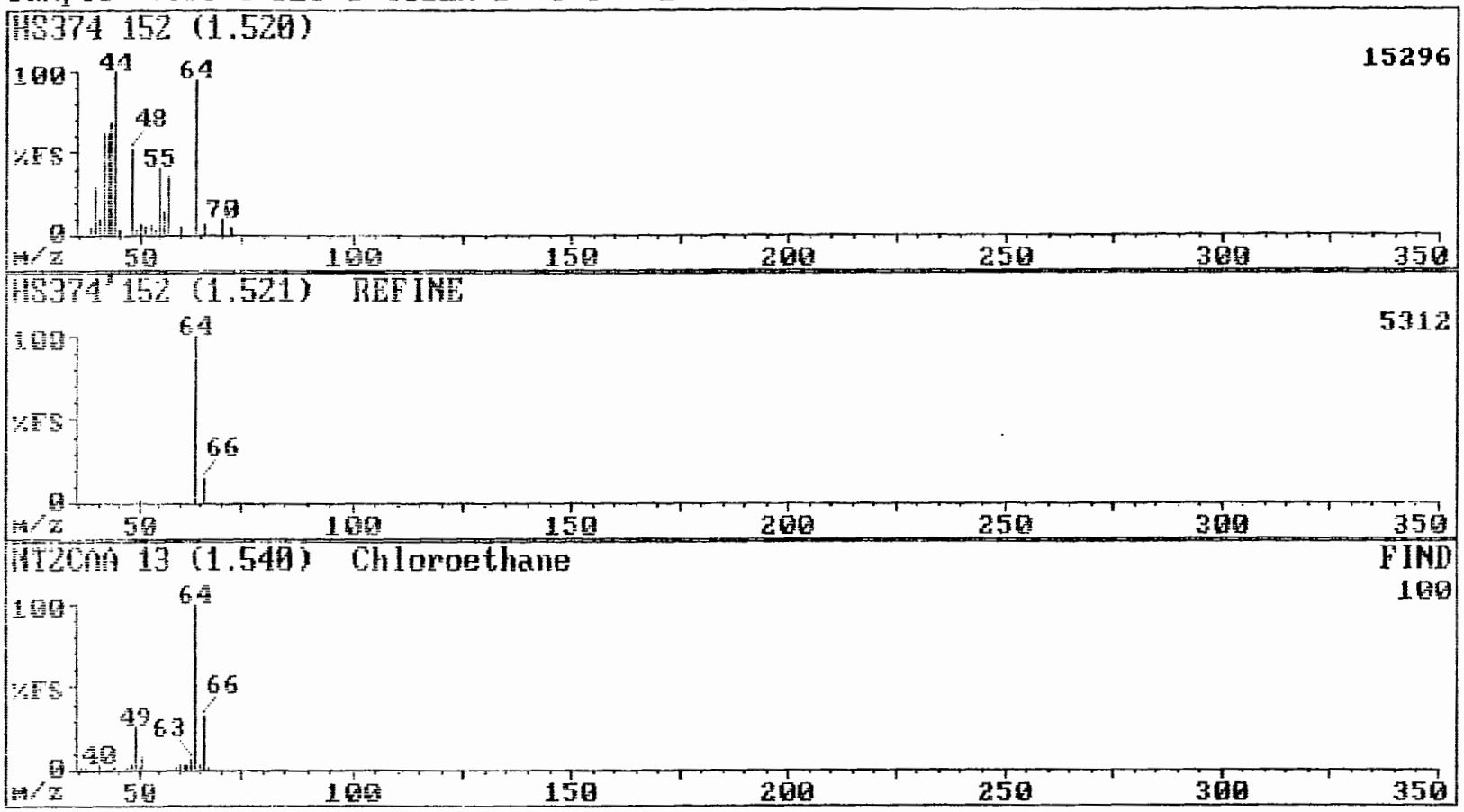
07 09-97 17:14 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: WOST-4 SET 3 TUBEA/B T/TC 173-46-18A/B TLI#42284 Instrument H



07-09-97 17:14 Triangle Laboratories of RTP, Inc. (919) 544-5729

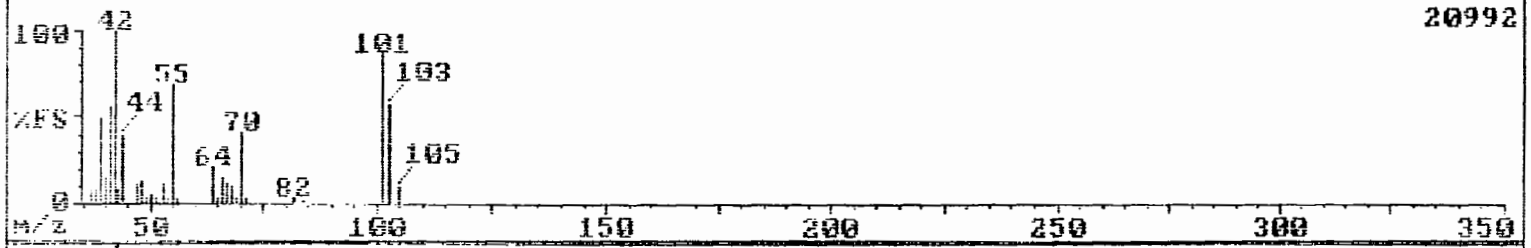
Sample: VOST-4 SET 3 TUBEA/B T/TC 173-46-18A/B TLI#42284 Instrument II



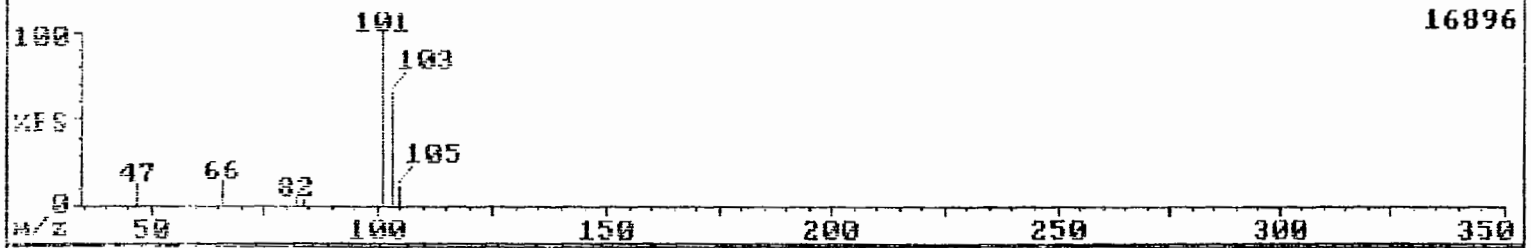
07-09-97 17:14 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 3 TUBEA/B T/TC 173-46-18A/B TLI#42284 Instrument H

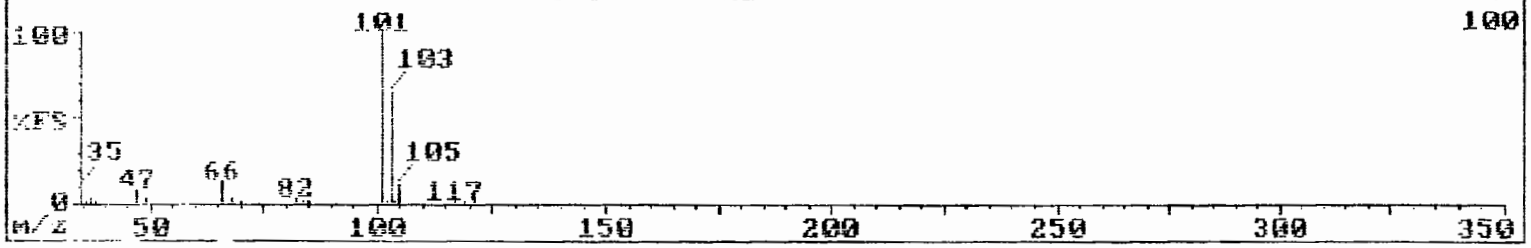
HS374 180 (1.800) 20992



HS374 180 (1.801) REFINE 16896

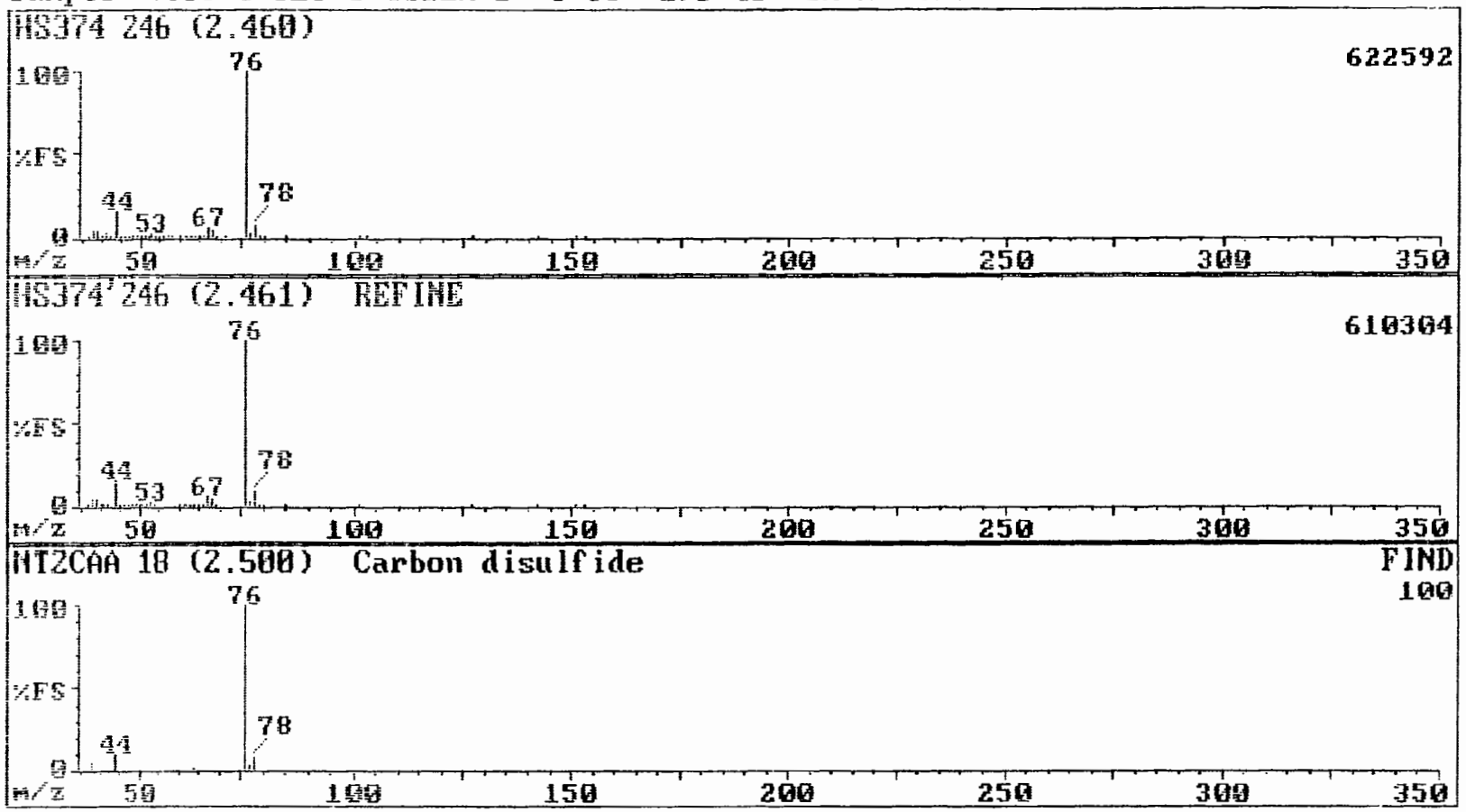


HTZCAA 15 (1.840) Trichlorofluoromethane FIND 100



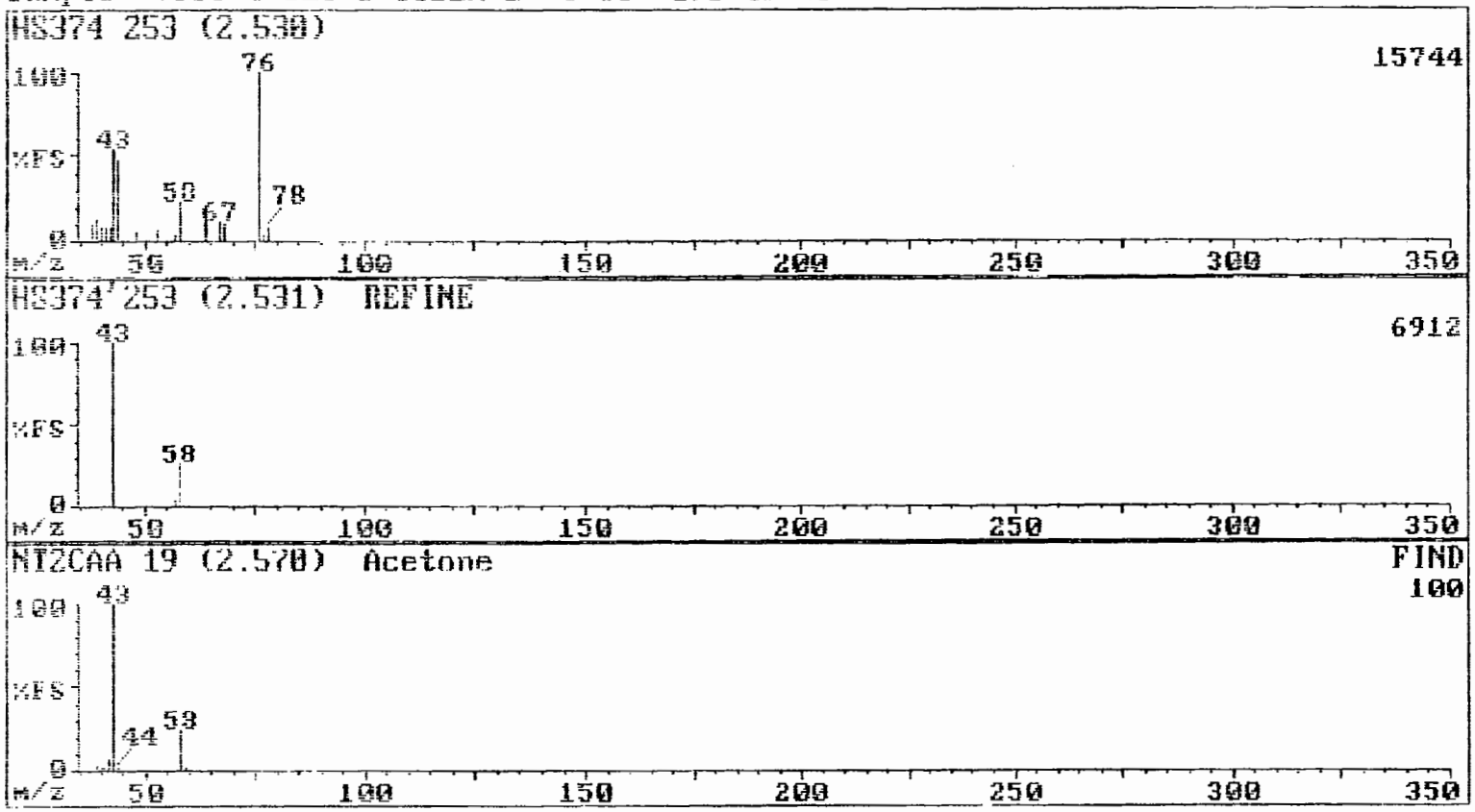
07-09-97 17:14 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 3 TUBEA/B T/TC 173-46-18A/B TLI#42284 Instrument H



07 09 97 17:14 Triangle Laboratories of RTP, Inc. (919) 544-5729

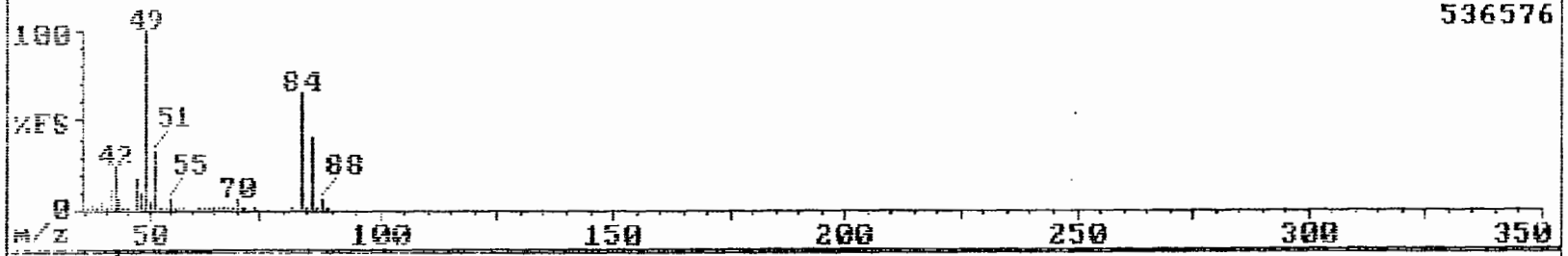
Sample: VOST-4 SET 3 TUBEA/B T/TC 173-46-18A/B TL1#42284 Instrument H



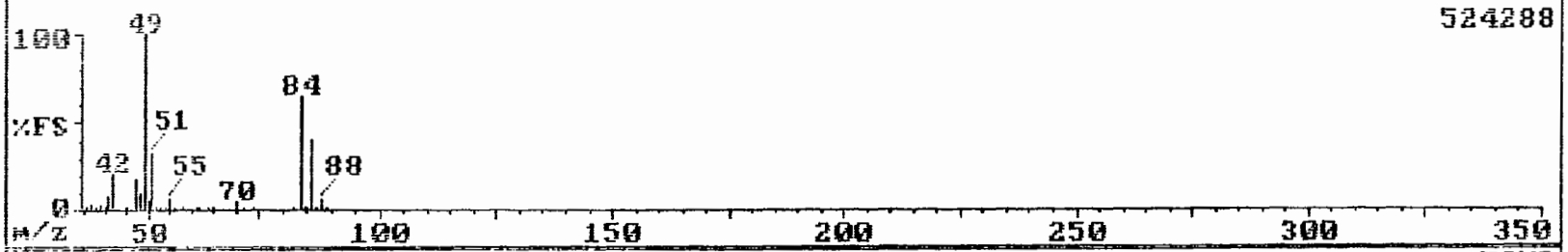
07-09-97 17:14 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 3 TUBEA/B T/TC 173-46-18A/B TLI#42284 Instrument H

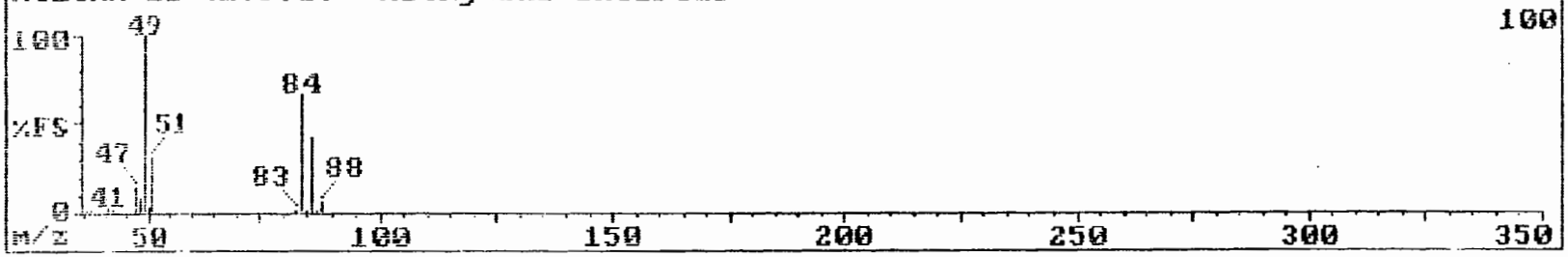
HS374 293 (2.930) 536576



HS374 293 (2.931) REFINE 524288

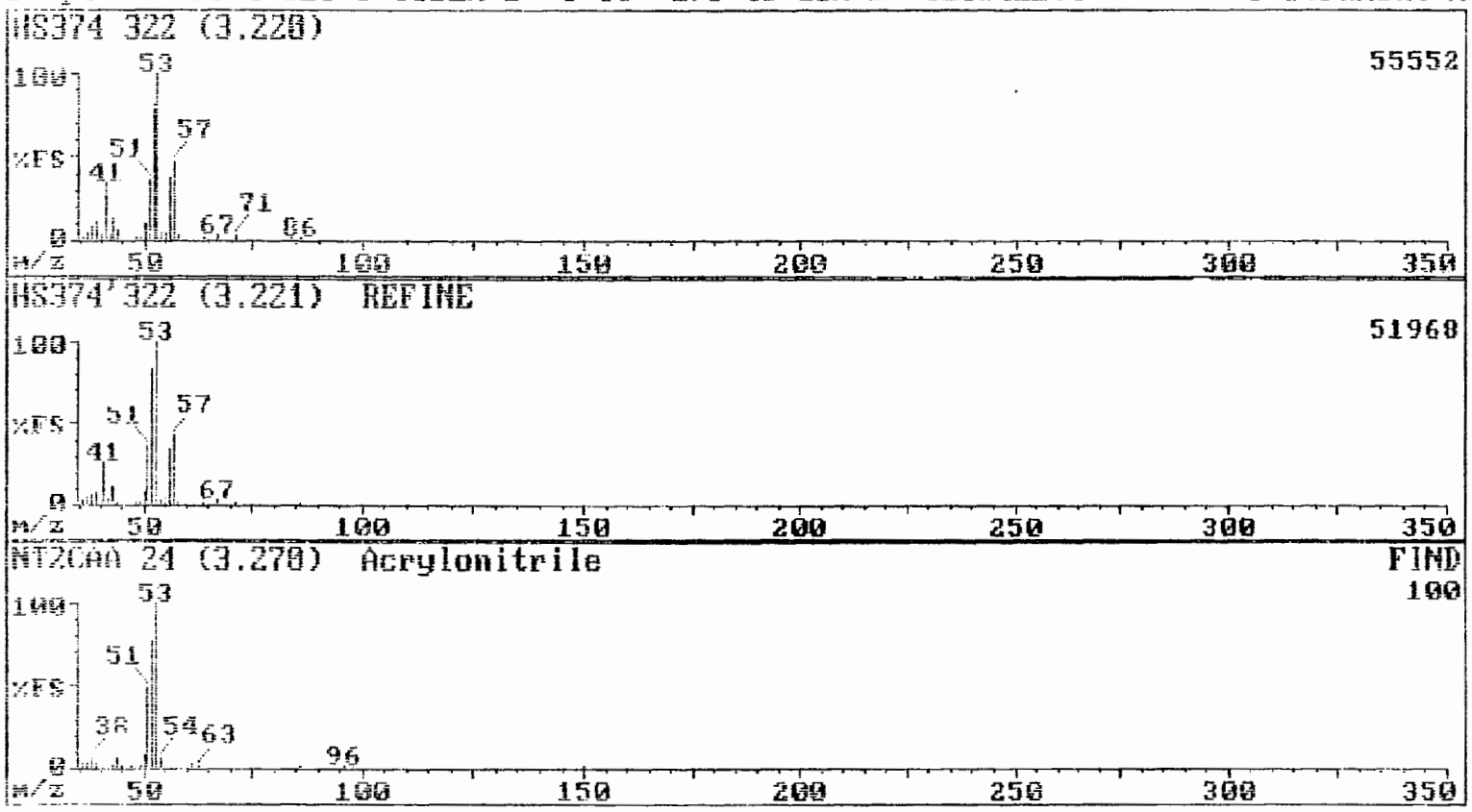


NT2CAA 21 (2.970) Methylene chloride FIND 100



07-09-97 17:14 Triangle Laboratories of RTP, Inc. (919) 544-5729

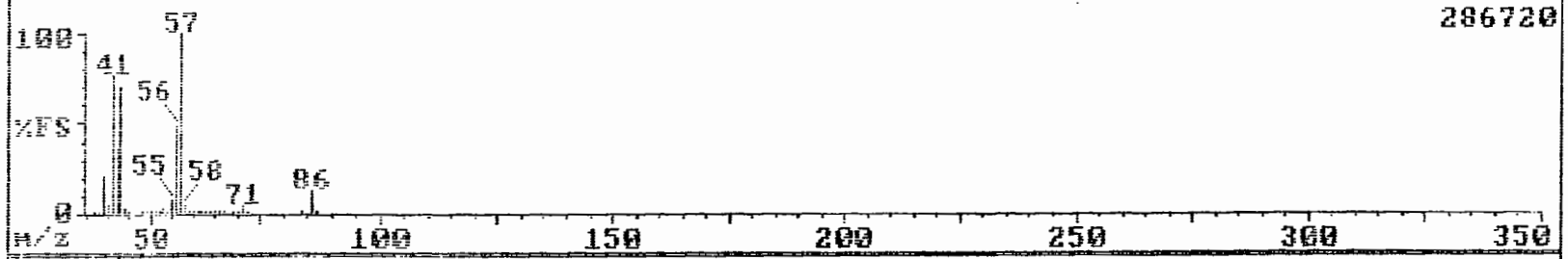
Sample: VOST-4 SET 3 TUBEA/B T/TC 173-46-18A/B TLI#42204 Instrument H



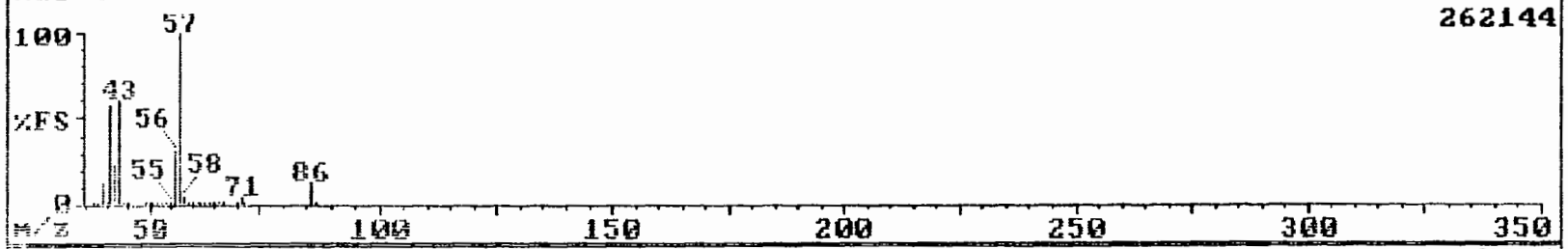
07-09-97 17:14 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 3 TUBEA/B T/TC 173-46-18A/B TL1#42284 Instrument H

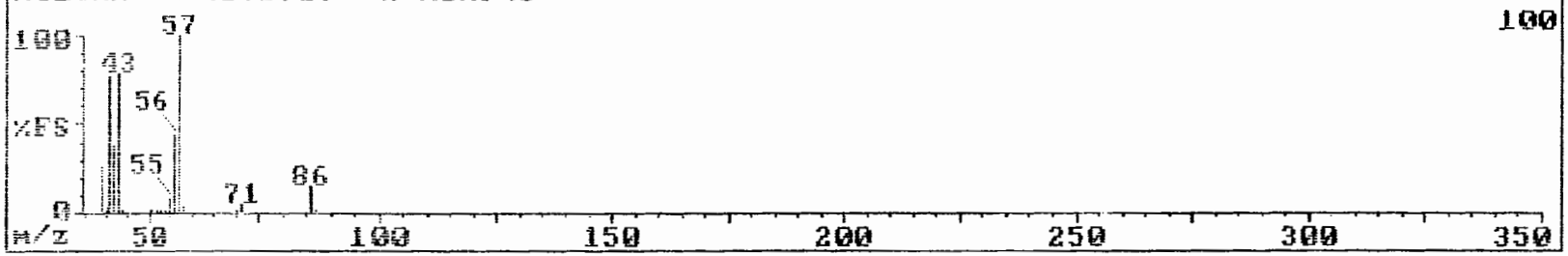
HS374 352 (3.520) 286720



HS374 352 (3.521) REFINE 262144

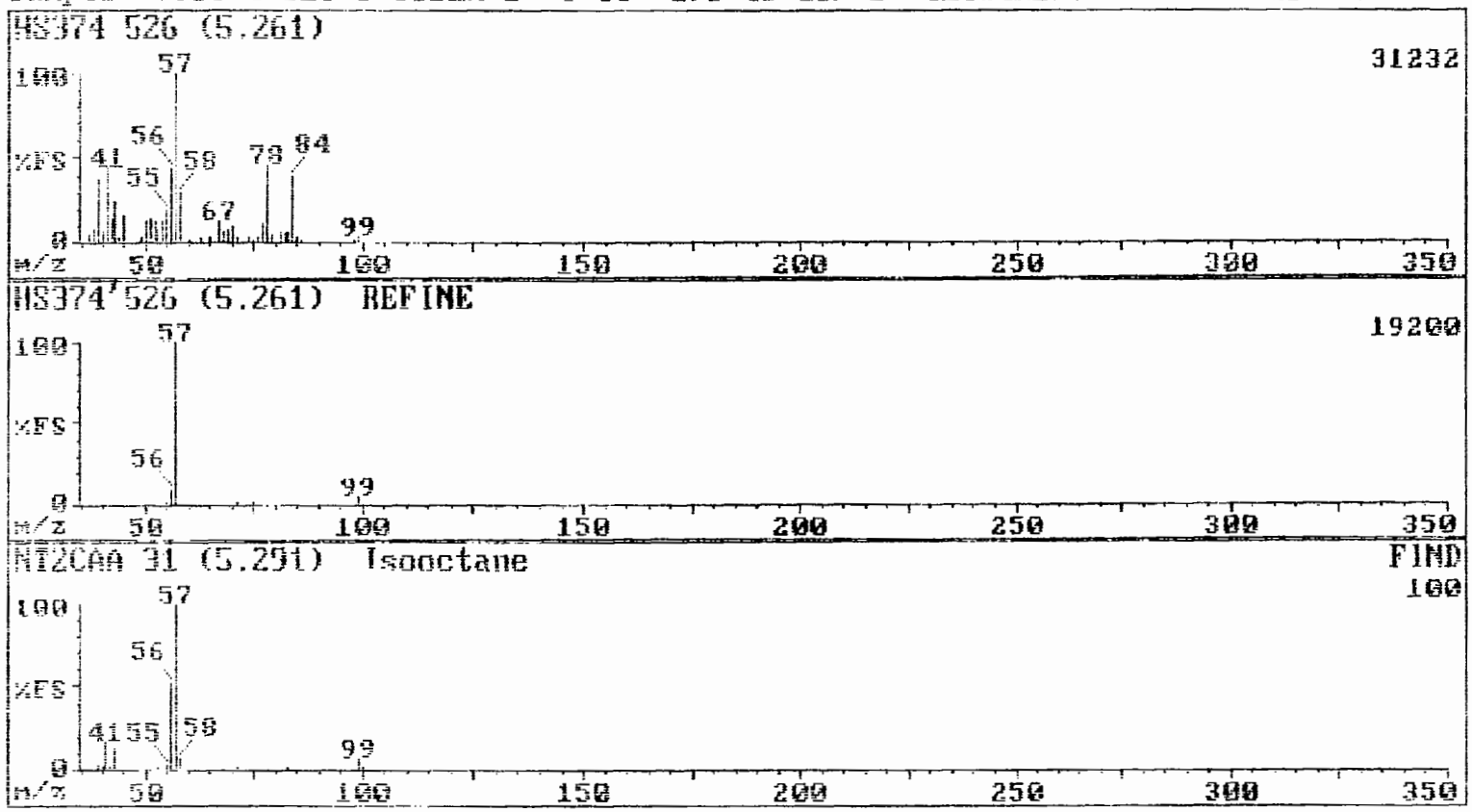


NTZCAA 25 (3.570) n-Hexane FIND 100



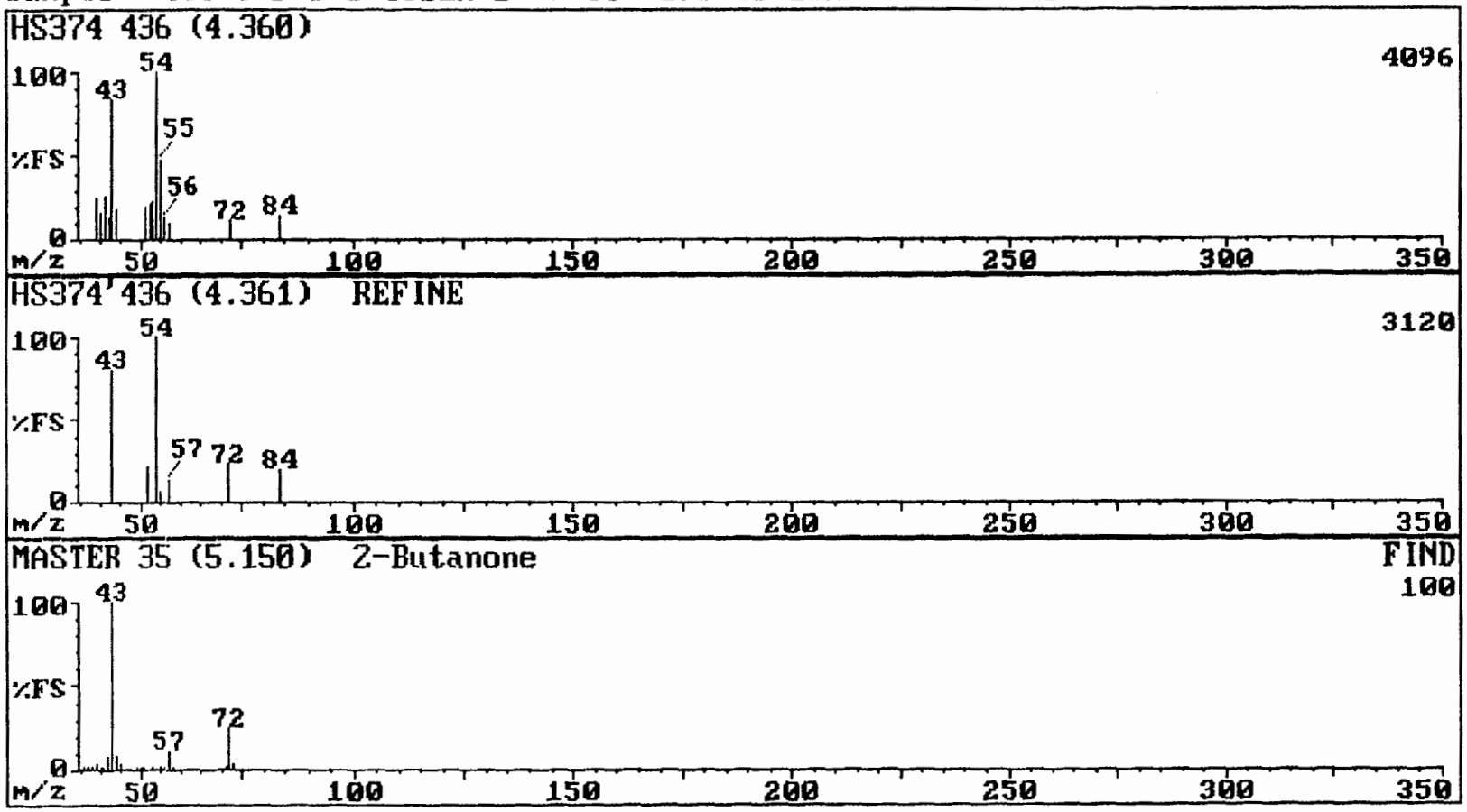
07 09 97 17:14 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 3 TUBEA/B T/TC 173-46-18A/B TLI#42284 Instrument H



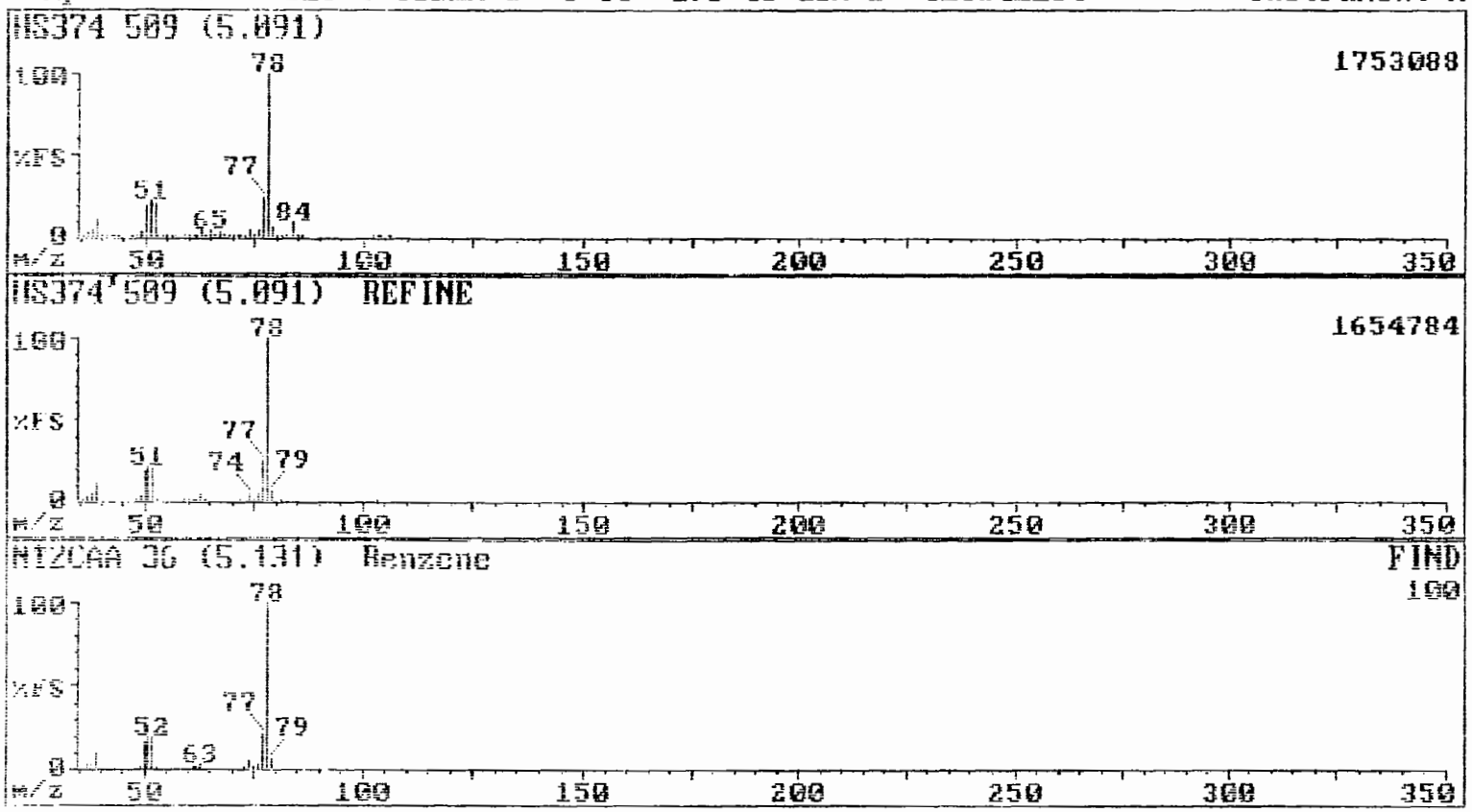
09-Jul-97 17:14 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 3 TUBEA/B T/TC 173-46-18A/B TLI#42284 Instrument H



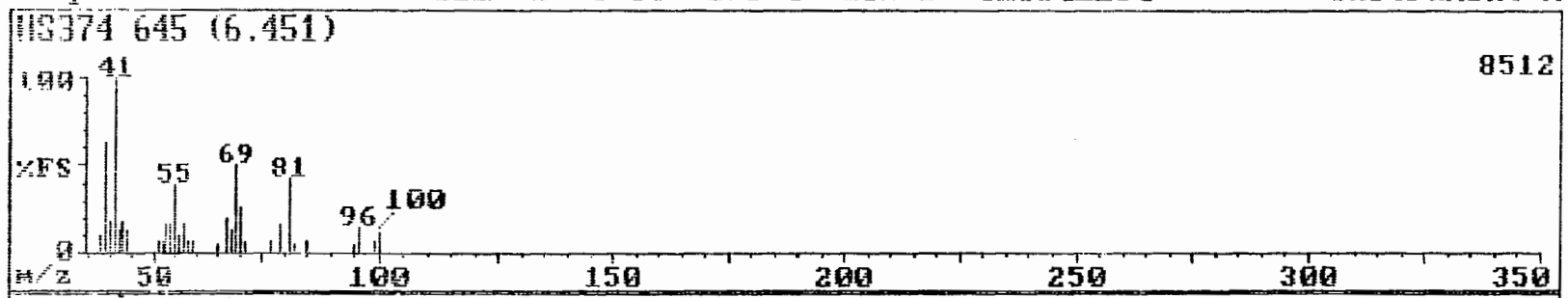
07-09-97 17:14 Triangle Laboratories of RTP, Inc. (919) 544-5729

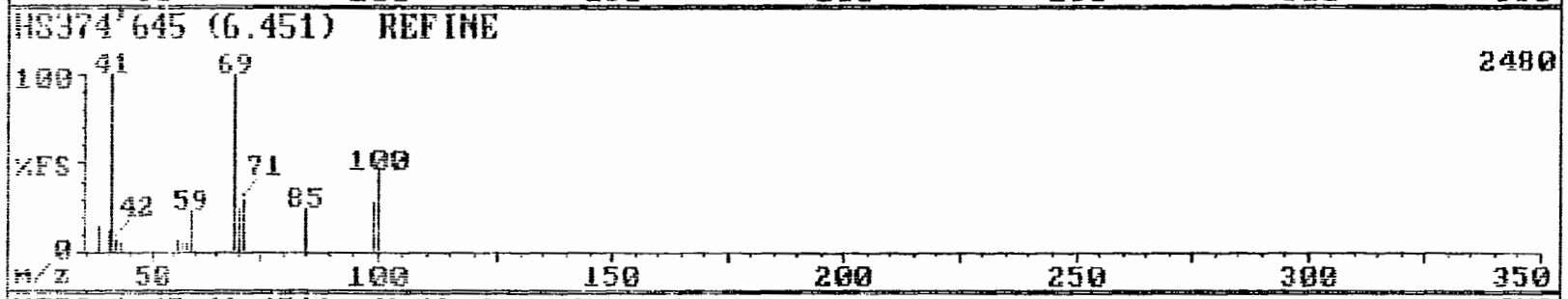
Sample: WOST-4 SET 3 TUBEA/B T/TC 173-46-18A/B TLI#42284 Instrument H

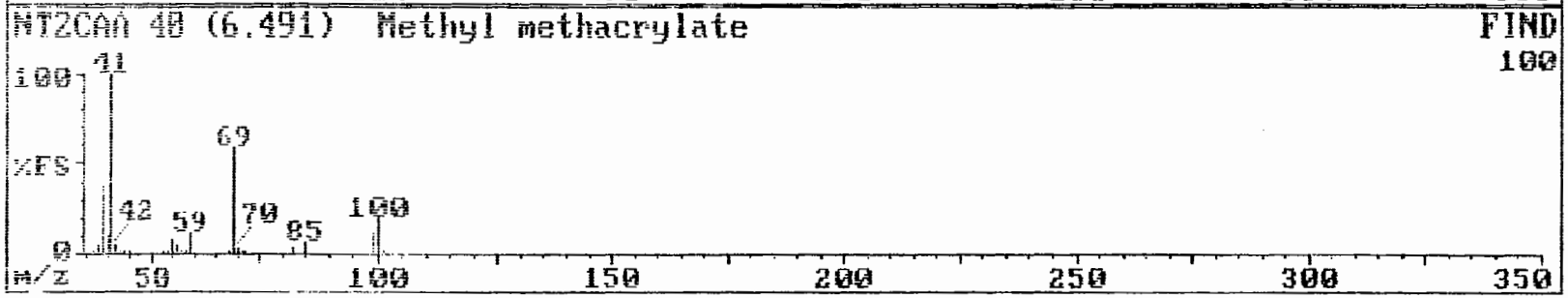


07-09-97 17:14 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 3 TUBEA/B T/TC 173-46-18A/B TLI#42284 Instrument H

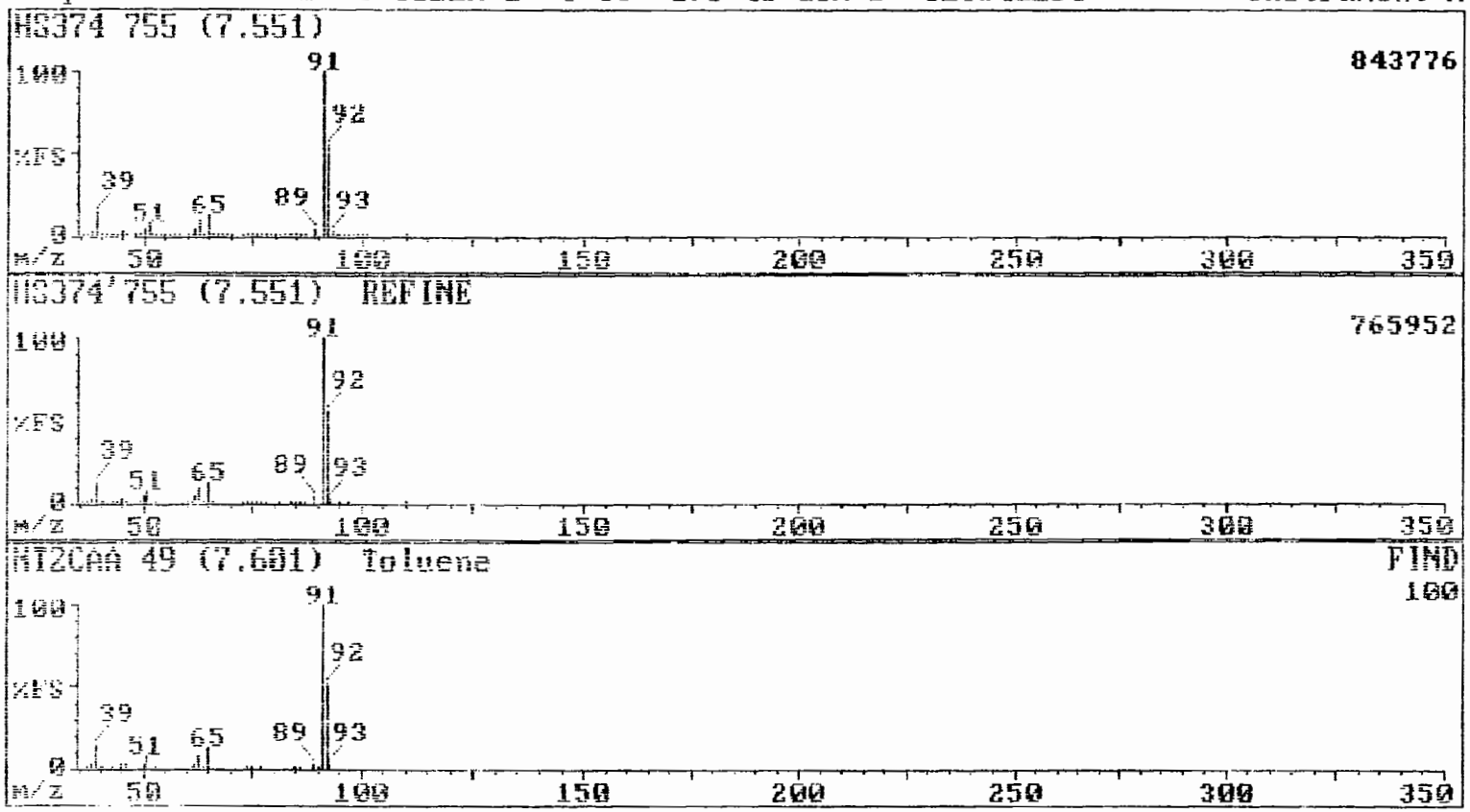






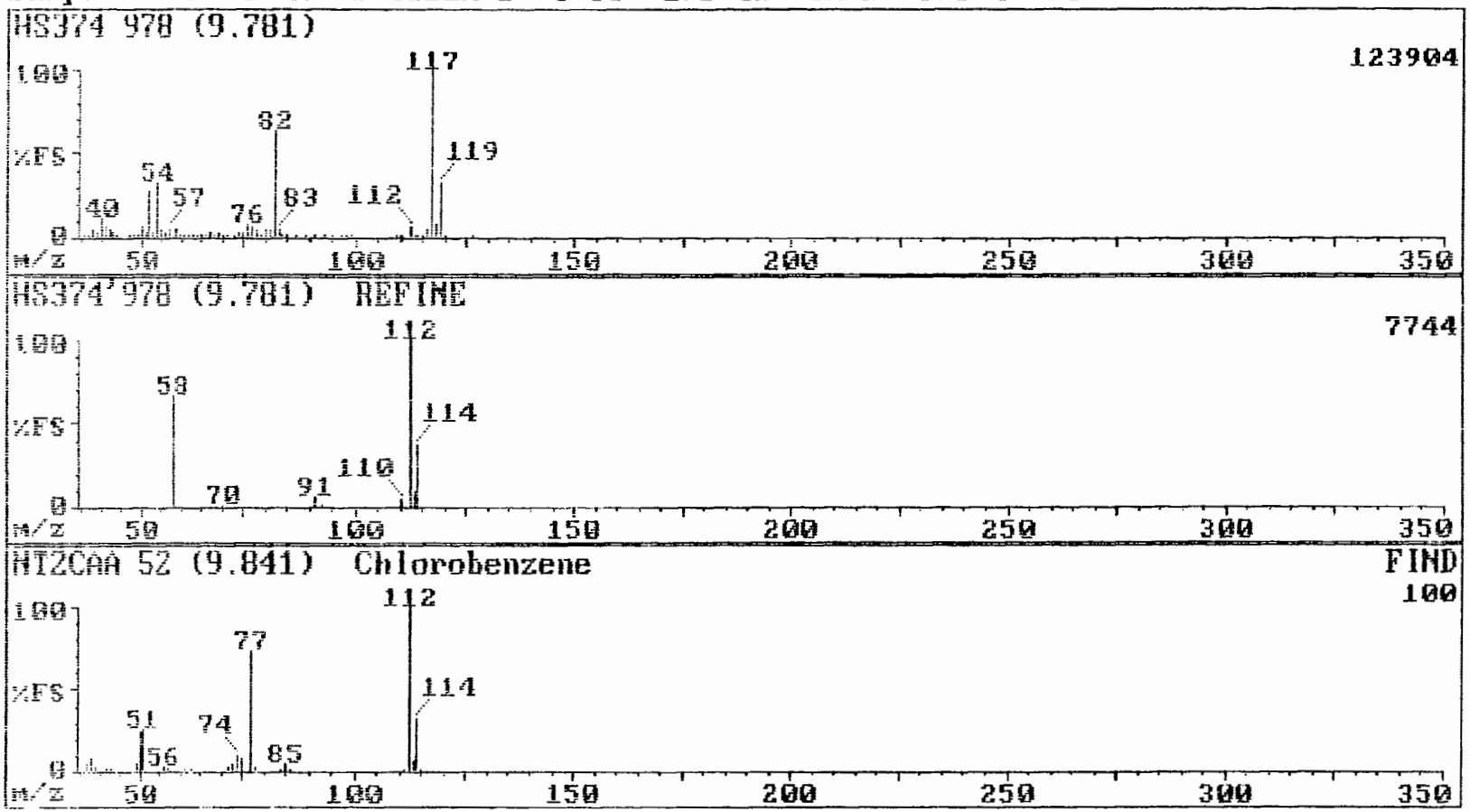
07 09 97 17:14 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 3 TUBEA/B T/TC 173-46-18A/B TLI#42284 Instrument H



07-09-97 17:14 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 3 TUBEA/B T/TC 173-46-18A/B TLI#42284 Instrument H



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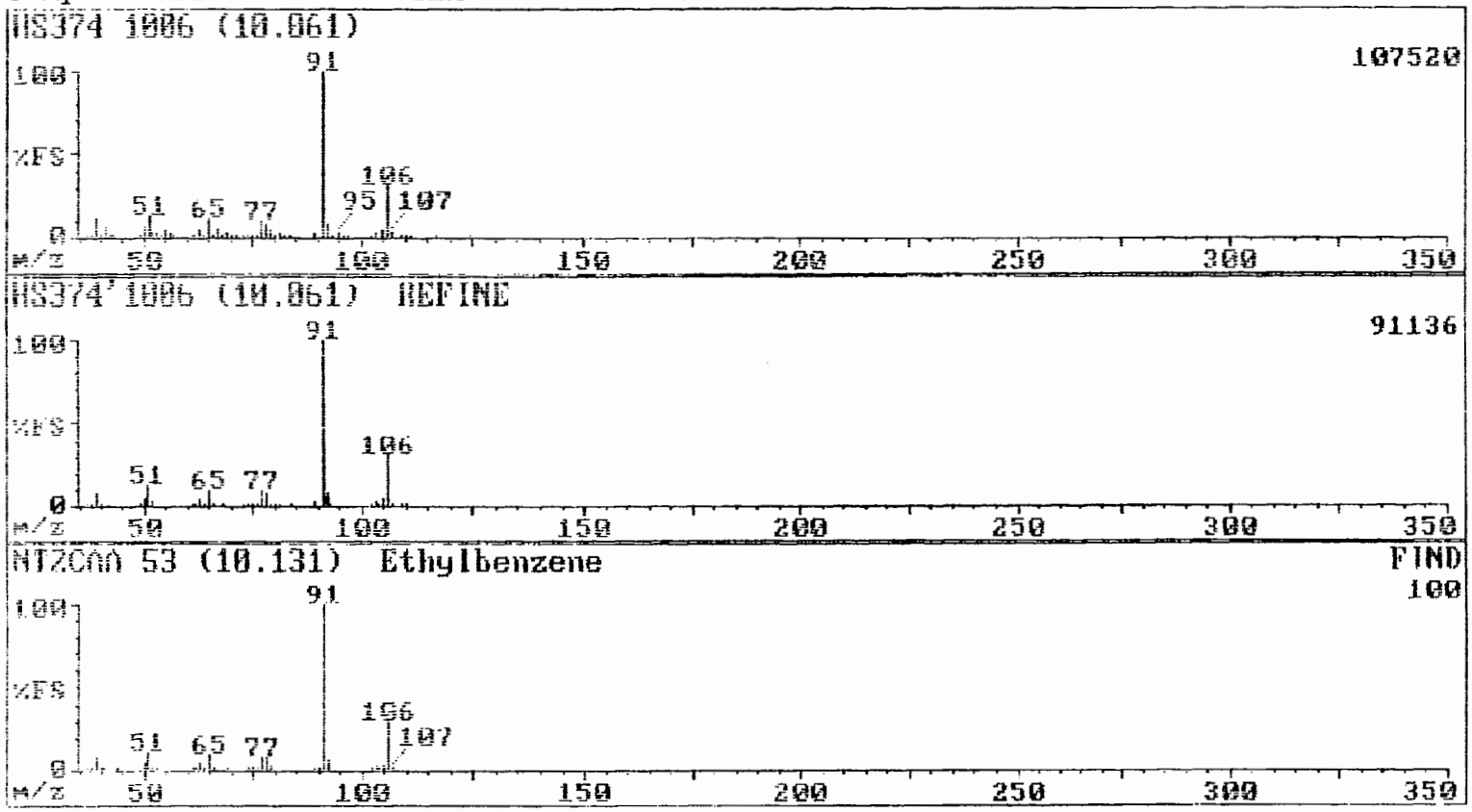
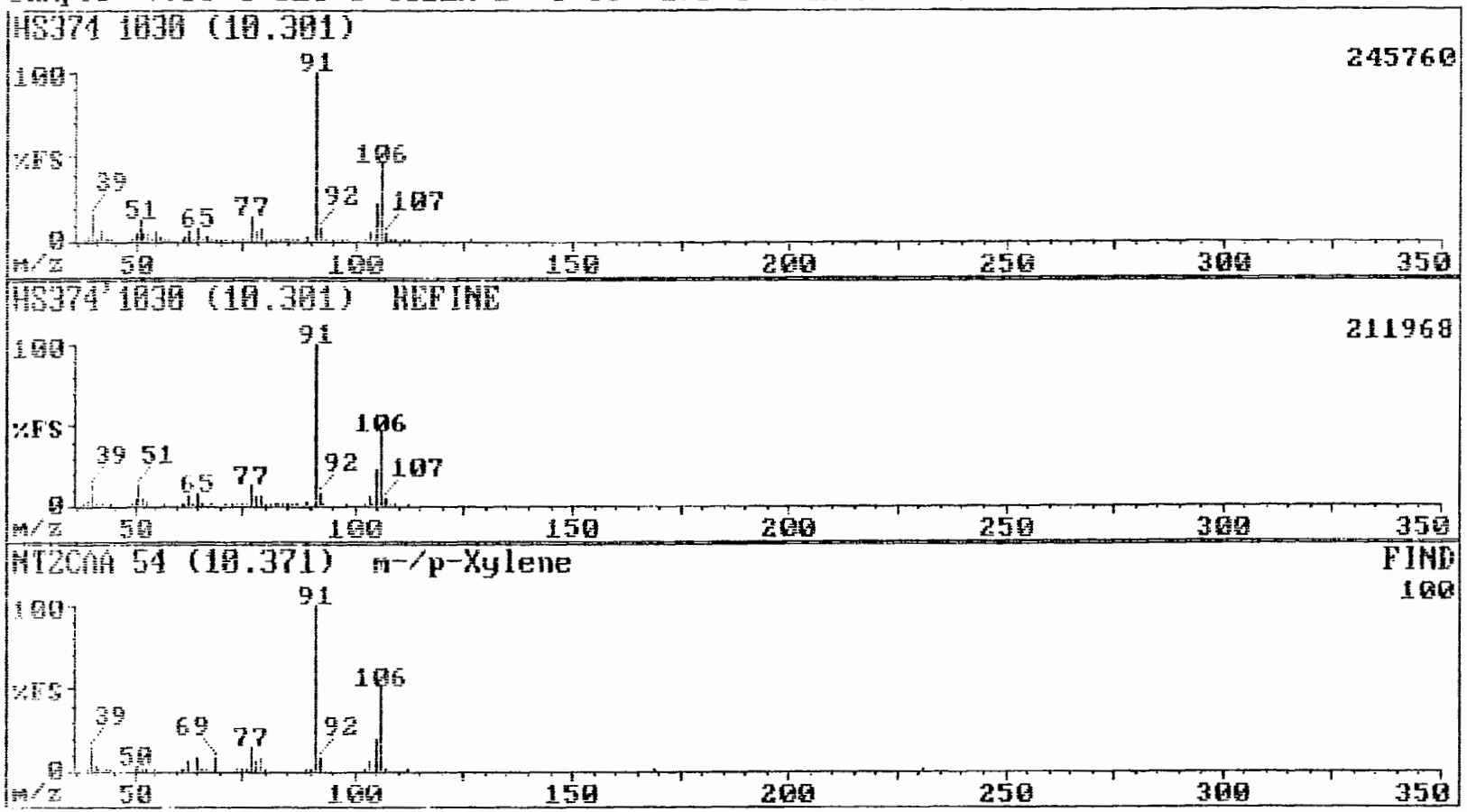
Sample: VOST-4 SET 3 TUBEA/B T/TC 173-46-18A/B TLI#42284 Instrument H



07-09-97 17:14 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 3 TUBEA/B T/TC 173-46-18A/B TLI#42284 Instrument H



07-09-97 17:14 Triangle Laboratories of RTP, Inc. (919) 544-5729

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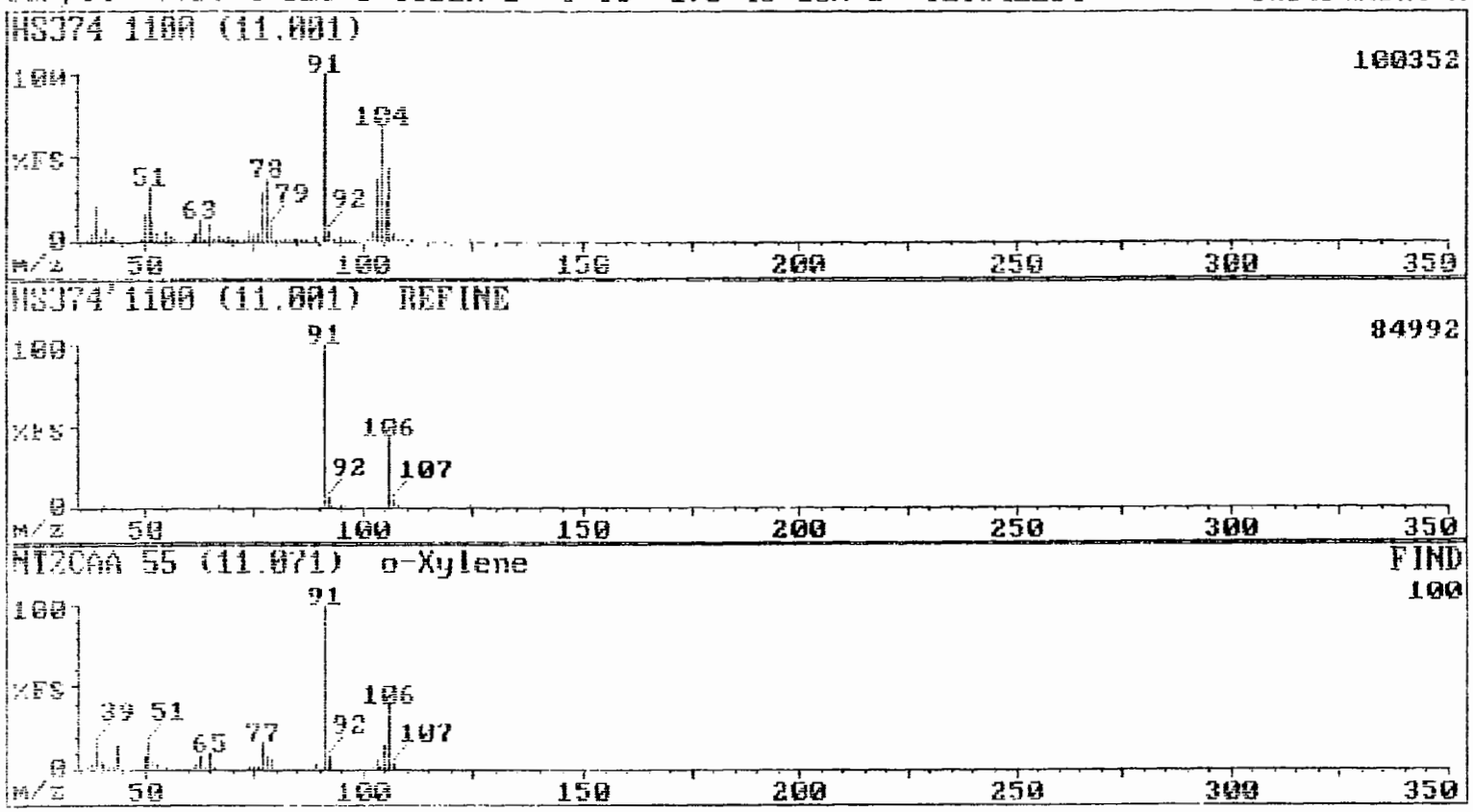
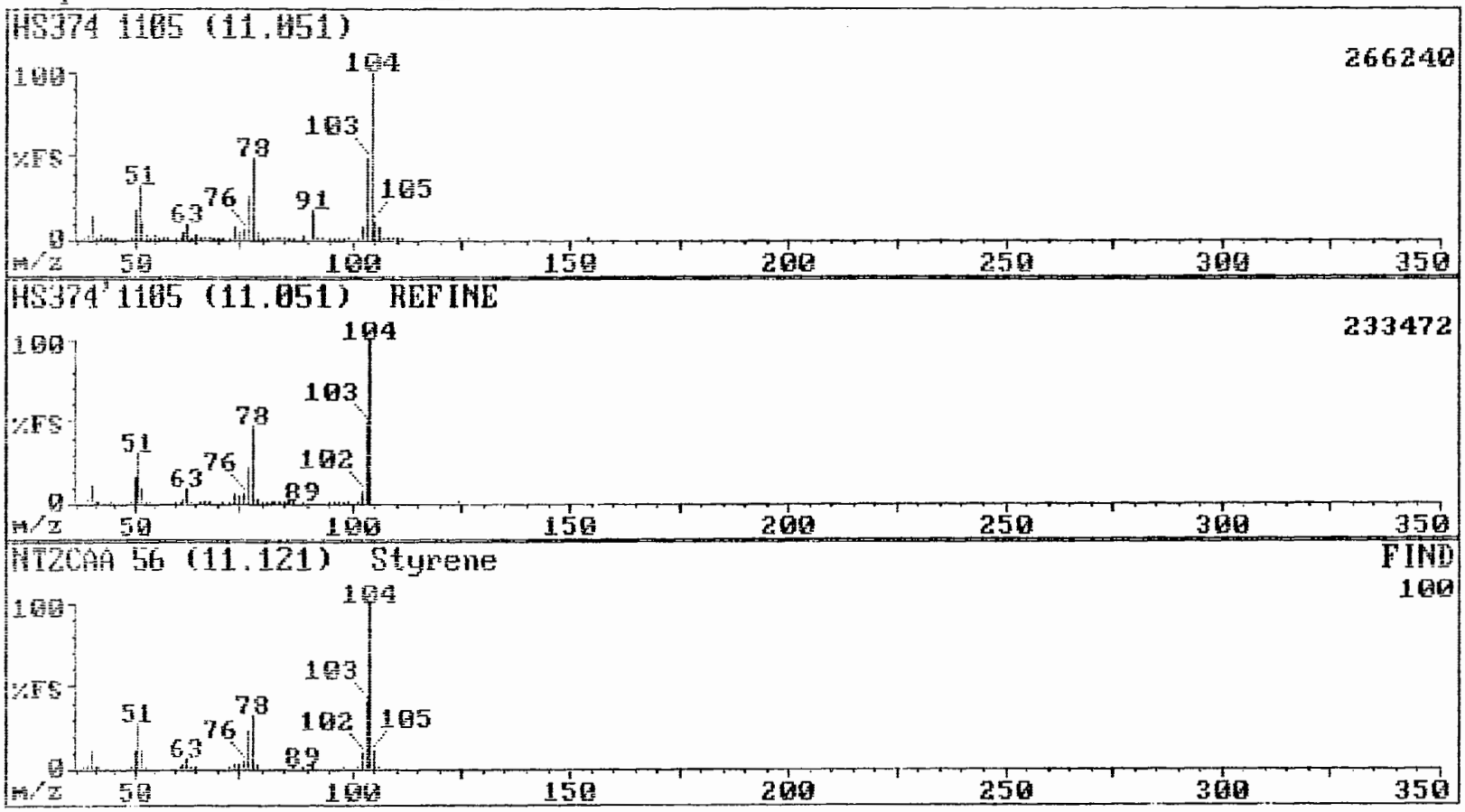


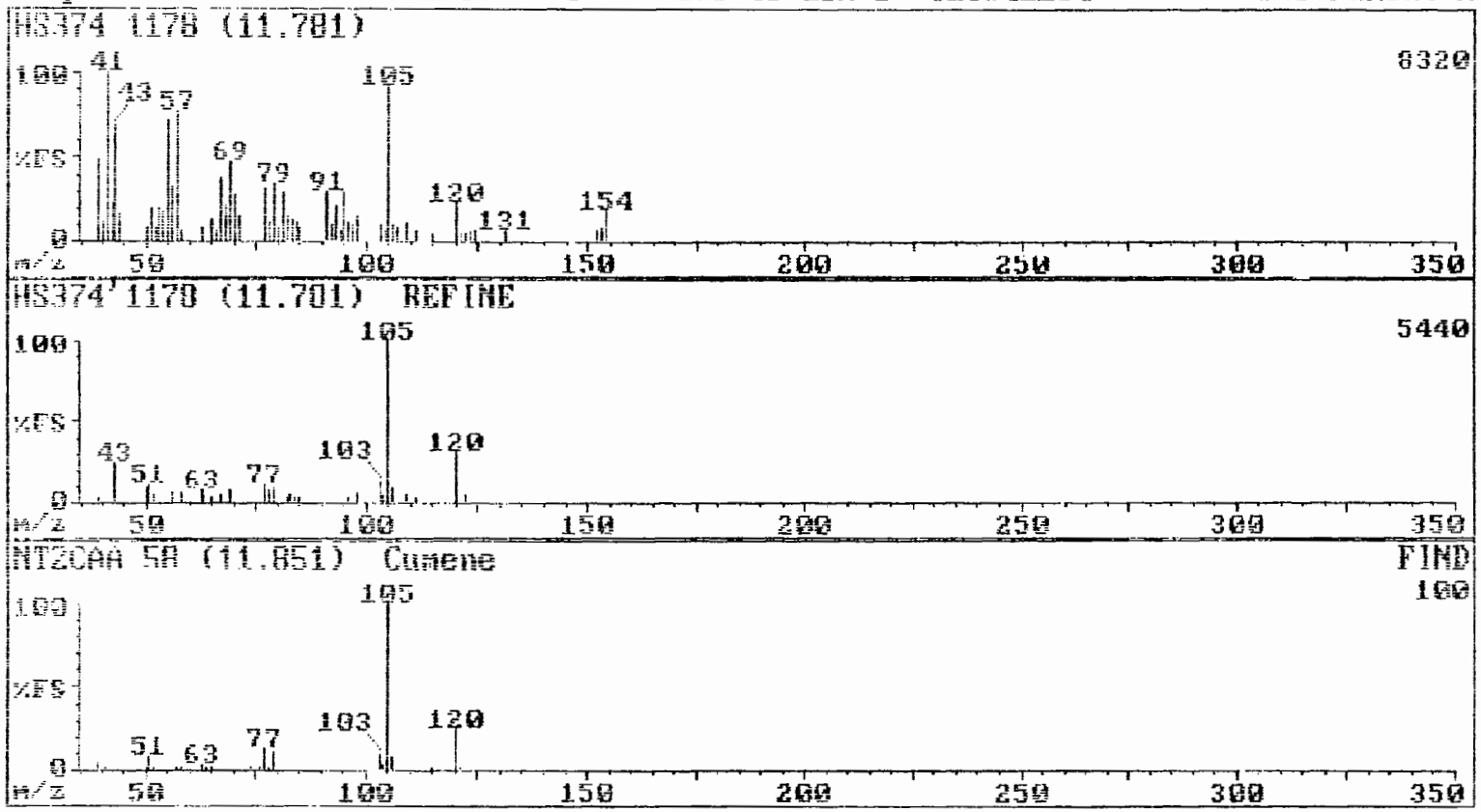
07-09-97 17:14 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 3 TUBEA/B T/TC 173-46-18A/B TLI#42284 Instrument H



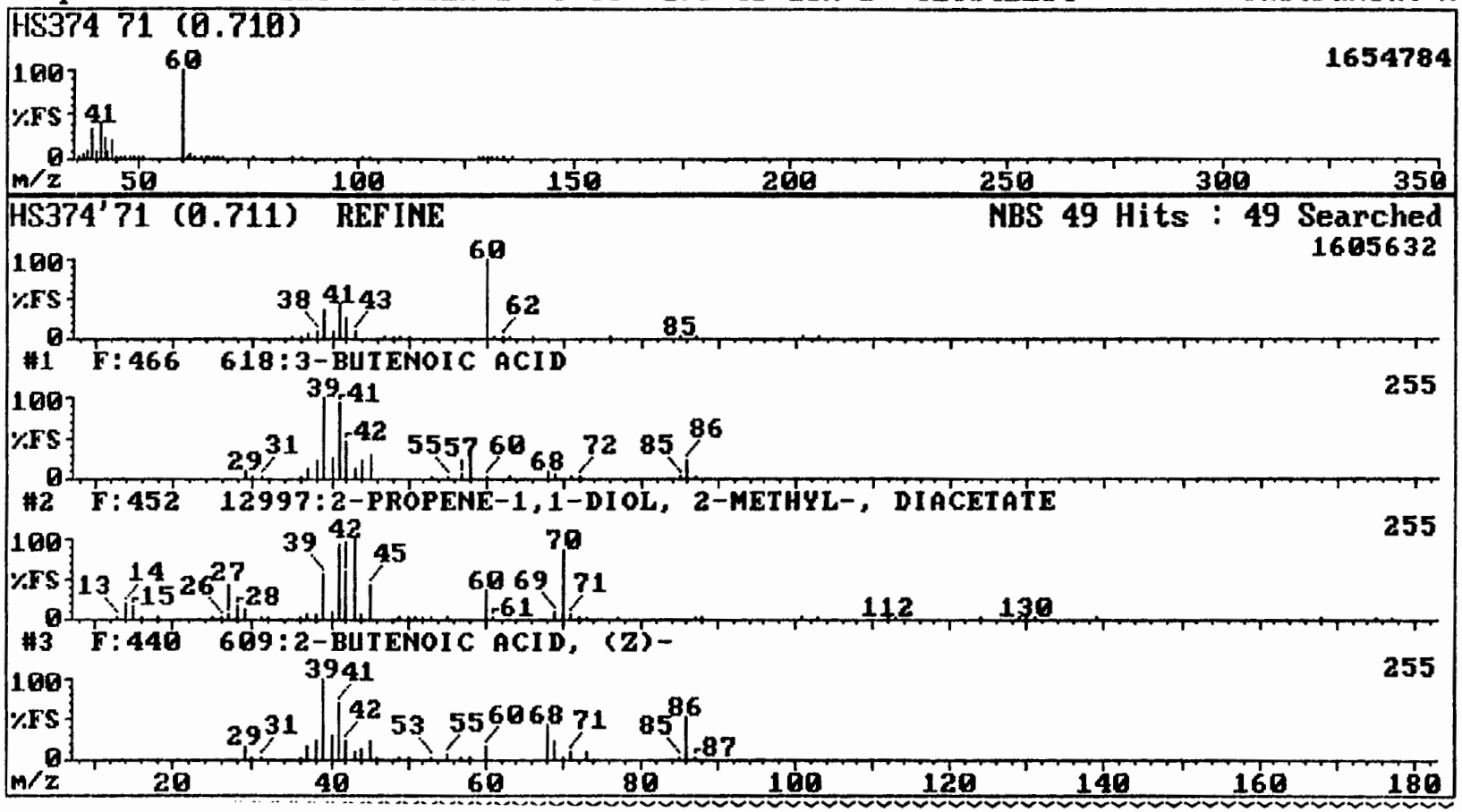
07-09-97 17:14 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 3 TUBEA/B T/TC 173-46-18A/B TLI#42284 Instrument H



09-Jul-97 17:14 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 3 TUBEA/B T/TC 173-46-18A/B TLI#42284 Instrument H



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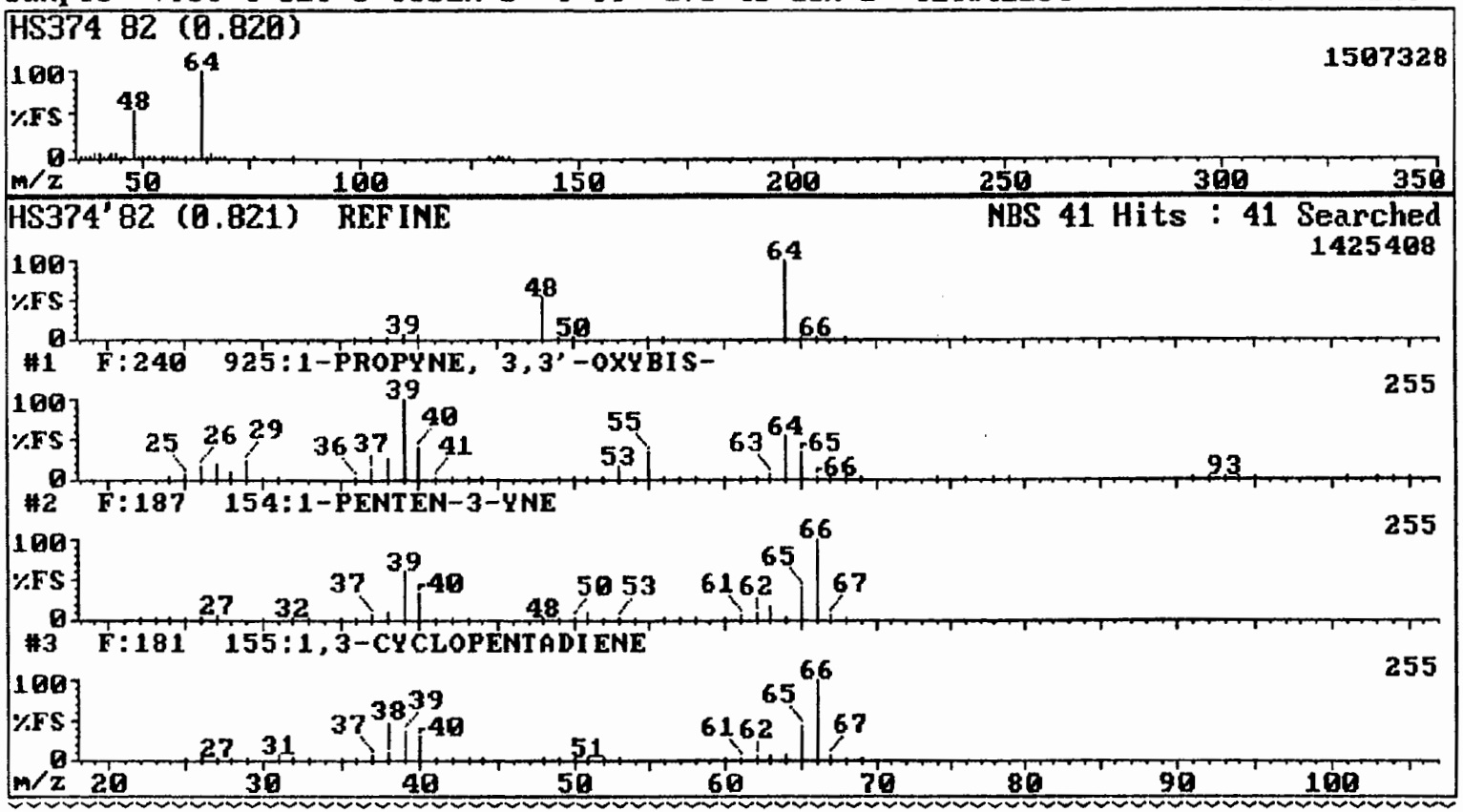
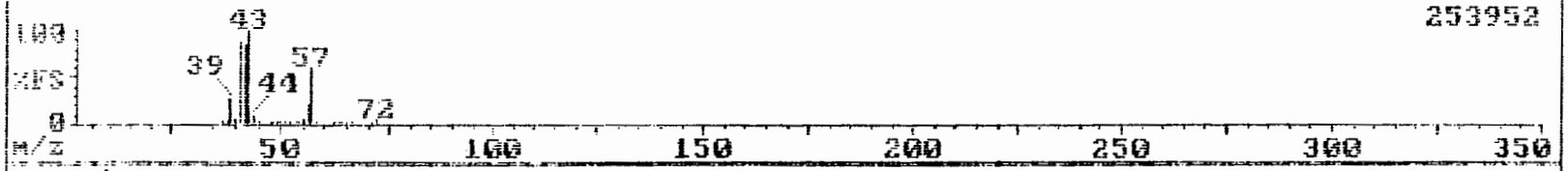
Sample: VOST-4 SET 3 TUBEA/B T/TC 173-46-18A/B TLI#42284 Instrument H



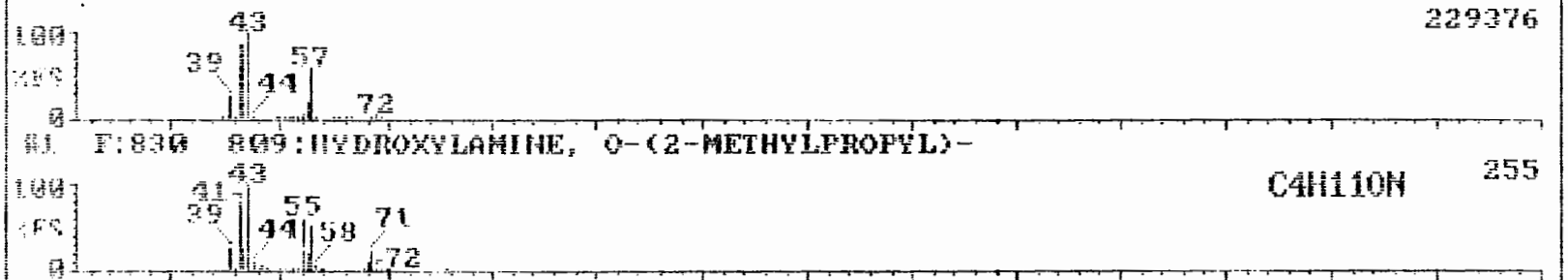
07/09/97 17:14 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 3 TUBEA/B T/TC 173-46-18A/B TLI#42284 Instrument: H

NBS374 160 (1.600) NBS 253952

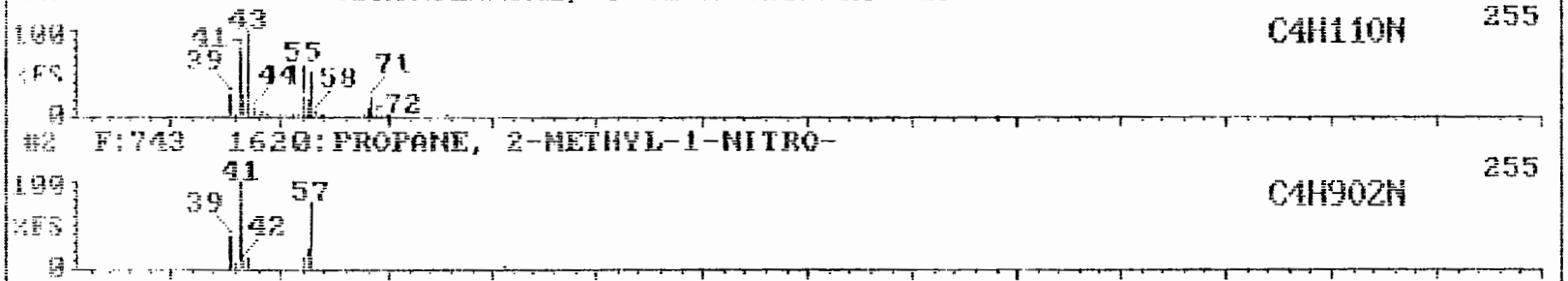


NBS374 160 (1.601) REFINE NBS 242 Hits : 242 Searched 229376



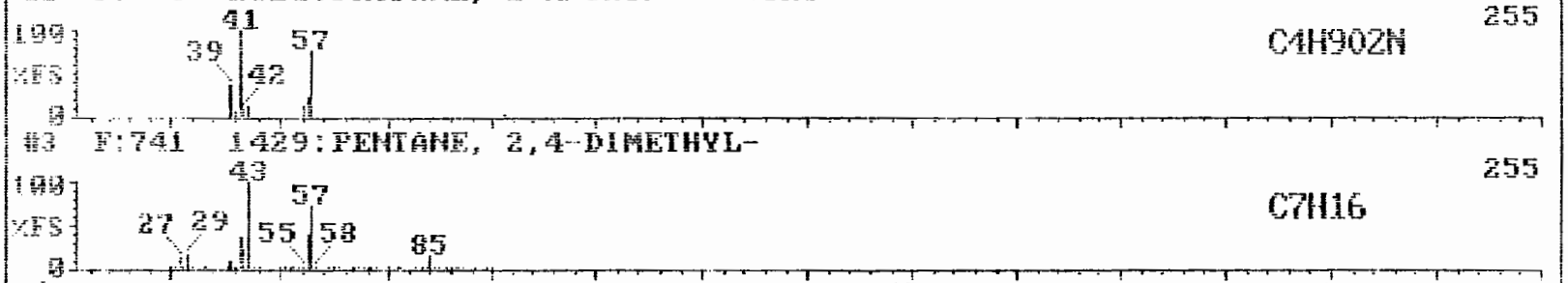
#1 F:830 809:HYDROXYLAMINE, O-(2-METHYLPROPYL)- 255

C4H11ON



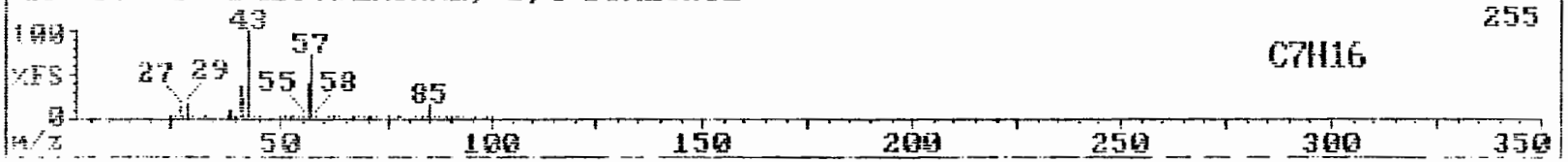
#2 F:743 1620:PROPANE, 2-METHYL-1-NITRO- 255

C4H9O2N



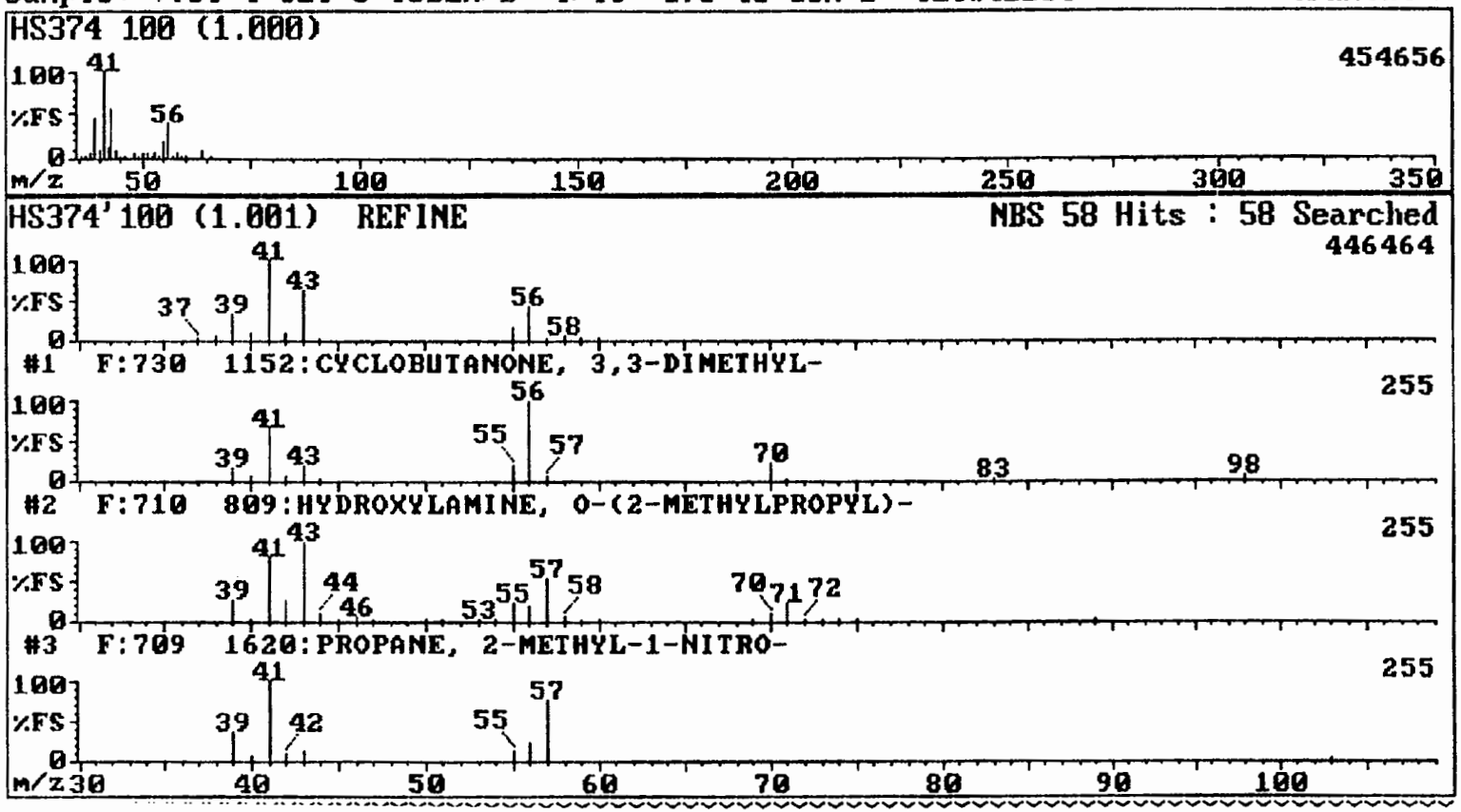
#3 F:741 1429:PENTANE, 2,4-DIMETHYL- 255

C7H16



09-Jul-97 17:14 Triangle Laboratories of RTP, Inc. (919) 544-5729

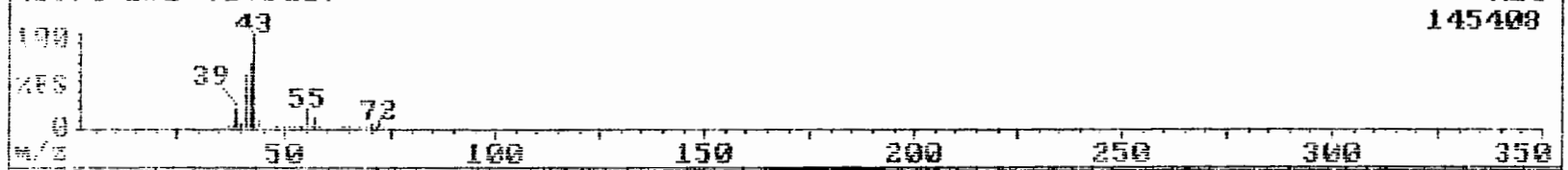
Sample: VOST-4 SET 3 TUBEA/B T/TC 173-46-18A/B TLI#42284 Instrument H



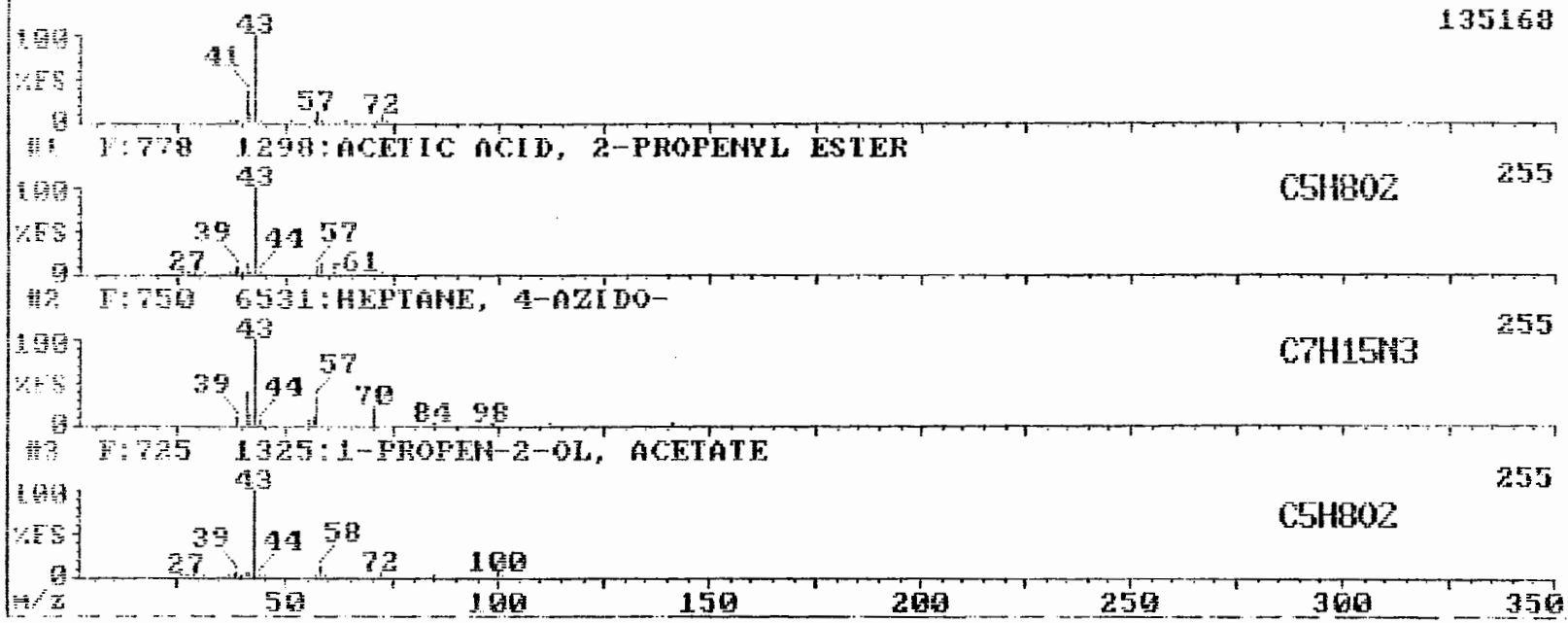
07/09/97 17:14 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 3 TUBEA/B T/TC 173-46-18A/B TLI#42284 Instrument: H

MS374 191 (1.918) NBS 145408



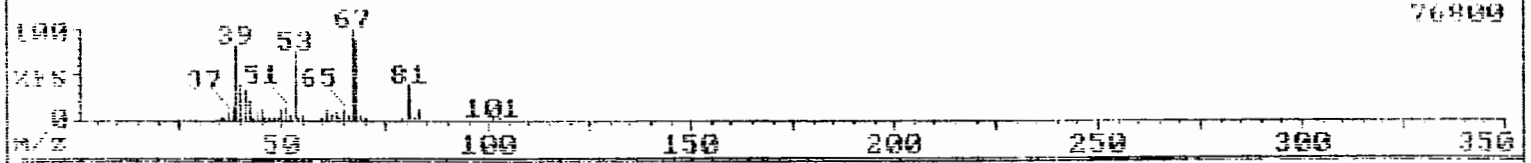
MS374 191 (1.911) REFINE NBS 83 Hits : 83 Searched 135168



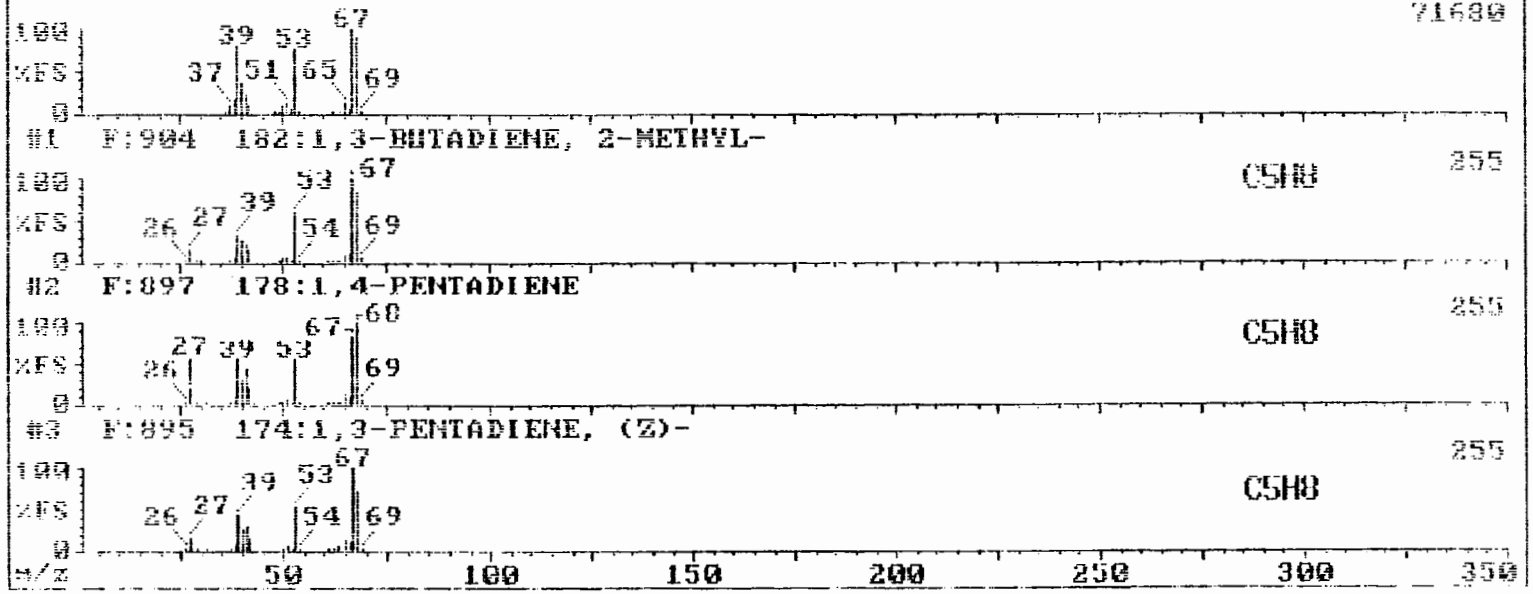
02/09/97 17:14 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 3 TUBEA/B T/TC 173-46-18A/B TL1#42204 Instrument: H

MS174 216 (2.160) NBS 76800

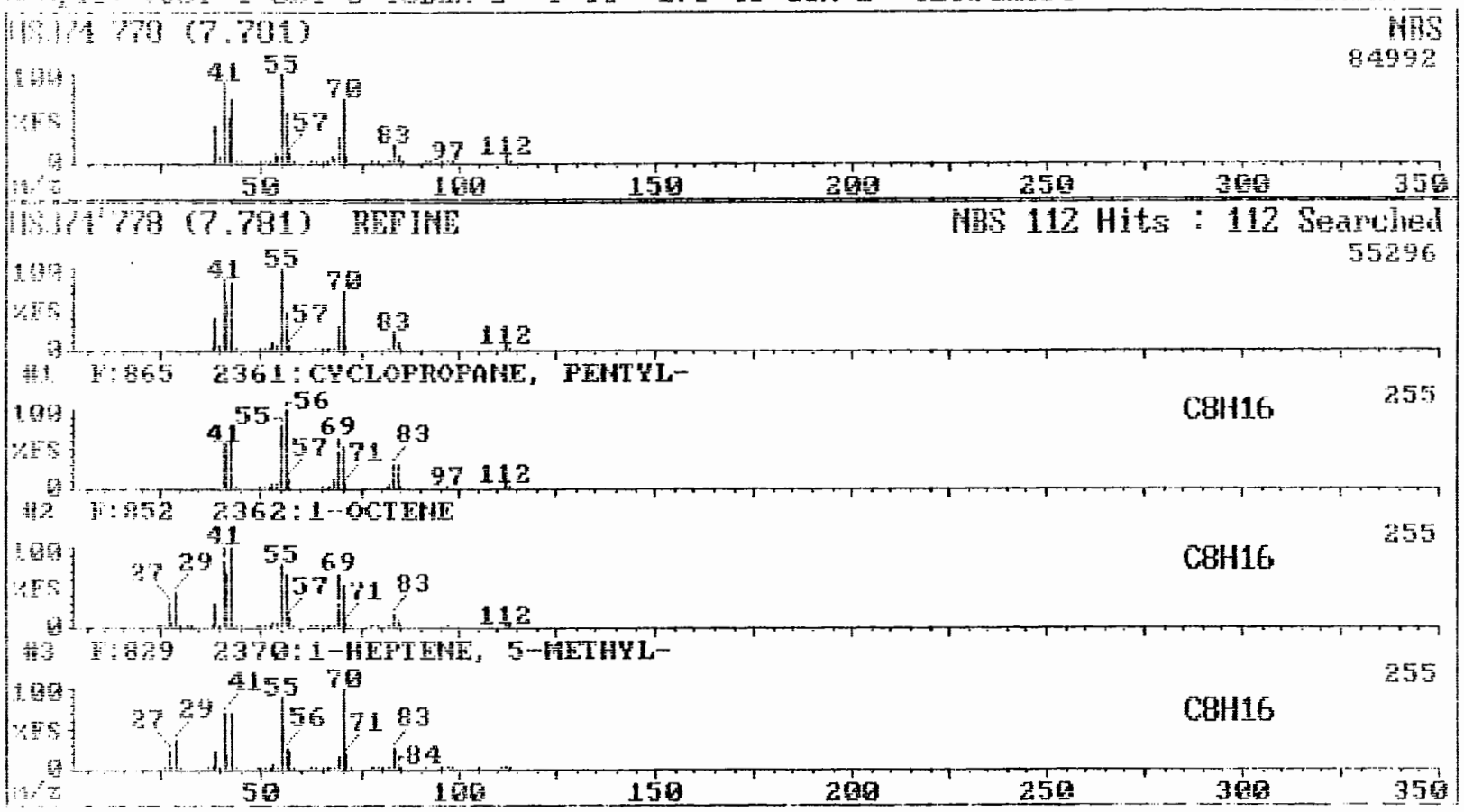


MS3/4 216 (2.161) REFINE NBS 33 Hits : 33 Searched 71680



02/09/97 17:14 Triangle Laboratories of RTP, Inc. (919) 544-5729

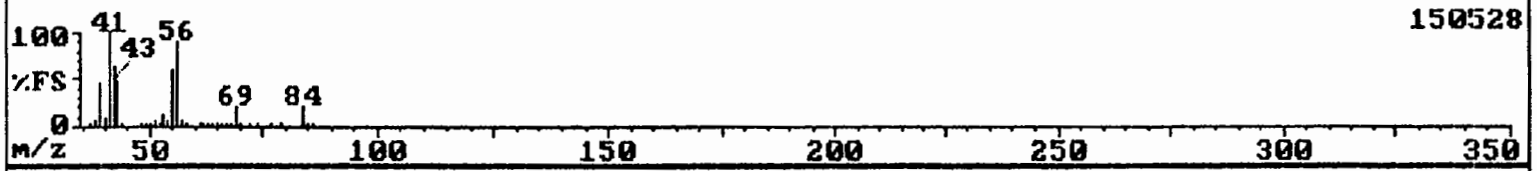
Sample: VOST-4 SET 3 TUBEA/B T/TC 173-46-18A/B TLI#42204 Instrument: H



09-Jul-97 17:14 Triangle Laboratories of RTP, Inc. (919) 544-5729

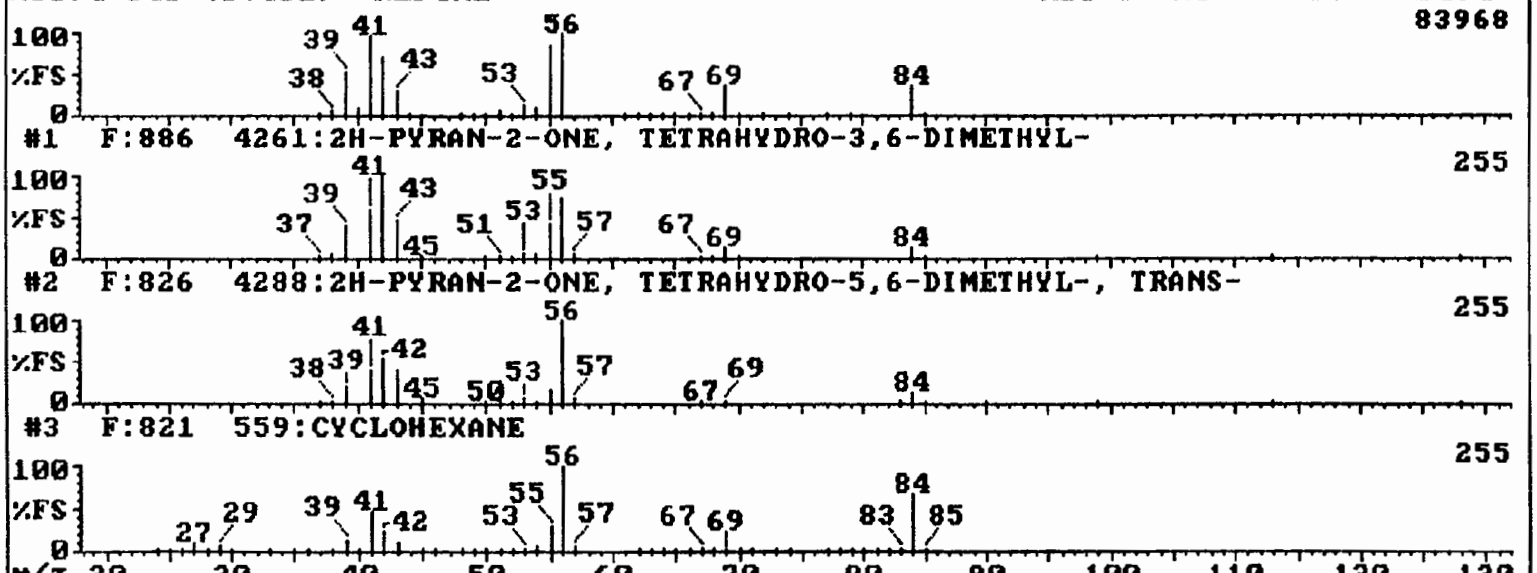
Sample: VOST-4 SET 3 TUBEA/B T/TC 173-46-18A/B TLI#42284 Instrument H

HS374 343 (3.430) 150528



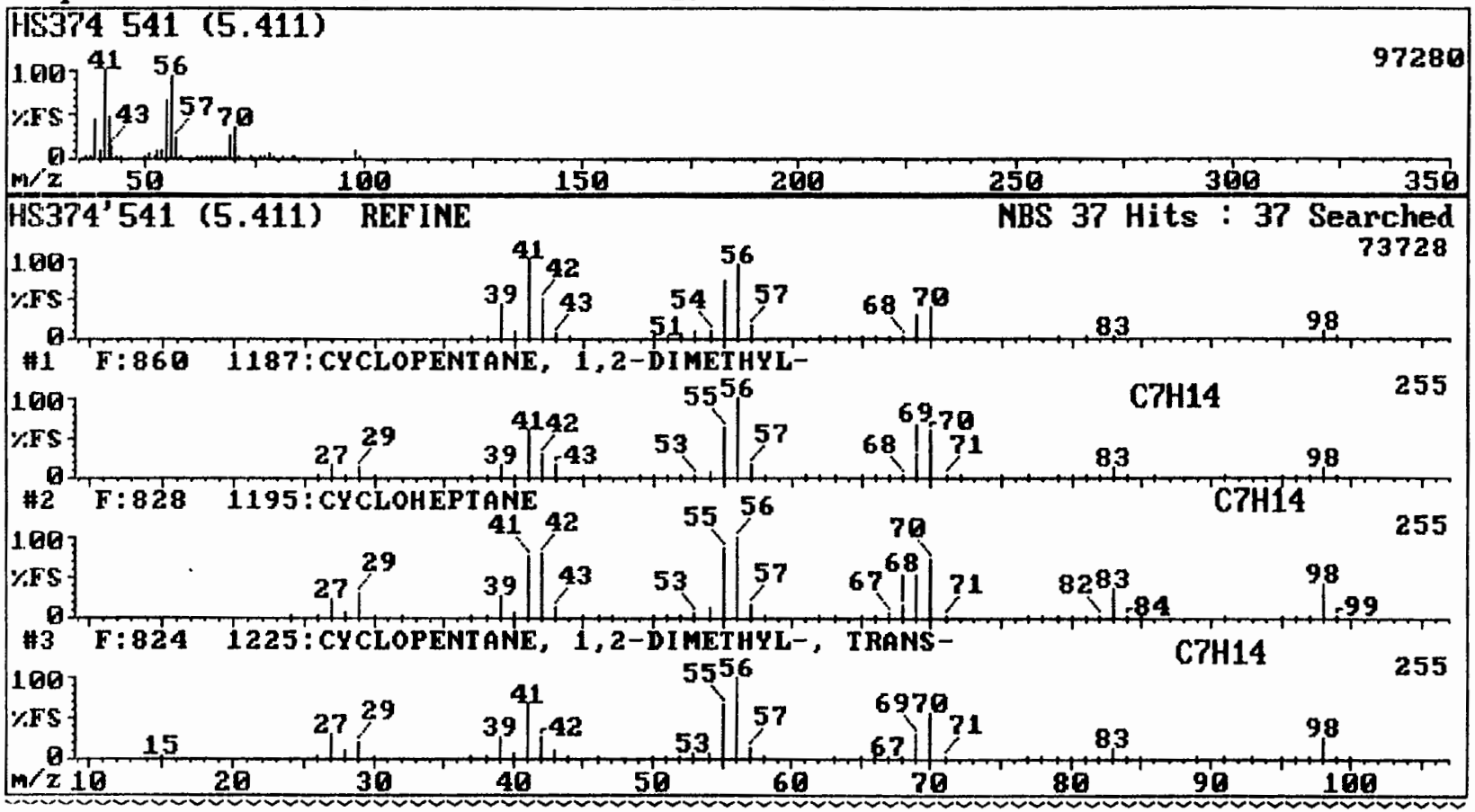
HS374'343 (3.431) REFINE NBS 61 Hits : 61 Searched

83968



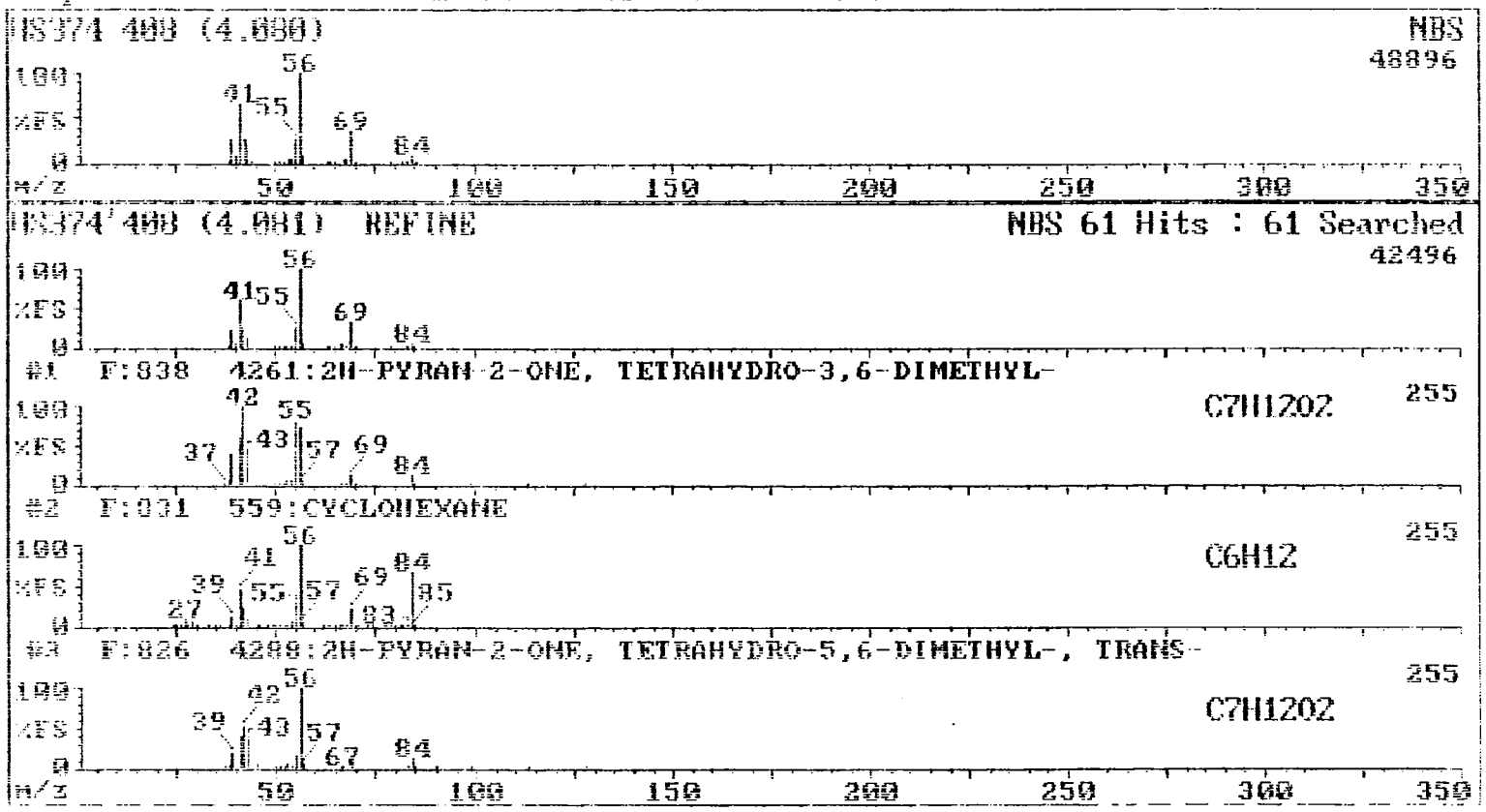
09-Jul-97 17:14 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 3 TUBEA/B T/TC 173-46-18A/B TLI#42284 Instrument H



02/09/97 17:14 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 3 TUBEA/B T/TC 173-46-10A/B TLI#42204 Instrument: H



Pacific Environmental Services

Project Number: 42284 | **Method 8240A VOST**
Sample File: HS375 | **Sample ID: VOST-4 SET 4 TUBEA/B T/TC**

Client Project: S407-003 | **Date Received: 06/30/97** | **Response File: ICALH708**
TLI ID: 173-46-19A,B
Date Analyzed : 07/09/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
Bromochloromethane		IS 1	4.47		
Chloromethane	0.209		0.92		0.05
Vinyl Chloride		U		0.001	0.05
1,3-Butadiene	0.259		1.08		0.05
Bromomethane	0.017	J	1.41		0.05
Chloroethane	0.235		1.54		0.05
Vinyl bromide		U		0.001	0.05
Trichlorofluoromethane	0.025	J	1.81		0.05
1,1-Dichloroethene		U		0.001	0.05
Iodomethane		U		0.001	0.05
Carbon disulfide	0.511		2.48		0.05
Acetone	0.041	BJ	2.55		0.05
Allyl chloride		U		0.001	0.05
Methylene chloride	0.070	B	2.95		0.05
trans-1,2-Dichloroethene		U		0.001	0.05
tert-Butyl methyl ether		U		0.001	0.05
Acrylonitrile	0.816		3.23		0.05
n-Hexane	0.114		3.53		0.05
1,1-Dichloroethane		U		0.001	0.05
1,2-Epoxybutane		U		0.003	0.05
cis-1,2-Dichloroethene		U		0.001	0.05
Chloroform		U		0.001	0.05
1,2-Dichloroethane		U		0.001	0.05
Isooctane		U		0.001	0.05
1,4-Difluorobenzene		IS 2	5.63		
Vinyl acetate		U		0.001	0.05

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

Triangle Laboratories of RTP, Inc.
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Savar v3.5
Printed: 15:04 07/22/1997

Pacific Environmental Services

Project Number: 42284 | **Method 8240A VOST**
Sample File: HS375 | **Sample ID: VOST-4 SET 4 TUBEA/B T/TC**

Client Project: S407-003 | **Date Received: 06/30/97** | **Response File: ICALH708**
TLI ID: 173-46-19A,B
Date Analyzed : 07/09/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
2-Butanone	0.023	J	4.34		0.05
1,1,1-Trichloroethane		U		0.001	0.05
Carbon tetrachloride		U		0.001	0.05
Benzene	1.205	BE	5.10		0.05
Trichloroethene		U		0.001	0.05
1,2-Dichloropropane		U		0.001	0.05
Ethyl acrylate		U		0.001	0.05
Methyl methacrylate	0.020	J	6.45		0.05
Bromodichloromethane		U		0.001	0.05
cis-1,3-Dichloropropene		U		0.001	0.05
trans-1,3-Dichloropropene		U		0.001	0.05
1,1,2-Trichloroethane		U		0.001	0.05
Dibromochloromethane		U		0.001	0.05
Ethylene dibromide		U		0.001	0.05
Bromoform		U		0.001	0.05
Chlorobenzene-d_5		IS 3	9.74		
4-Methyl-2-pentanone		U		0.001	0.05
Toluene	0.428	B	7.56		0.05
Tetrachloroethene		U		0.001	0.05
2-Hexanone		U		0.001	0.05
Chlorobenzene	0.007	J	9.79		0.05
Ethylbenzene	0.061		10.07		0.05
m-/p-Xylene	0.149		10.30		0.10
o-Xylene	0.062		11.01		0.05
Styrene	0.199		11.06		0.05
1,1,2,2-Tetrachloroethane		U		0.001	0.05

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

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Printed: 15:04 07/22/1997

Pacific Environmental Services

Project Number: 42284 | Method 8240A VOST
Sample File: HS375 | Sample ID: VOST-4 SET 4 TUBEA/B T/TC

Client Project: S407-003 | Date Received: 06/30/97 | Response File: ICALH708
TLI ID: 173-46-19A,B
Date Analyzed : 07/09/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
Cumene	0.004	J	11.78		0.05

Surrogate Summary	Amount (ug)	RT	IS Ref	%REC
1,2-Dichloroethane-d_4	0.248	5.07	1	99
Benzene-d_6	0.270	5.05	2	108
Toluene-d_8	0.289	7.47	3	116

Reviewed by TW Date 7/22/97

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

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Printed: 15:04 07/22/1997

Pacific Environmental Services

Project Number: 42284 Method 8240A

Sample File: HS375 Sample ID: VOST-4 SET 4 TUBEA/B T/TC

Client Project:	S407-003	Date Received:	06/30/97
TLI ID:	173-46-19A,B	Date Analyzed:	07/09/97
	Dilution Factor:	1.00	

Tentatively Identified Compounds

Name	RT	Area	IS RT	IS Area	Amount, ug
Unknown	0.711	41059792	4.481	6871537	1.494
Sulfur Dioxide	0.841	16206607	4.481	6871537	0.590
C4H8 Isomer	1.011	10696607	4.481	6871537	0.389
C5H10 Isomer	1.870	8357539	4.481	6871537	0.304
C6H12 Isomer	3.441	7794570	4.481	6871537	0.284
C8H16 Isomer	7.791	11798414	9.741	11533643	0.256
C5H8 Isomer	2.180	5956399	4.481	6871537	0.217
C9H18 Isomer	10.471	8088882	9.741	11533643	0.175
C7H14 Isomer	5.421	6596451	5.631	10181564	0.162
Octane	7.941	6027441	9.741	11533643	0.131

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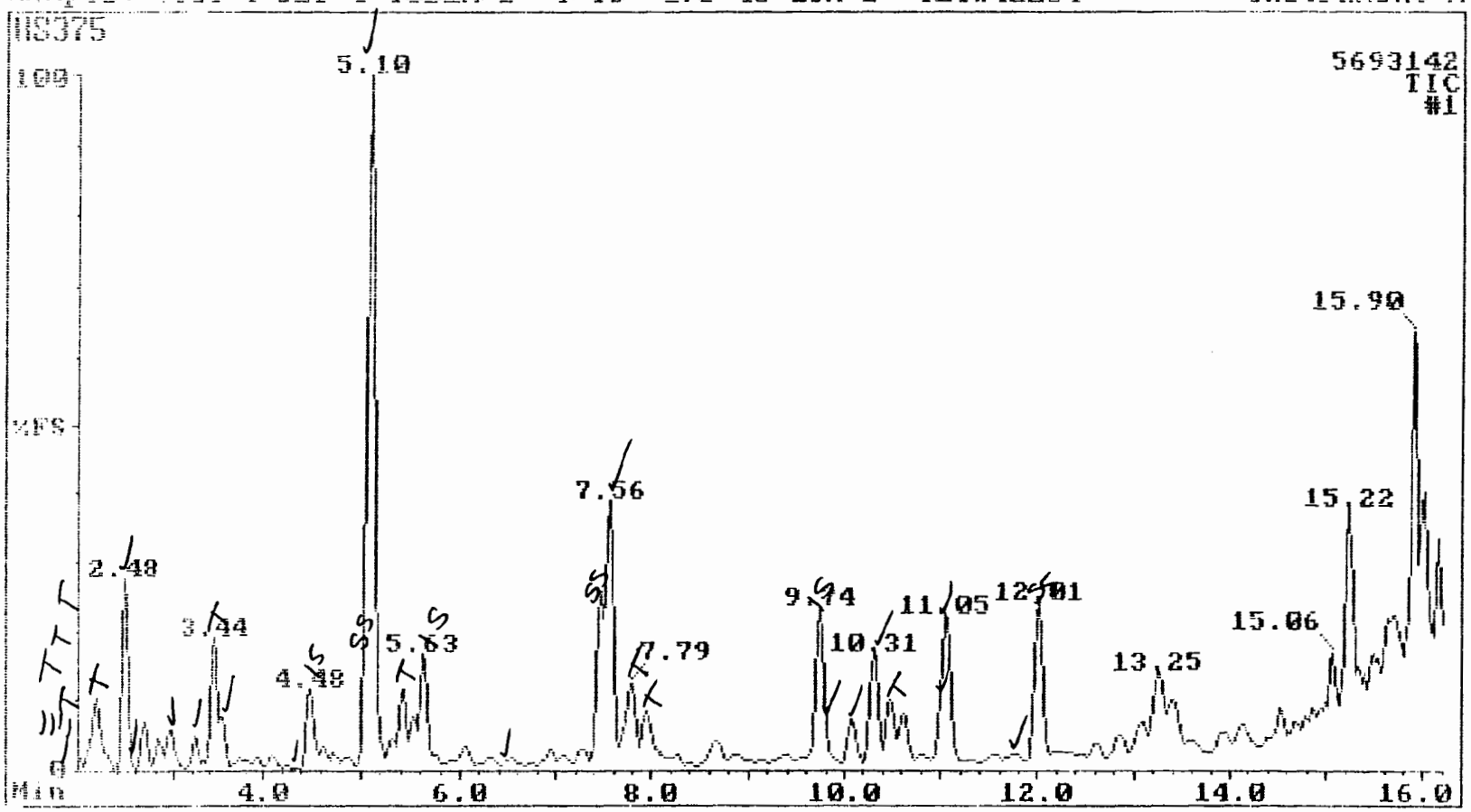
Printed: 10:26 07/25/97

07-09-97 18:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 4 TUBEA/B T/TC 173-46-19A/B TLI#42284 Instrument H



Data Review: TW
Date: 7-22-97

[illegible]

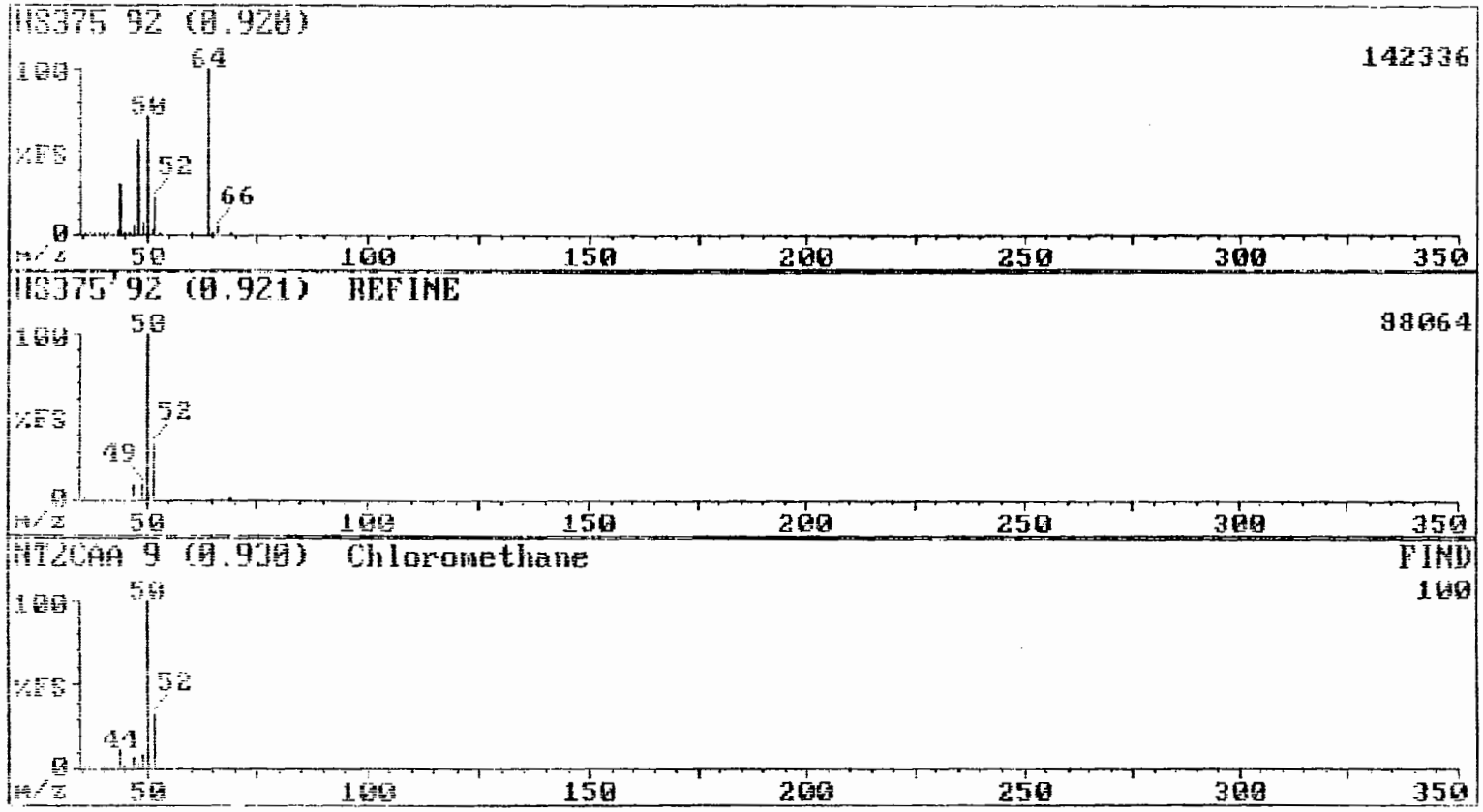
No.	MAT	FOR	REV	Delta	Area	P.Flags	RT	QN	Name
1	100	86	99	-4	887988	bb	4.47	128	Bromochloromethane
2	100	91	97	2	2369[illegible]	bb	5.63	114	1,4-Difluorobenzene
3	100	95	98	-1	2993348	bv	9.74	117	Chlorobenzene-d5
4	51	19	64	1	1035163	bv	5.07	63	1,2-Dichloroethane-d4
5	100	81	82	-1	2955888	bv	5.05	84	Benzene-d6
6	100	90	99	1	3929913	bv	7.47	98	Toluene-d8
~~7~~	~~15~~	~~12~~	~~38~~	~~77~~	~~88337~~	~~bv~~	~~12.24~~	98	o-Xylene-d10 FP TW
8	100	86	94	1	1990460	vv	12.01	95	4-Bromofluorobenzene
9	98	76	80	0	679844	bv	0.92	50	Chloromethane
~~10~~	~~12~~	~~14~~	~~24~~	~~33~~	~~1685748~~	~~bb~~	~~0.72~~	62	Vinyl Chloride FP TW
11	100	83	100	0	~~2589134~~ A 1058296		~~1.61~~ 1.08	39	1,3-Butadiene m TW
12	93	53	95	0	56703	bb	1.41	94	Bromomethane
13	60	38	59	1	508247	A	1.54	64	Chloroethane
14	0	0	0	0	0		0.00	106	Vinyl bromide
15	68	30	83	-1	111684	bb	1.81	101	Trichlorofluoromethane
16	0	0	0	0	0		0.00	96	1,1-Dichloroethene
17	0	0	0	0	0		0.00	142	Iodomethane
18	100	81	99	0	5002344	bv	2.48	76	Carbon disulfide
19	72	43	74	0	82455	bv	2.55	43	Acetone
~~20~~	~~66~~	~~42~~	~~67~~	~~1~~	~~14012~~	~~vb~~	~~2.80~~	76	Allyl chloride FP TW
21	82	52	79	1	212284	bv	2.95	84	Methylene chloride
22	0	0	0	0	0		0.00	96	trans-1,2-Dichloroethene
23	0	0	0	0	0		0.00	73	tert-Butyl methyl ether
24	100	74	94	-1	545127	bv	3.23	53	Acrylonitrile
25	100	95	100	-1	827024	bv	3.53	57	n-Hexane
26	0	0	0	0	0		0.00	63	1,1-Dichloroethane
~~27~~	~~56~~	~~45~~	~~57~~	~~8~~	~~65268~~	~~bv~~	~~4.09~~	42	1,2-Epoxybutane FP TW
28	0	0	0	0	0		0.00	96	cis-1,2-Dichloroethene
29	0	0	0	0	0		0.00	83	Chloroform
30	0	0	0	0	0		0.00	62	1,2-Dichloroethane
~~31~~	~~40~~	~~55~~	~~62~~	~~29~~	~~750059~~	~~bv~~	~~5.53~~	57	Isooctane
~~32~~	~~31~~	~~29~~	~~62~~	~~-29~~	~~1226876~~	~~A~~	~~3.44~~	43	Vinyl acetate FP TW
33	75	55	69	-2	8672	A	4.34	72	2-Butanone
34	0	0	0	0	0		0.00	97	1,1,1-Trichloroethane
35	0	0	0	0	0		0.00	117	Carbon tetrachloride
36	100	93	100	0	14473840	bv	5.10	78	Benzene
~~37~~	~~34~~	~~10~~	~~45~~	~~-1~~	~~5336~~	~~bb~~	~~5.86~~	~~130~~	Trichloroethene
~~38~~	~~20~~	~~16~~	~~45~~	~~18~~	~~4700~~	~~A~~	~~6.30~~	63	1,2-Dichloropropane FP TW
~~39~~	~~39~~	~~50~~	~~64~~	~~13~~	~~249880~~	~~bb~~	~~6.05~~	55	Ethyl acrylate
40	95	70	86	-1	45826	vb	6.45	69	Methyl methacrylate
41	0	0	0	0	0		0.00	83	Bromodichloromethane
42	0	0	0	0	0		0.00	75	cis-1,3-Dichloropropene
43	0	0	0	0	0		0.00	75	trans-1,3-Dichloropropene
44	0	0	0	0	0		0.00	97	1,1,2-Trichloroethane
45	0	0	0	0	0		0.00	129	Dibromochloromethane
46	0	0	0	0	0		0.00	107	Ethylene dibromide
47	0	0	0	0	0		0.00	173	Bromoform
~~48~~	~~36~~	~~29~~	~~76~~	~~19~~	~~139715~~	~~vv~~	~~7.26~~	43	4-Methyl-2-pentanone FP TW
49	100	94	99	1	3795340	bv	7.56	92	Toluene
~~50~~	~~34~~	~~19~~	~~45~~	~~-1~~	~~3226~~	~~bb~~	~~8.35~~	164	Tetrachloroethene FP TW

Data Review: TW
Date: 7-22-97

No	MAT	FOR	REV	Delta	Area	P.Flags	RT	QM	Name
~~31~~	~~[illegible]~~	~~17~~	~~56~~	~~[illegible]~~	~~[illegible]~~	~~[illegible]~~	~~[illegible]~~	43	2-Hexanone FP TW
32	34	22	69	1	36092	bb	9.79	112	Chlorobenzene
33	100	86	98	0	373381	bv	10.07	106	Ethylbenzene
34	100	86	94	-1	1140754	vv	10.30	106	m-/p-Xylene
35	100	79	85	1	451484	bv	11.01	106	o-Xylene
36	100	91	97	1	2401667	bv	11.06	104	Styrene
~~37~~	~~17~~	~~5~~	~~47~~	~~-20~~	~~[illegible]~~	~~A~~	~~12.25~~	83	1,1,2,2-Tetrachlor FP TW
38	59	29	67	0	104289	bv	11.78	105	Cumene

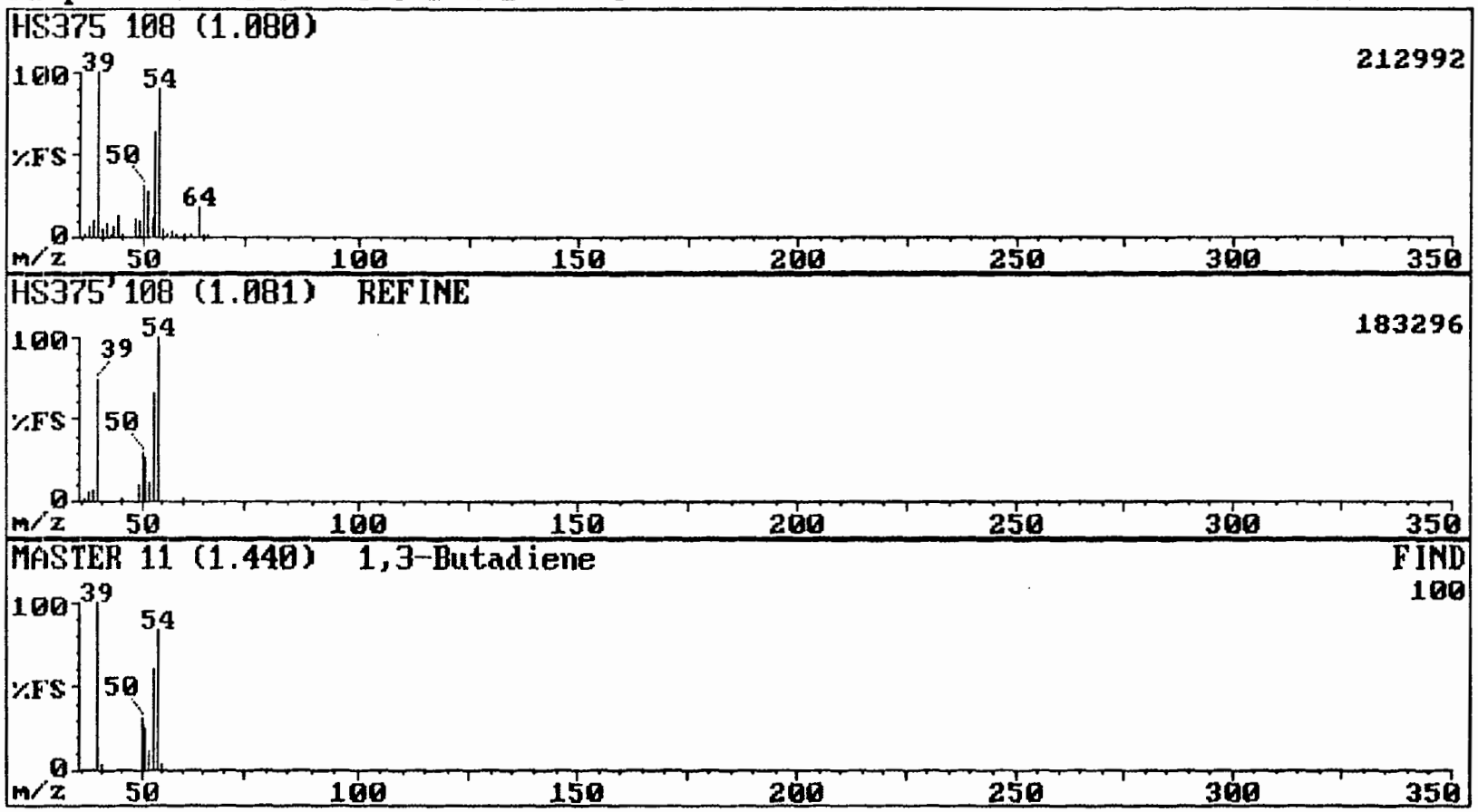
07-09-97 10:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 4 TUBEA/B T/TC 173-46-19A/B TLI#42284 Instrument H



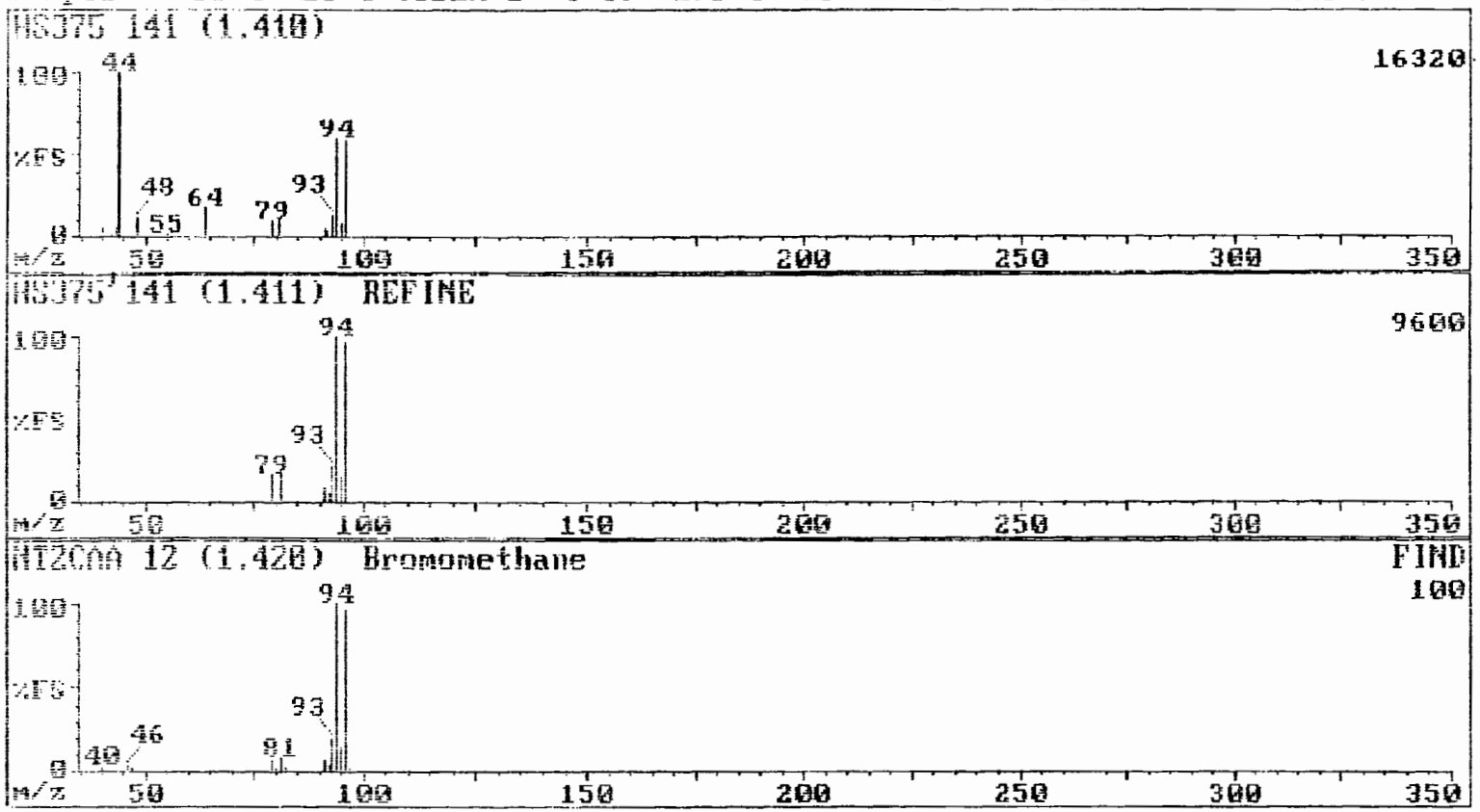
09-Jul-97 18:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 4 TUBEA/B T/TC 173-46-19A/B TLI#42284 Instrument H



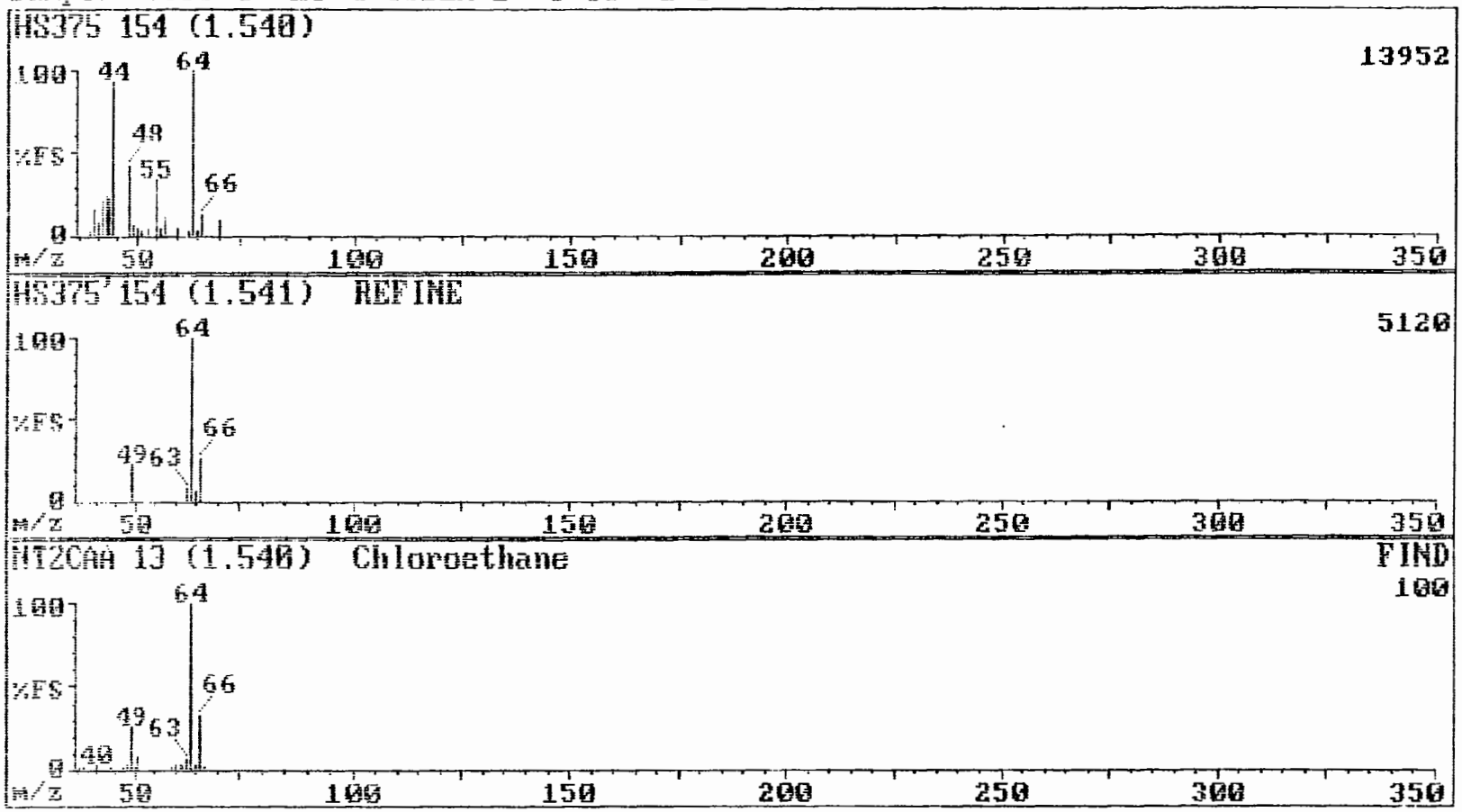
07-09-97 18:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 4 TUBEA/B T/TC 173-46-19A/B TLI#42284 Instrument H



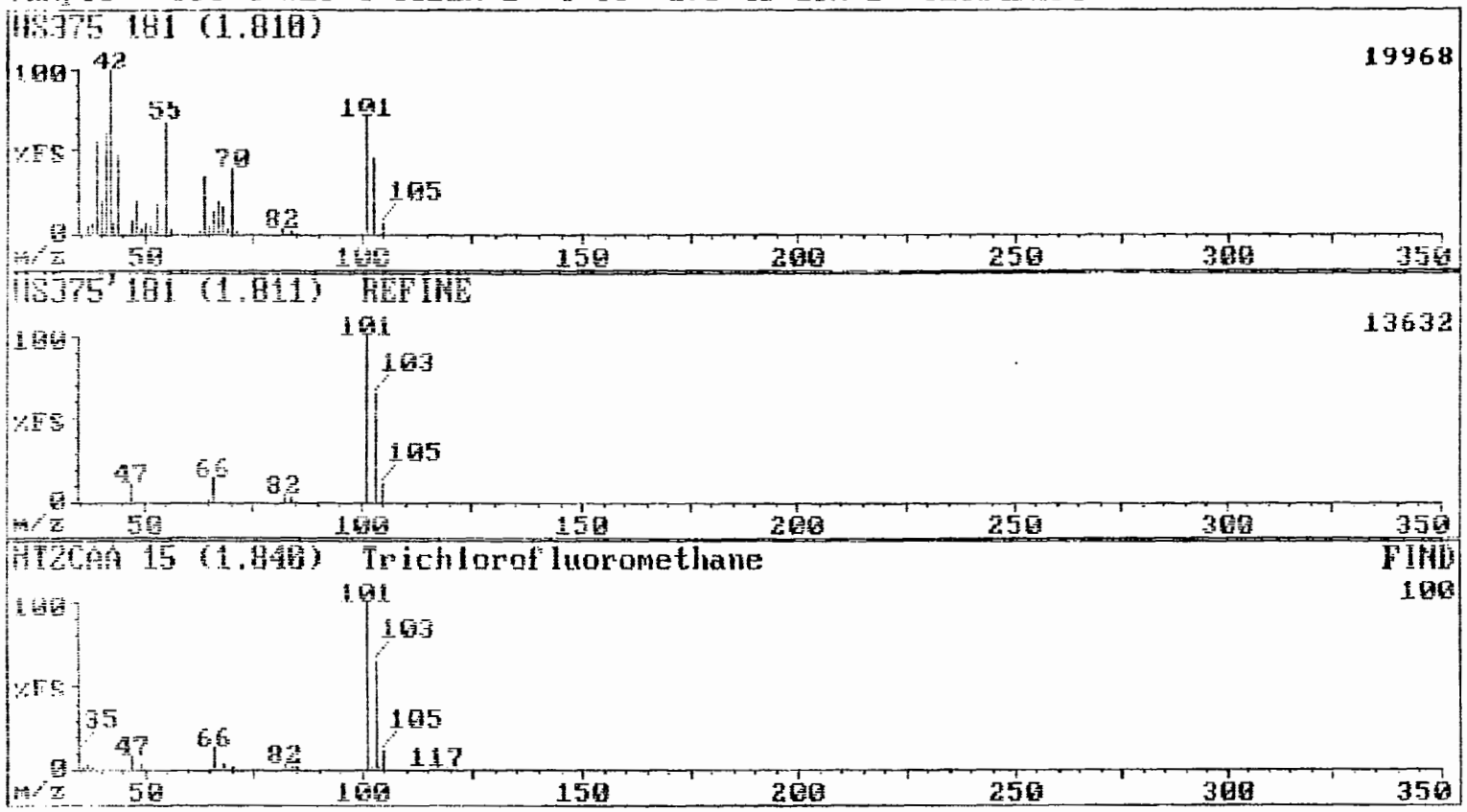
07-09-97 18:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 4 TUBEA/B T/TC 173-46-19A/B TLI#42284 Instrument H



07-09-97 18:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

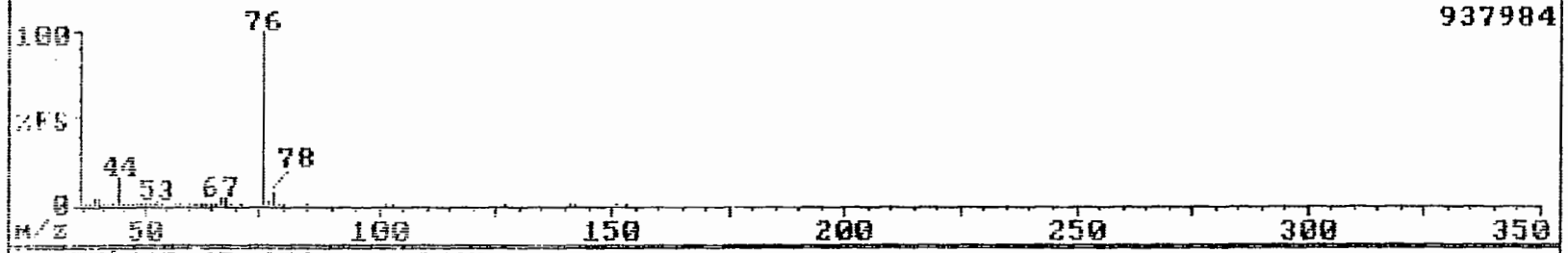
Sample: VOST-4 SET 4 TUBEA/B T/TC 173-46-19A/B TLI#42284 Instrument II



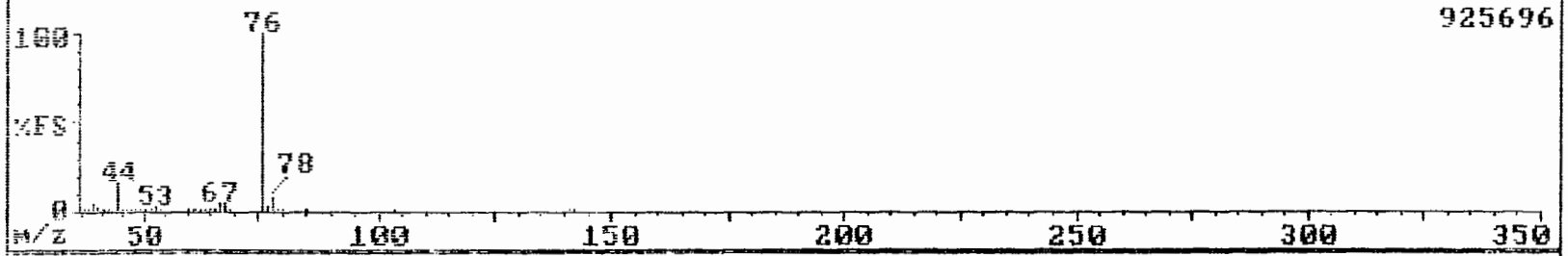
07-09-97 18:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 4 TUBEA/B T/TC 173-46-19A/B TLI#42284 Instrument H

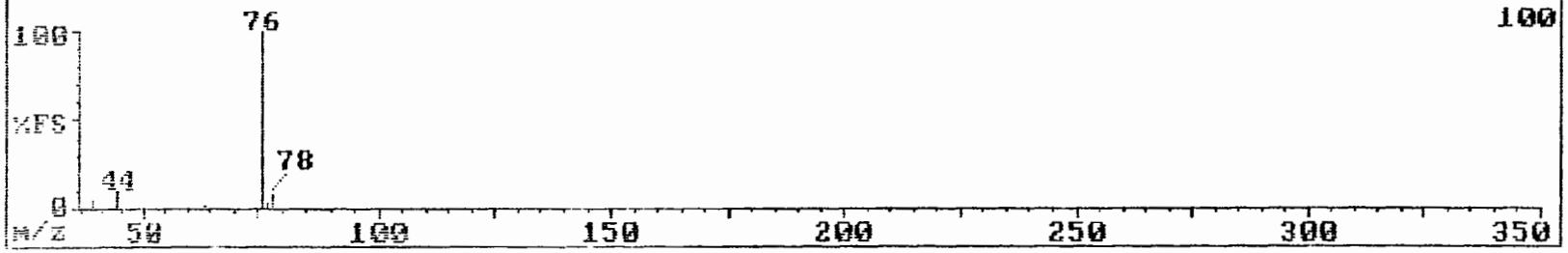
HS375 248 (2.480)



HS375'248 (2.481) REFINE

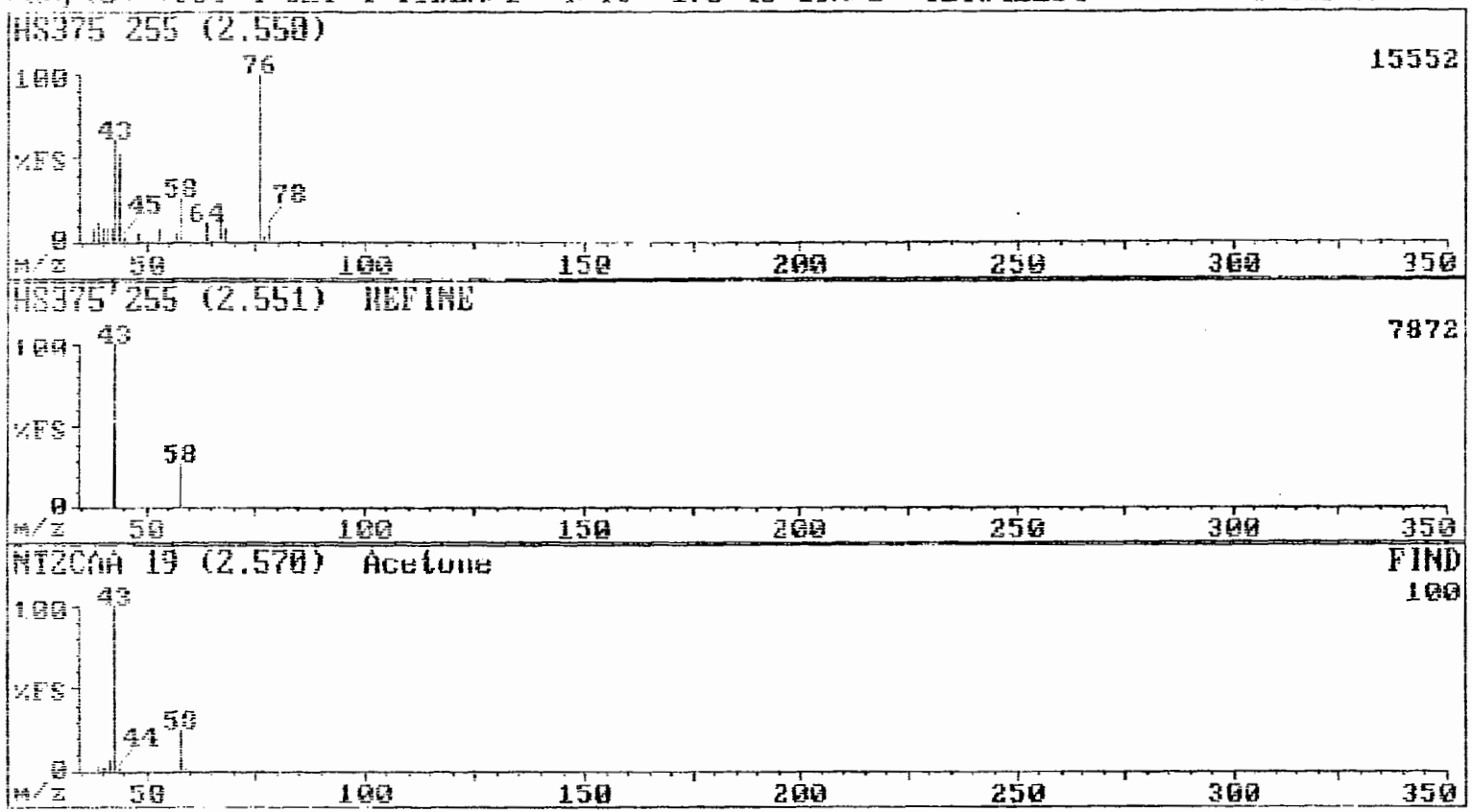


NTZCAA 18 (2.500) Carbon disulfide FIND 100



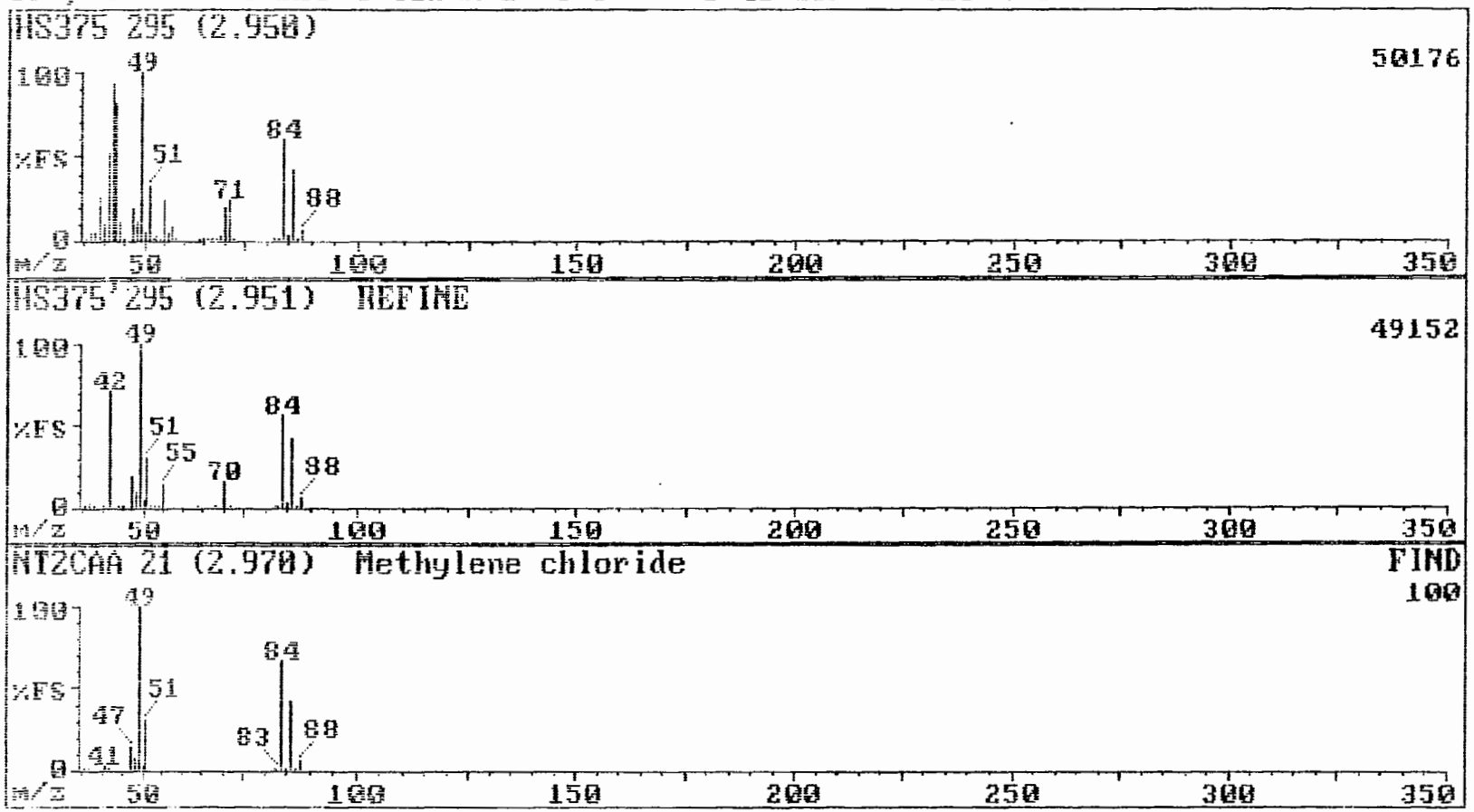
07-09-97 18:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 4 TUBEA/B T/TC 173-46-19A/B TLI#42284 Instrument H



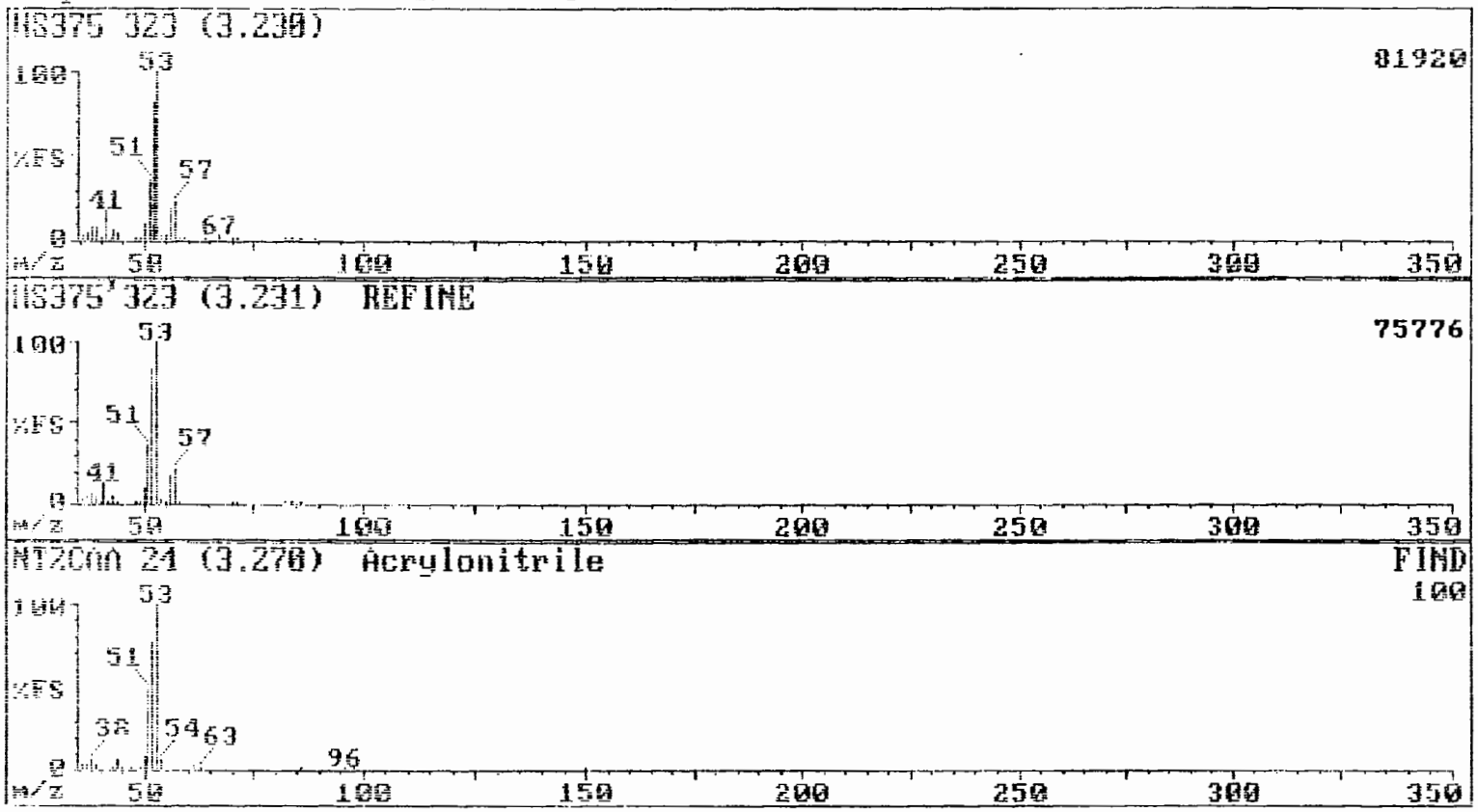
07 09-97 18:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: WOST 4 SET 4 TUBEA/B T/TC 173-46-19A/B TLI#42284 Instrument H



07-09-97 18:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

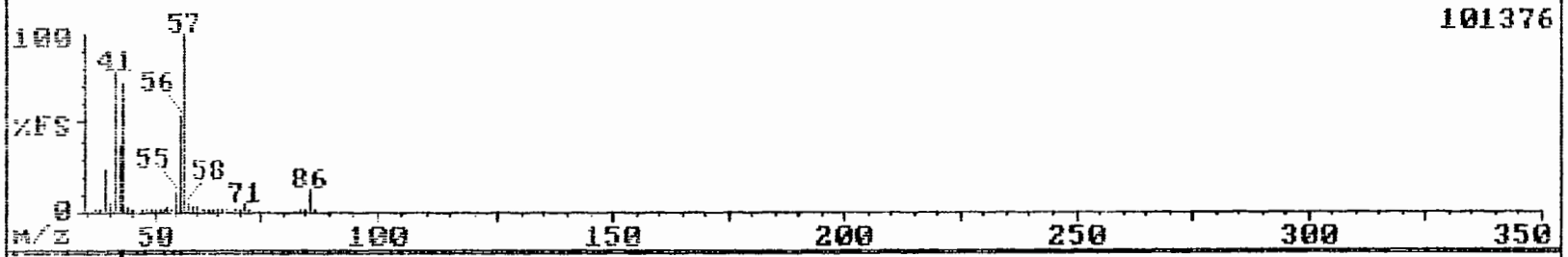
Sample: VOST-4 SET 4 TUBEA/B T/TC 173-46-19A/B TLI#42284 Instrument H



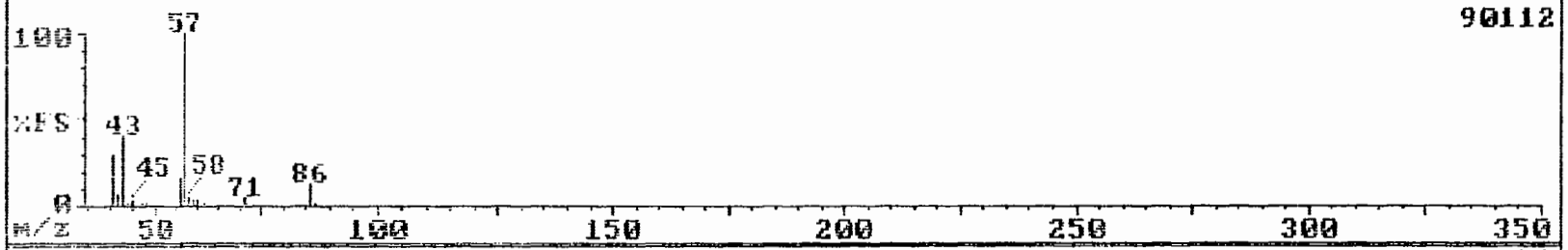
07-09-97 18:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: WOST-4 SET 4 TUBEA/B T/TC 173-46-19A/B TLI#42284 Instrument H

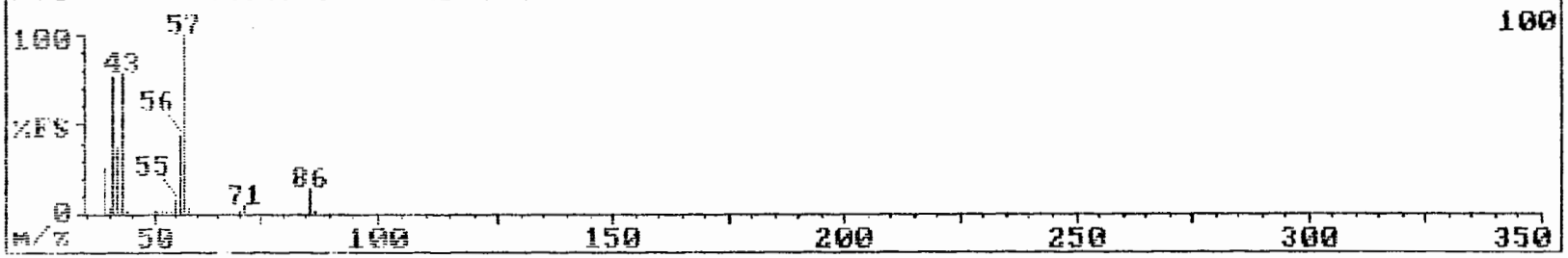
HS375 353 (3.530) 101376



HS375 353 (3.531) REFINE 90112

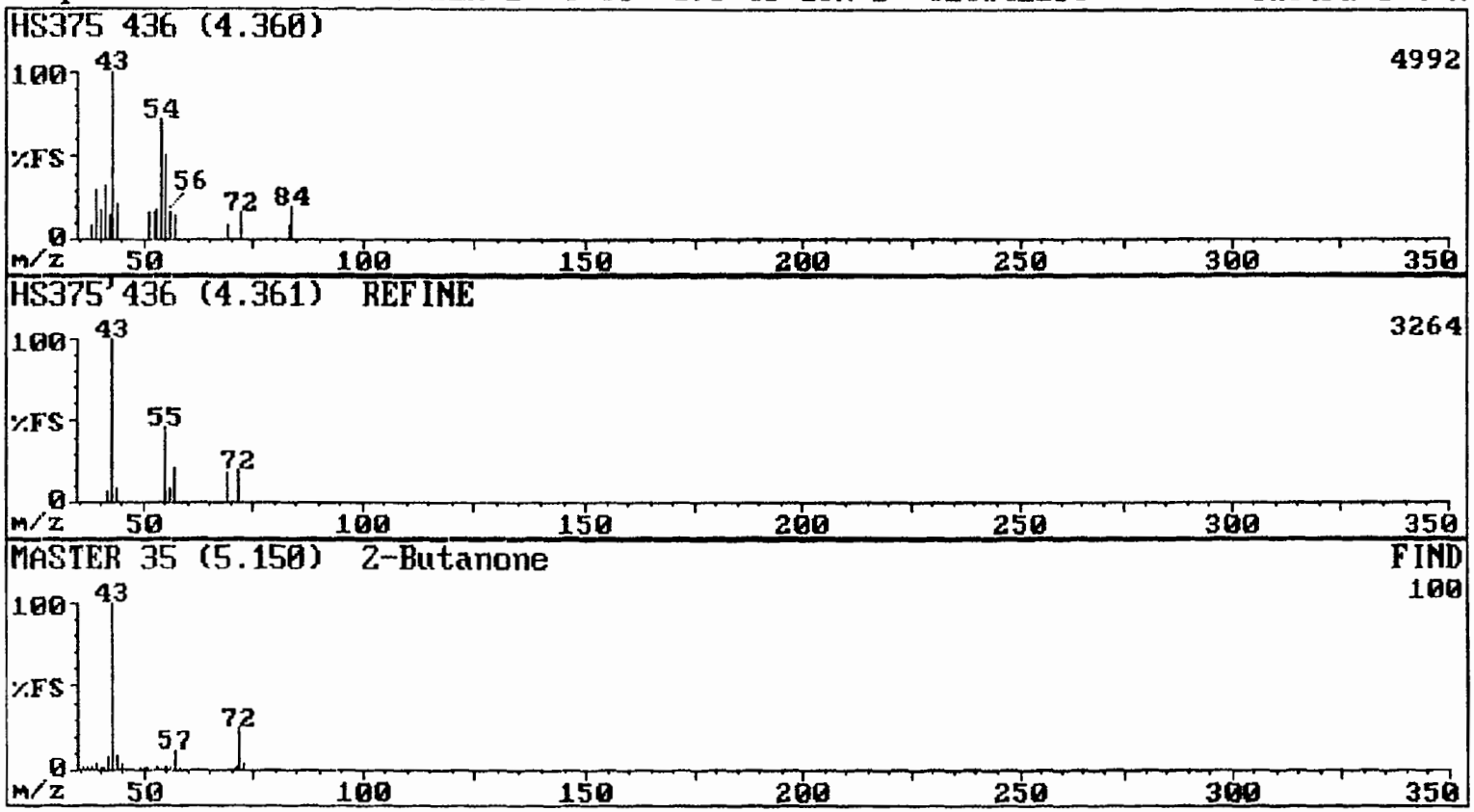


NT2CAA 25 (3.570) n-Hexane FIND 100



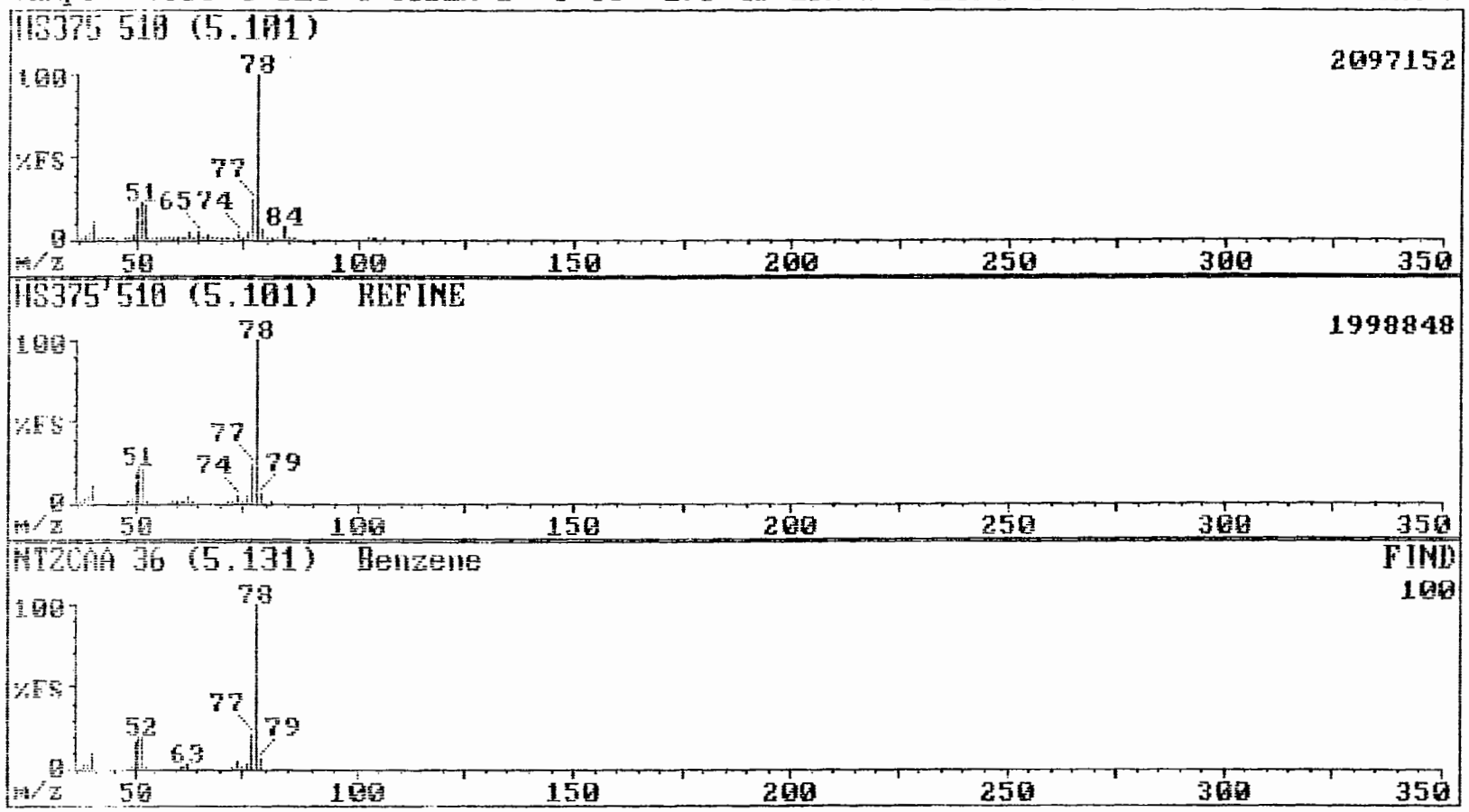
09-Jul-97 18:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 4 TUBEA/B T/TC 173-46-19A/B TLI#42284 Instrument H



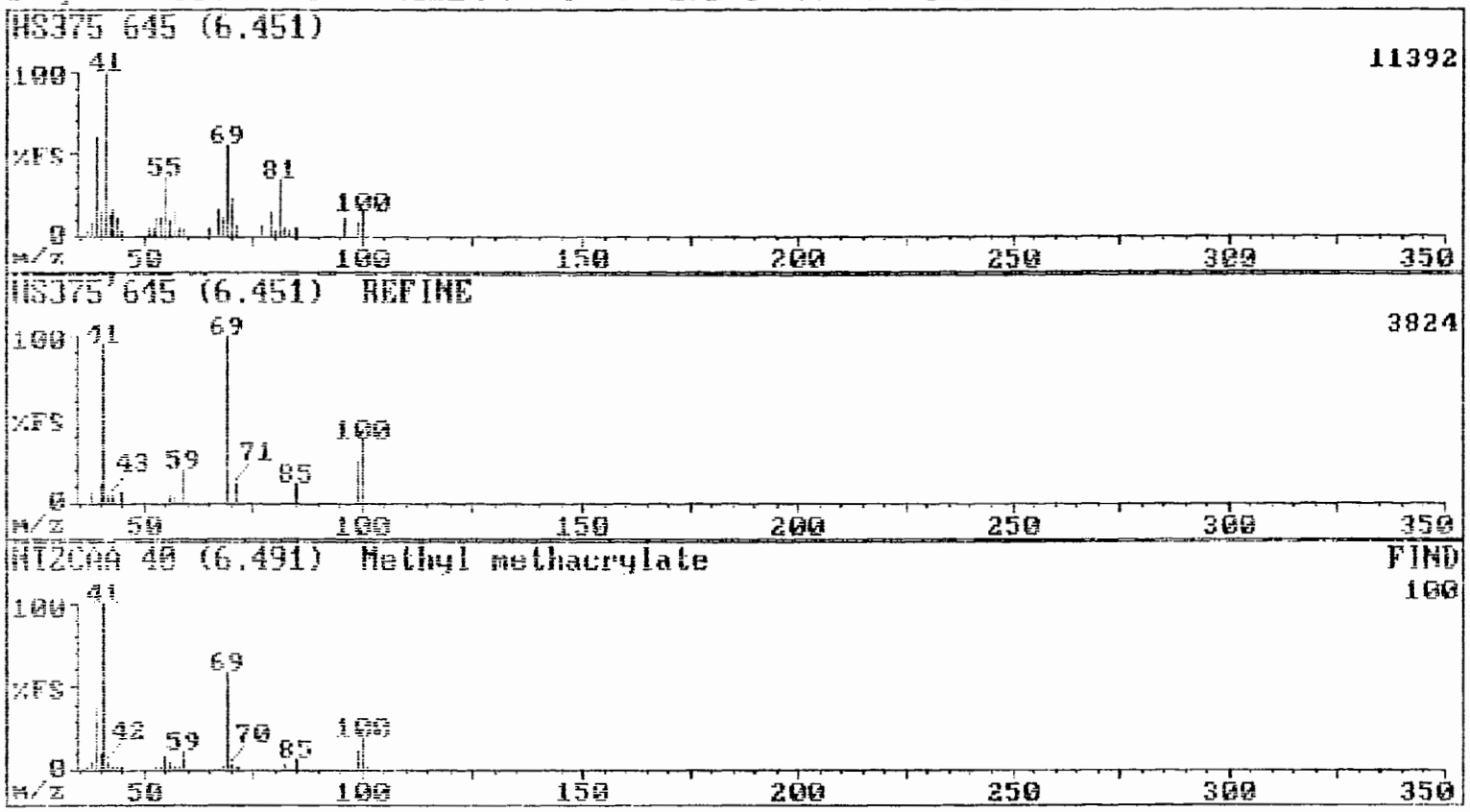
07-09-97 18:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 4 TUBEA/B T/TC 173-46-19A/B TLI#42284 Instrument H



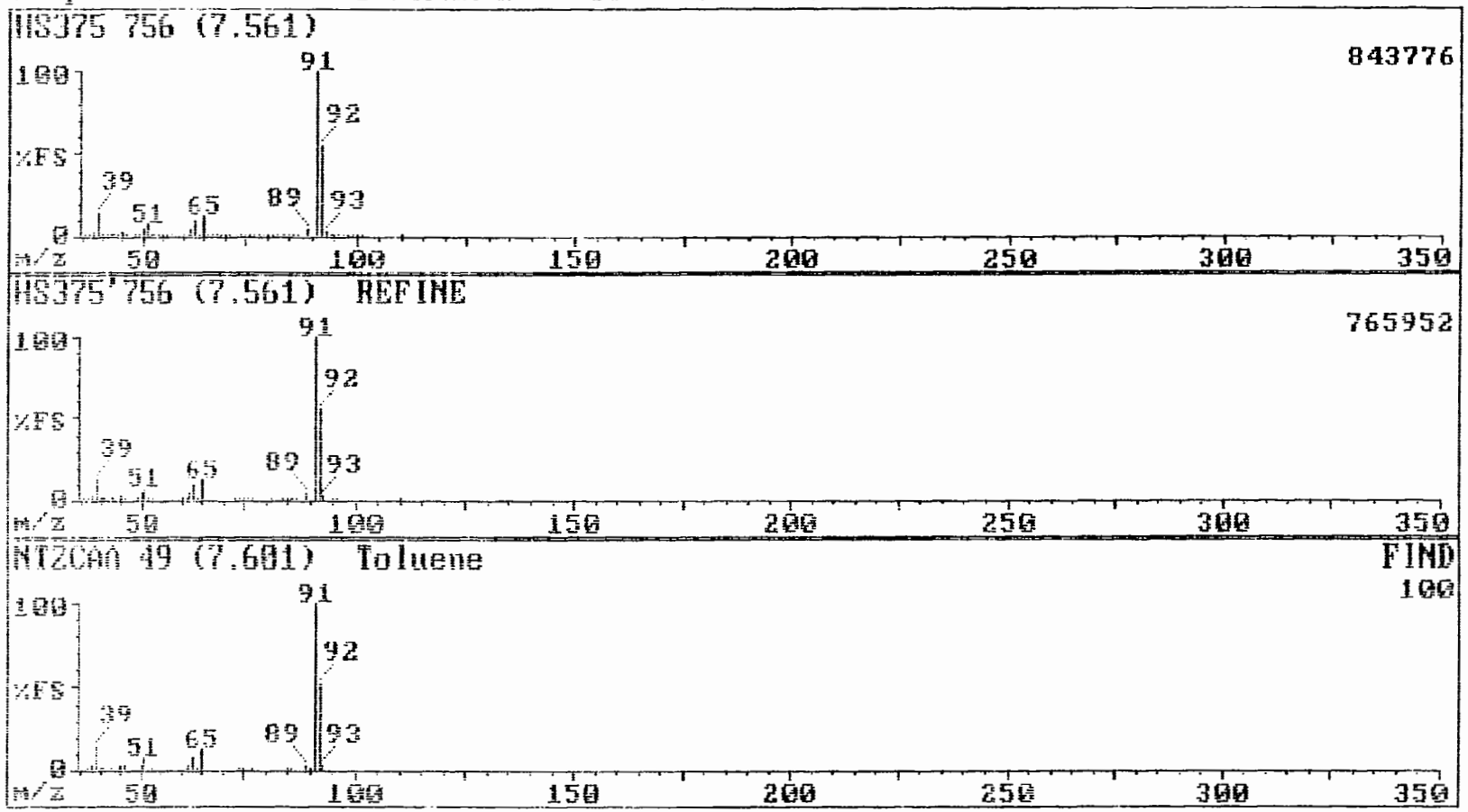
07-09-97 18:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 4 TUBEA/B T/TC 173-46-19A/B TLI#42284 Instrument H



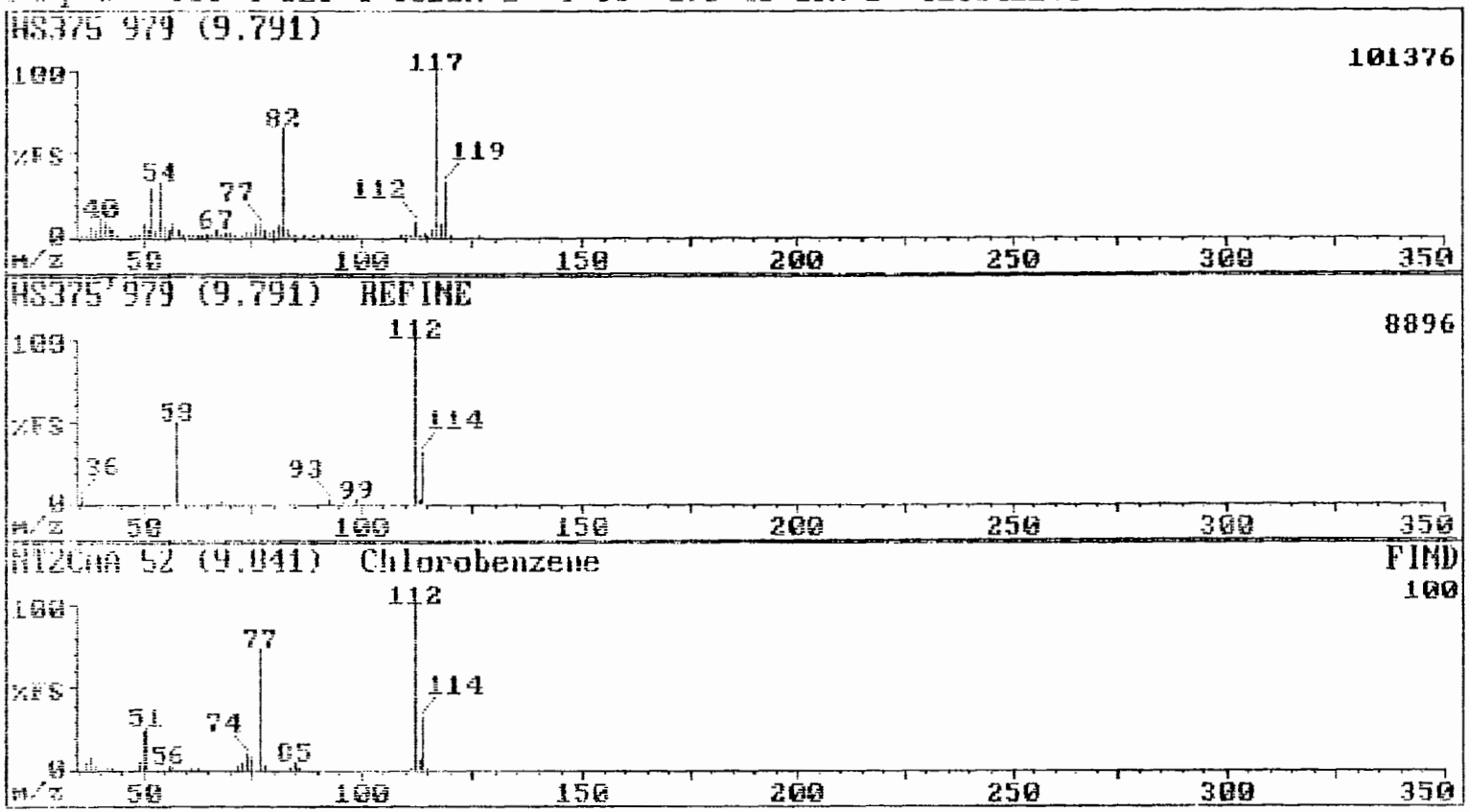
07-09-97 18:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 4 TUBEA/B T/TC 173-46-19A/B TLI#42284 Instrument H



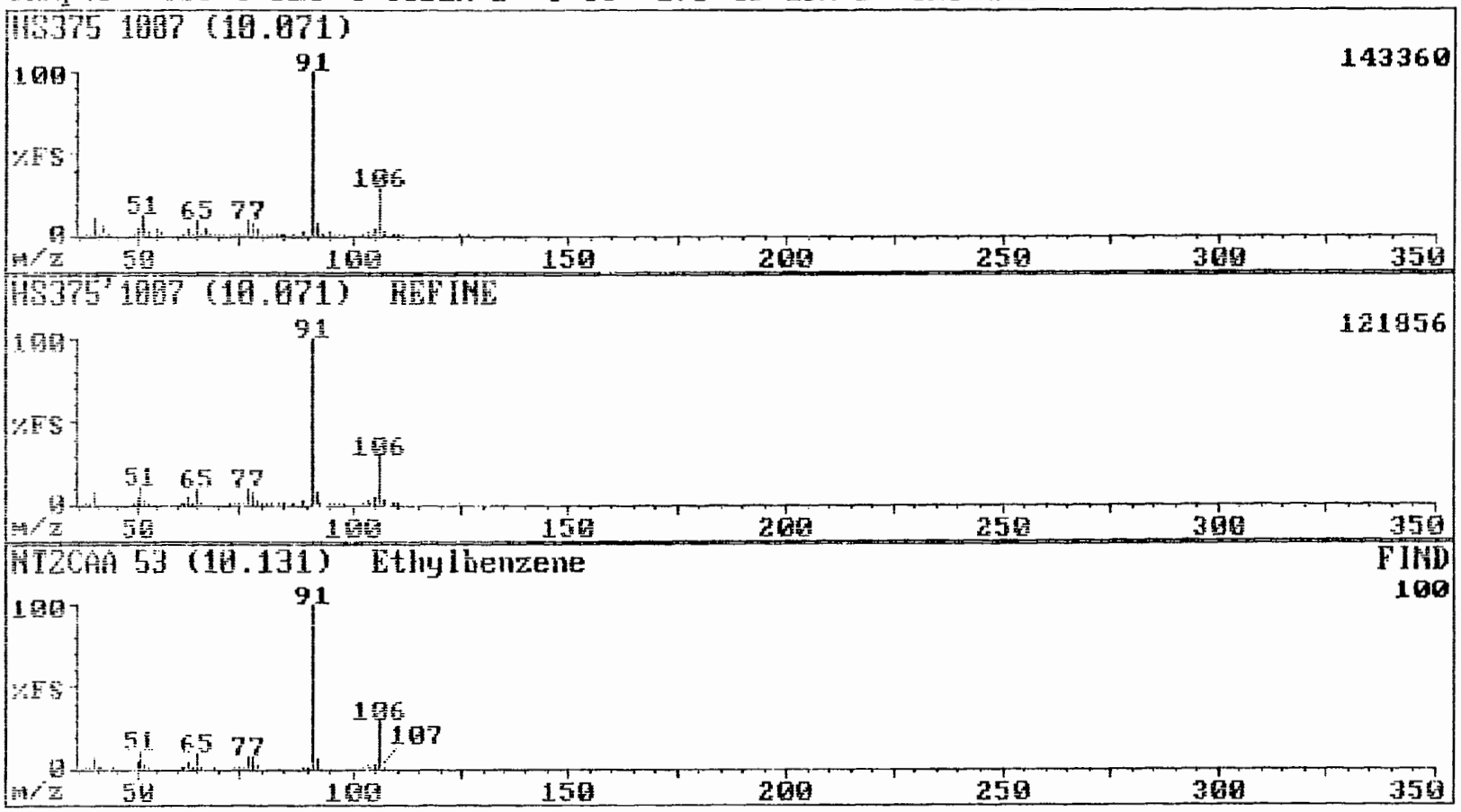
07-09-97 18:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: WOST 4 SET 4 TUBEA/B T/TC 173-46-19A/B TLI#42284 Instrument H



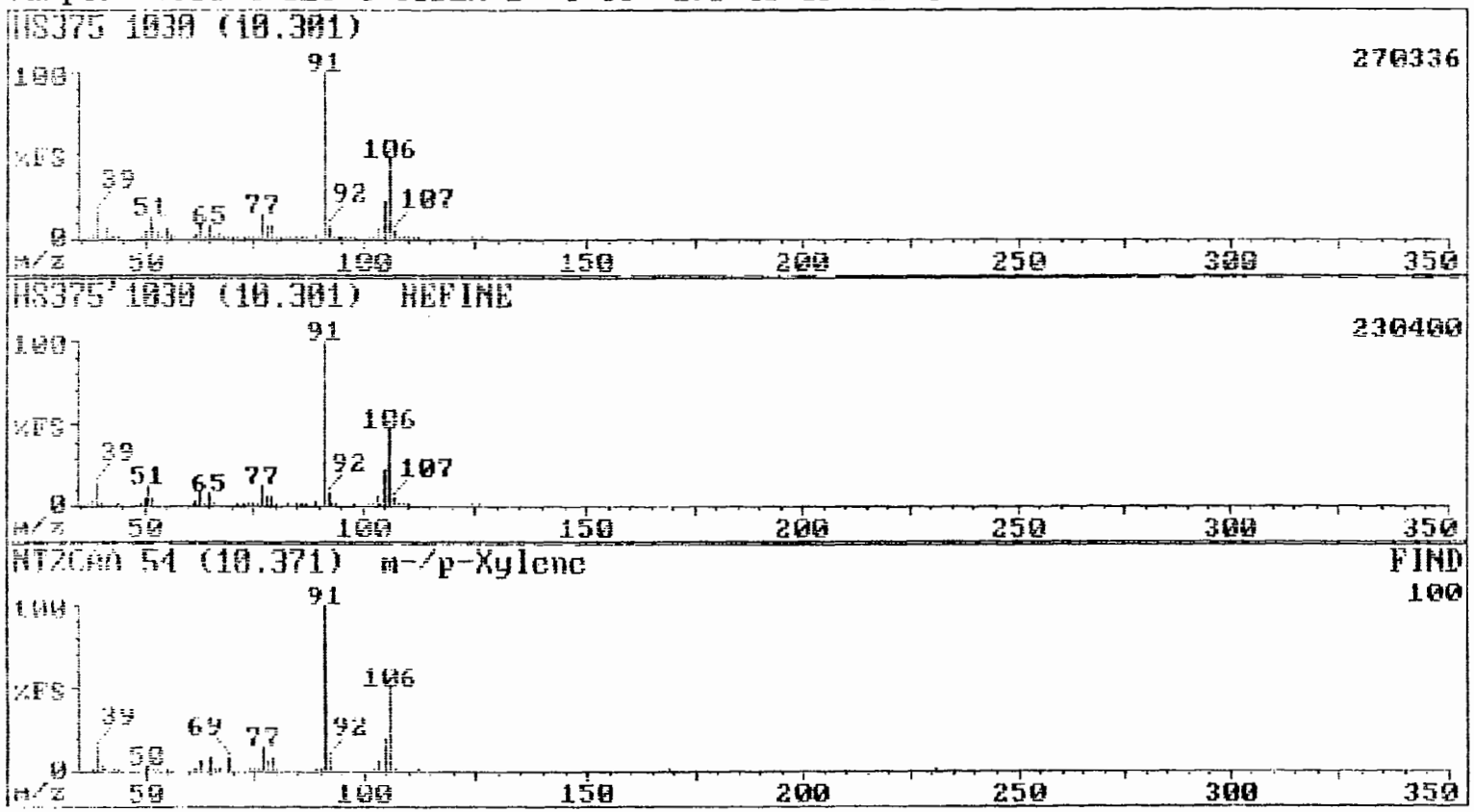
07-09-97 18:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 4 TUBEA/B T/TC 173-46-19A/B TLI#42284 Instrument H



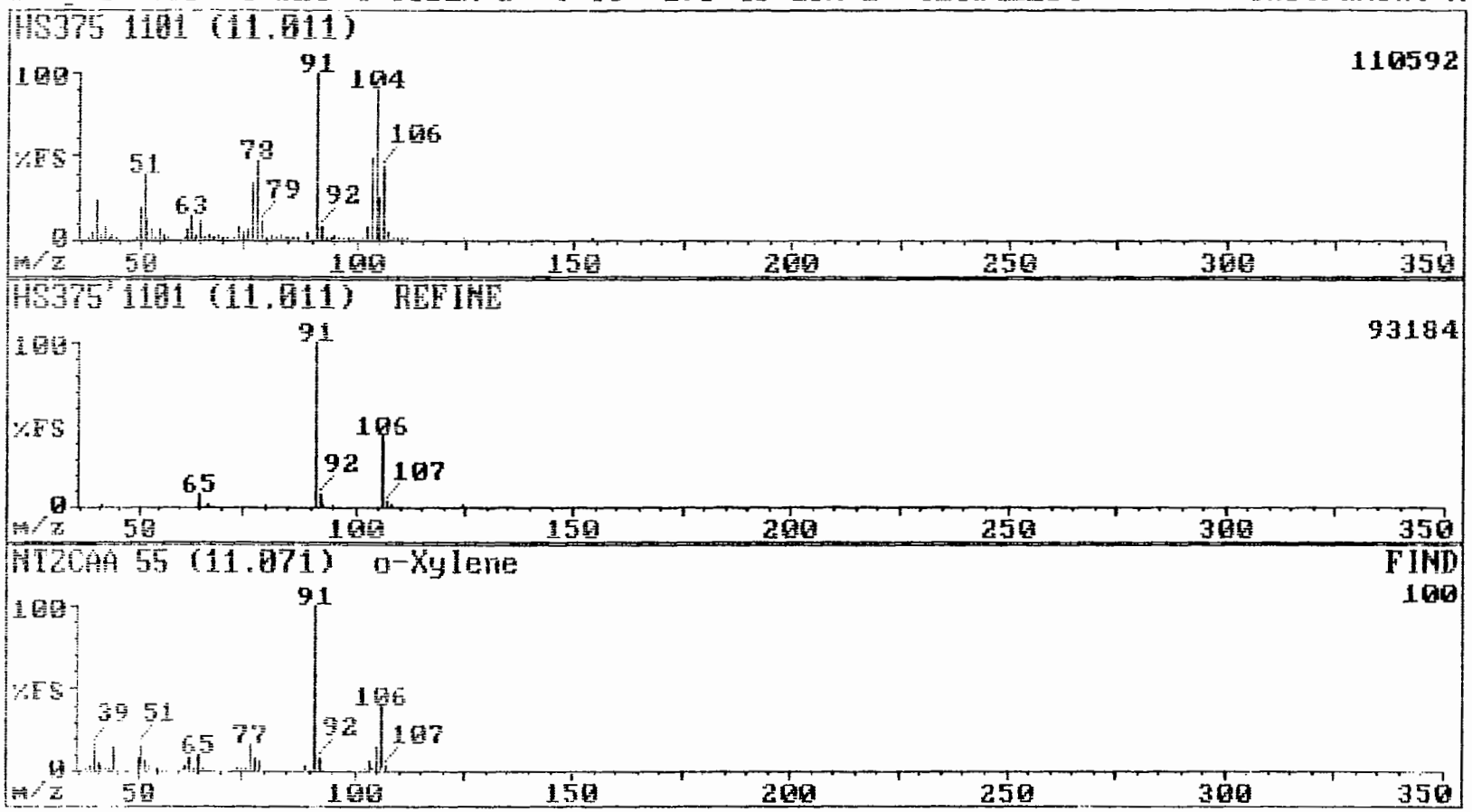
07-09-97 18:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 4 TUBEA/B T/TC 173-46-19A/B TLI#42284 Instrument H



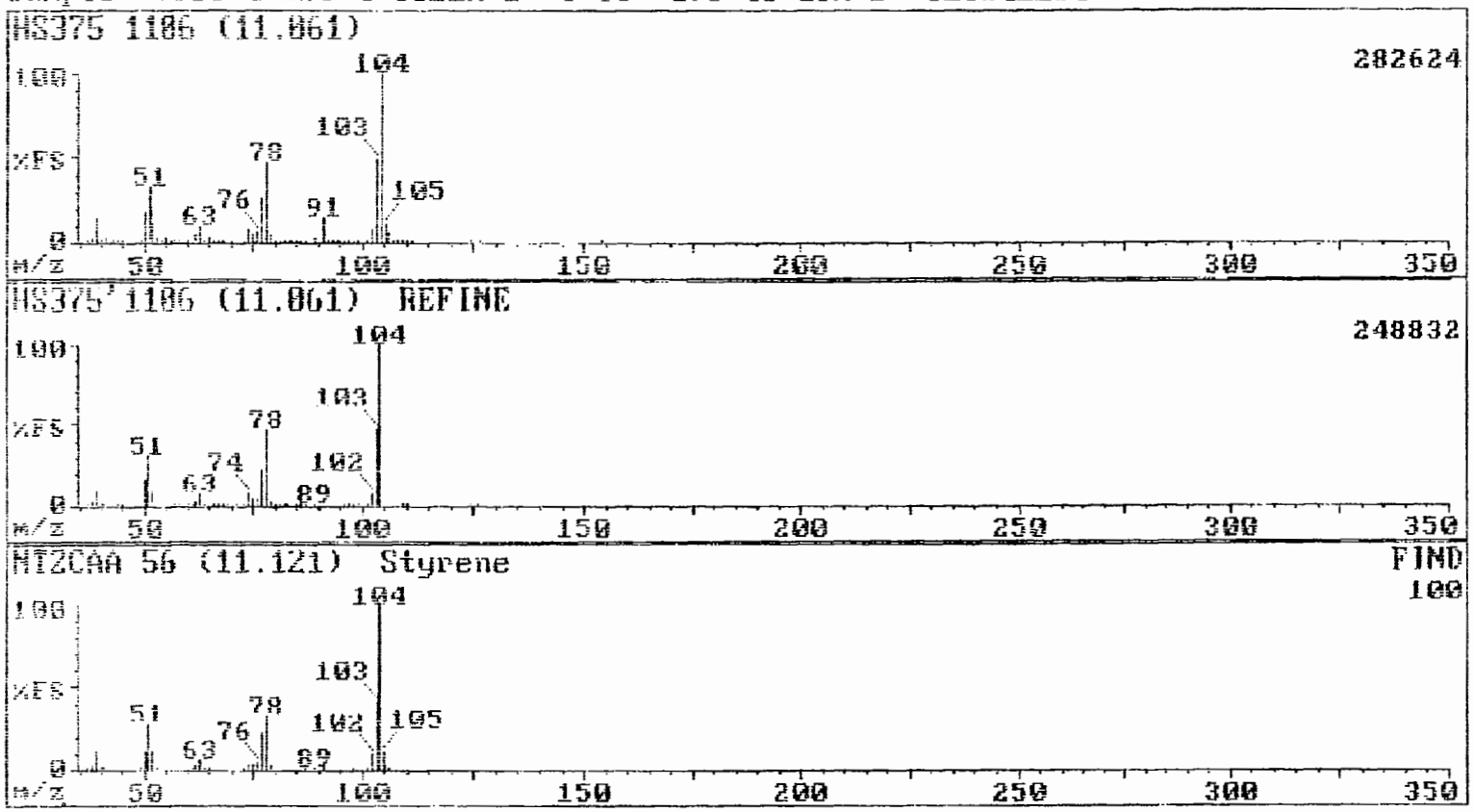
07-09-97 18:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 4 TUBEA/B T/TC 173-46-19A/B TLI#42284 Instrument H



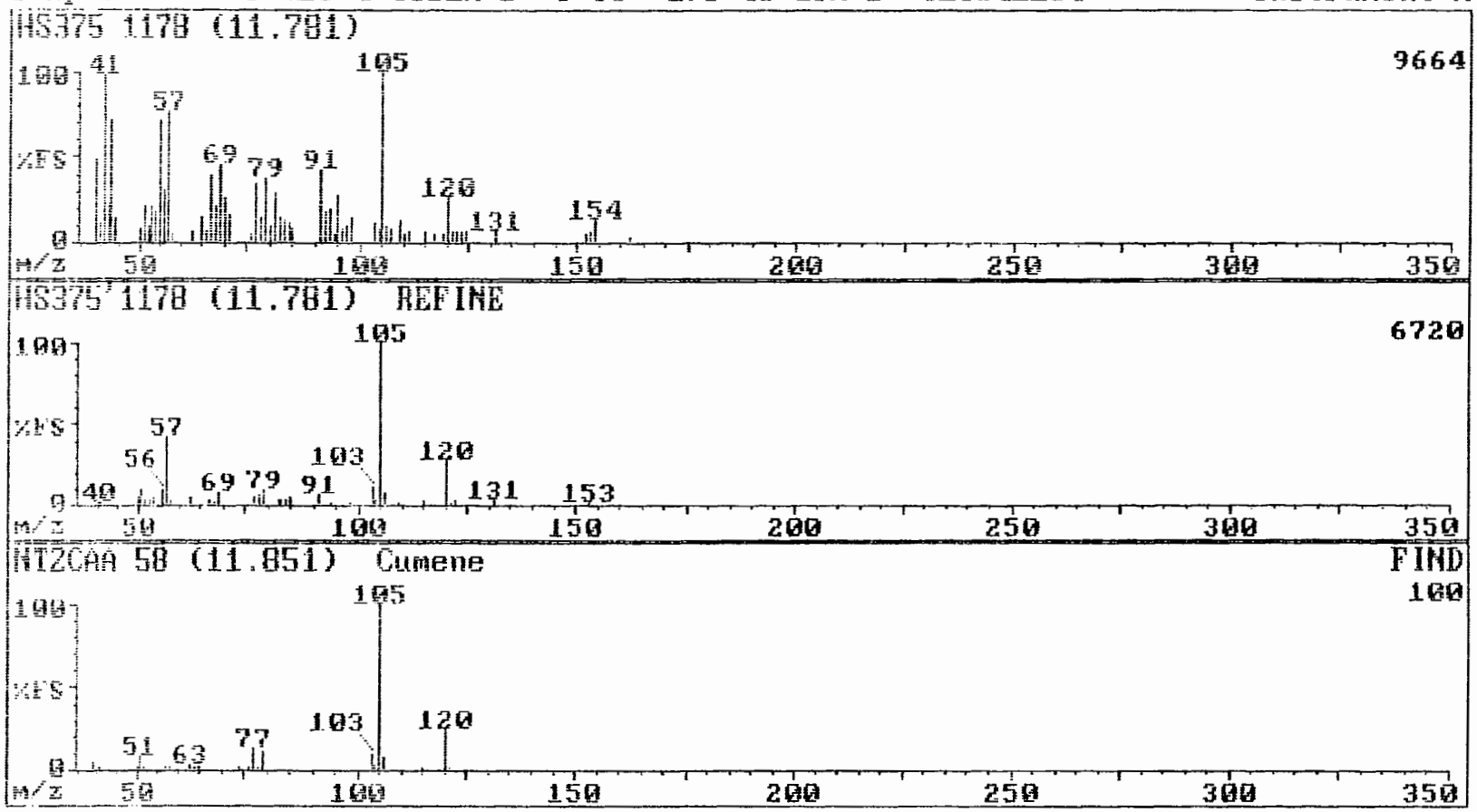
07-09 97 18:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 4 TUBEA/B T/TC 173-46-19A/B TLI#42284 Instrument H



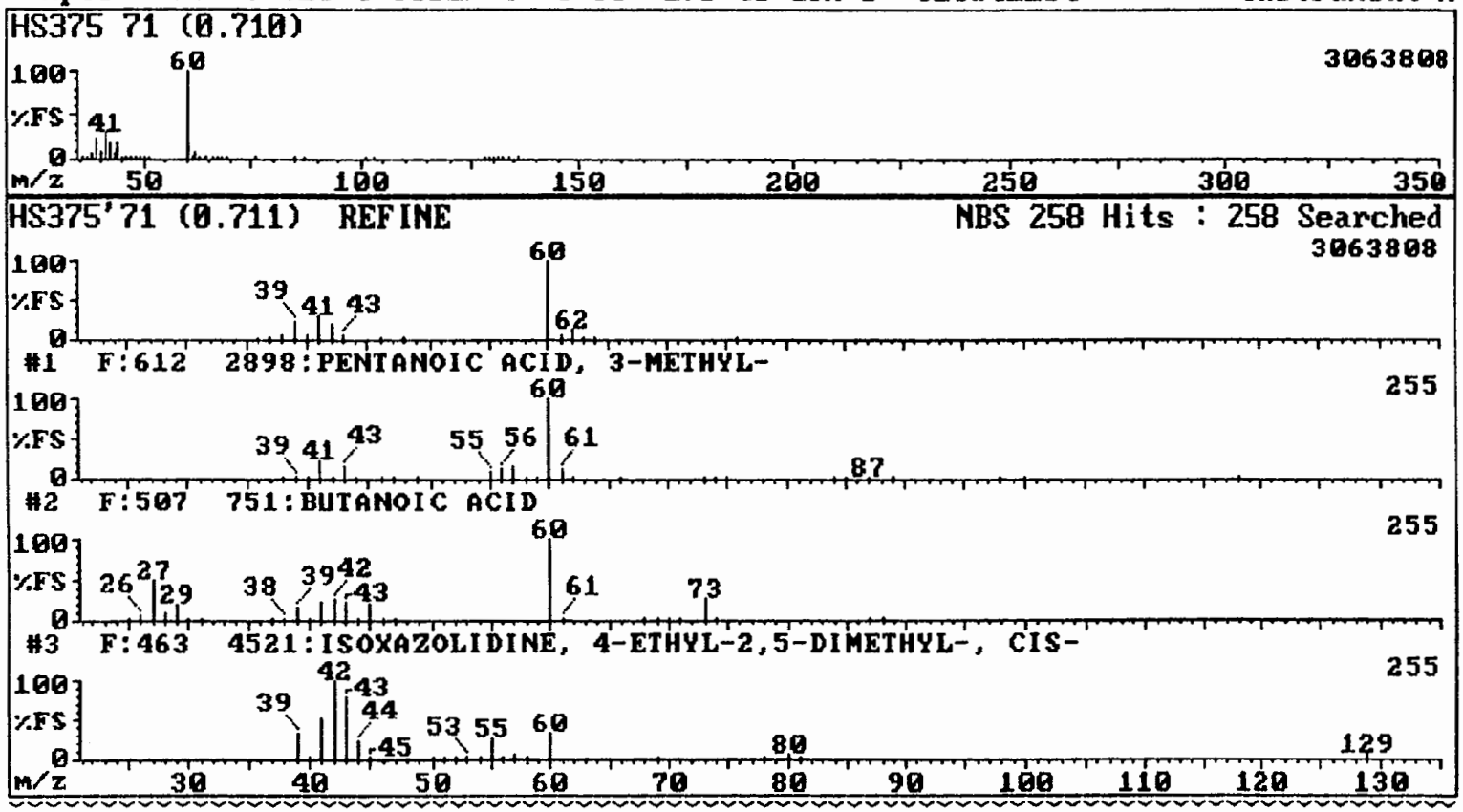
07-03-97 18:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 4 TUBEA/B T/TC 173-46-19A/B TLI#42284 Instrument H



09-Jul-97 18:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

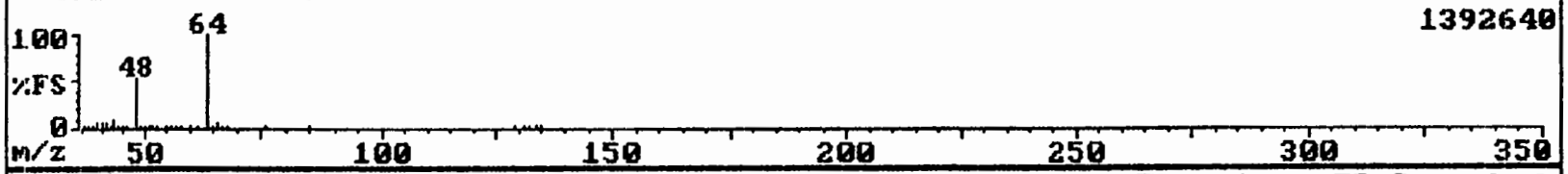
Sample: VOST-4 SET 4 TUBEA/B T/TC 173-46-19A/B TLI#42284 Instrument H



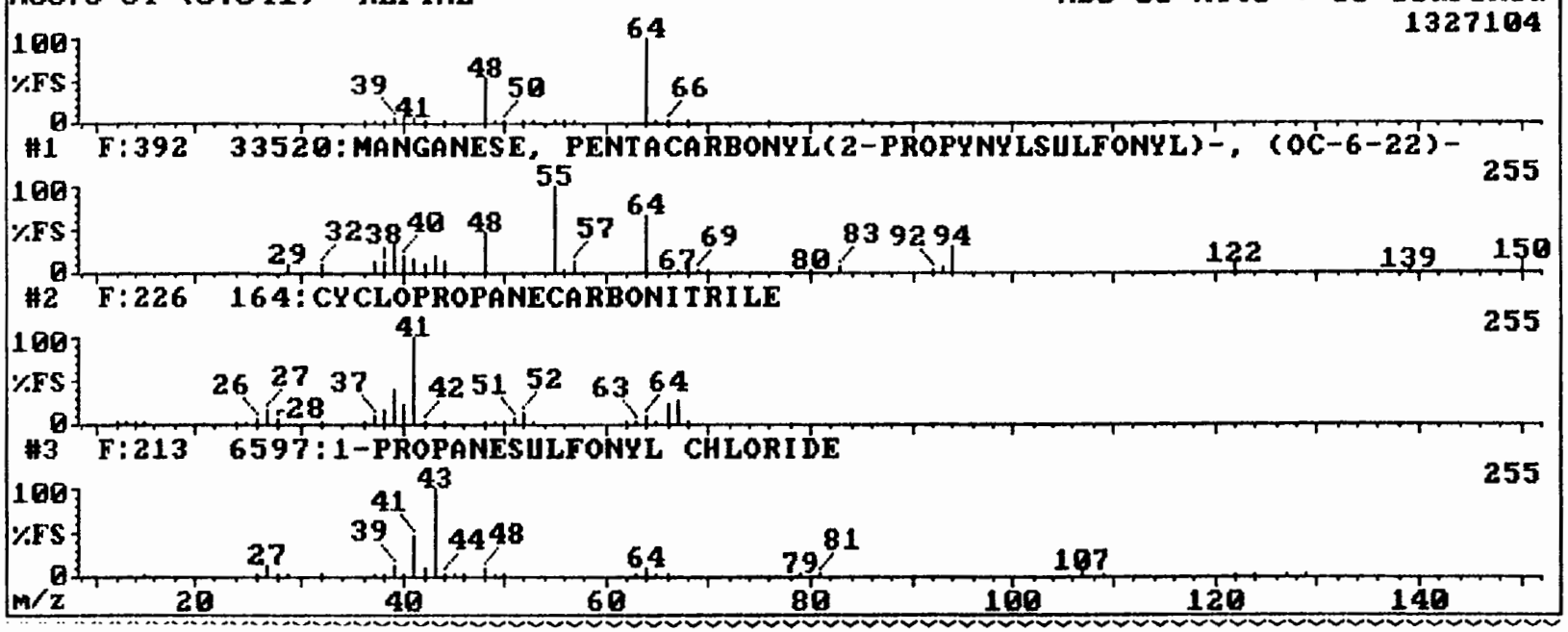
09-Jul-97 18:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 4 TUBEA/B T/TC 173-46-19A/B TLI#42284 Instrument H

HS375 84 (0.840)

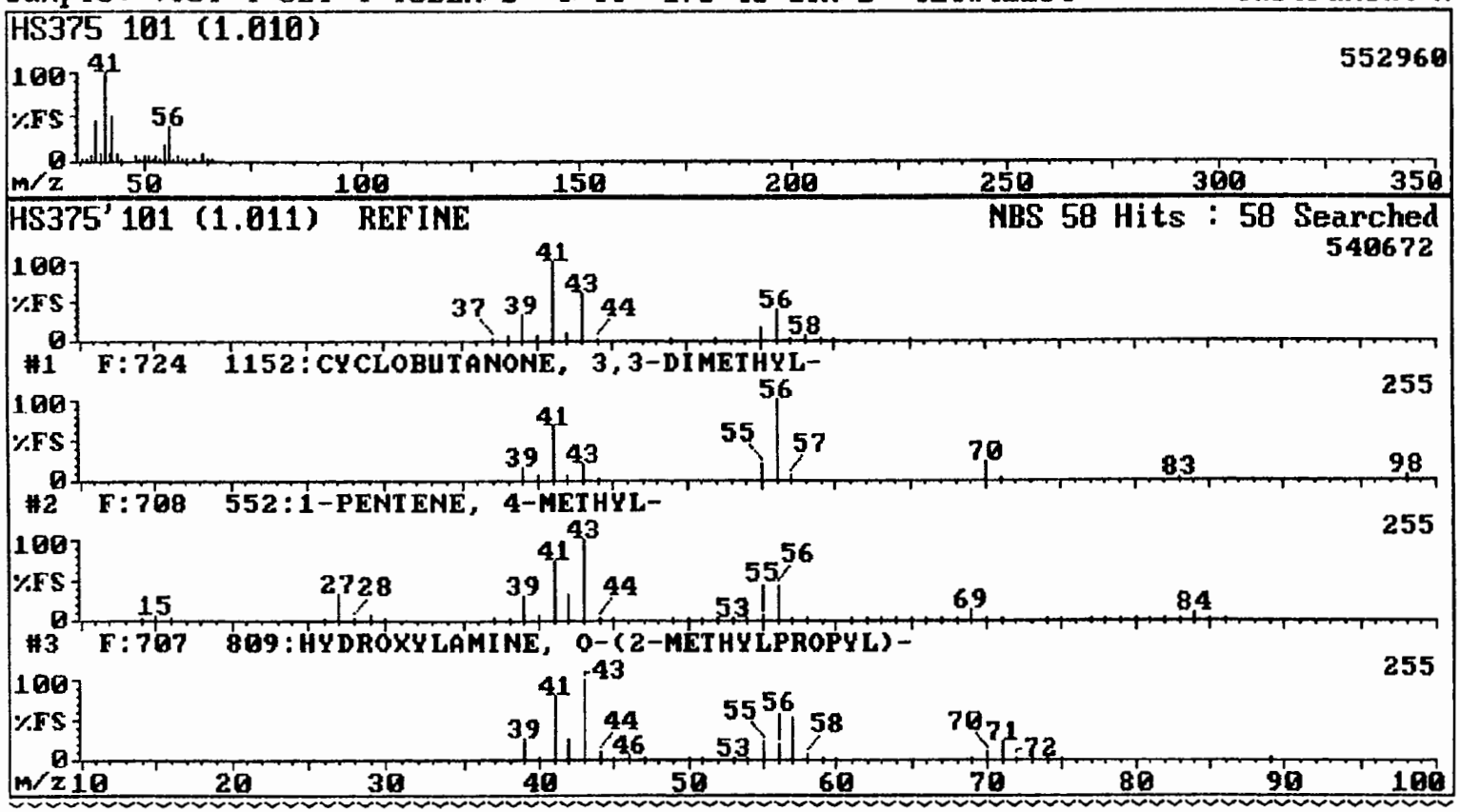


HS375'84 (0.841) REFINE NBS 53 Hits : 53 Searched



09-Jul-97 18:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

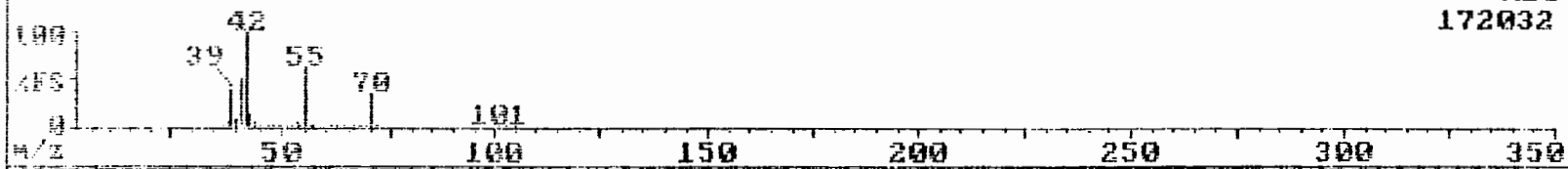
Sample: VOST-4 SET 4 TUBEA/B T/TC 173-46-19A/B TLI#42284 Instrument H



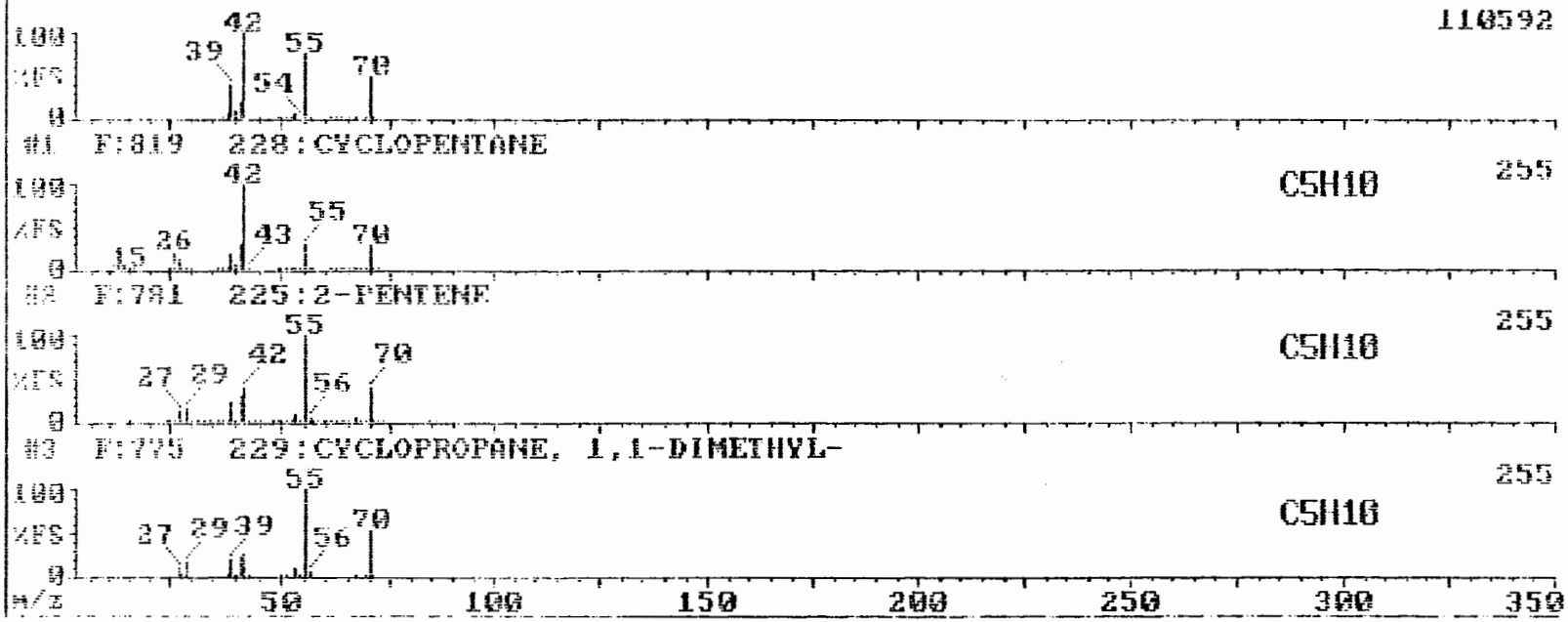
07/09/97 18:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 4 TUBEA/B T/TC 173-46-19A/B TLI#42284 Instrument: H

NS375 187 (1.870) NBS 172032

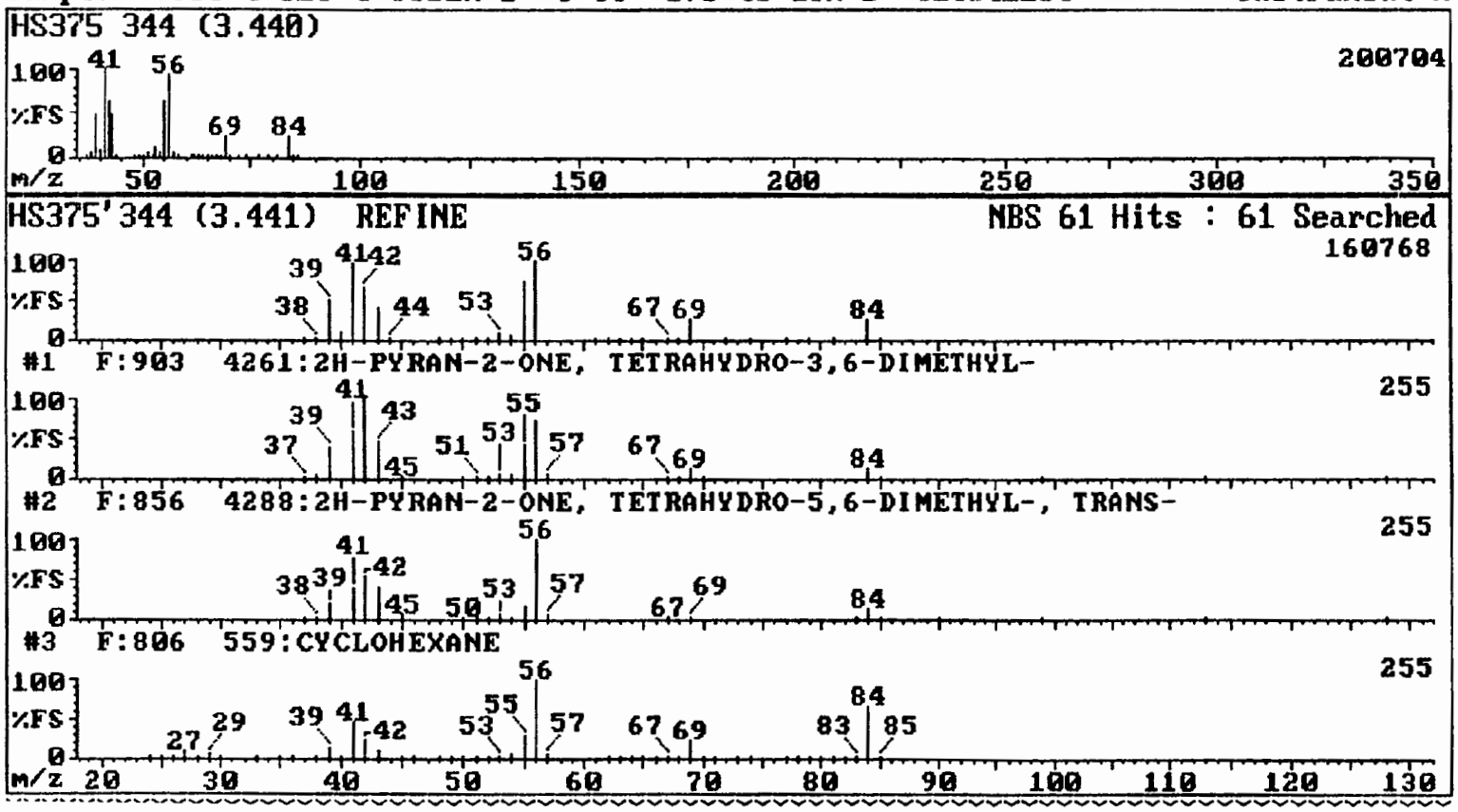


NS375 187 (1.871) REFINE NBS 147 Hits : 147 Searched 110592



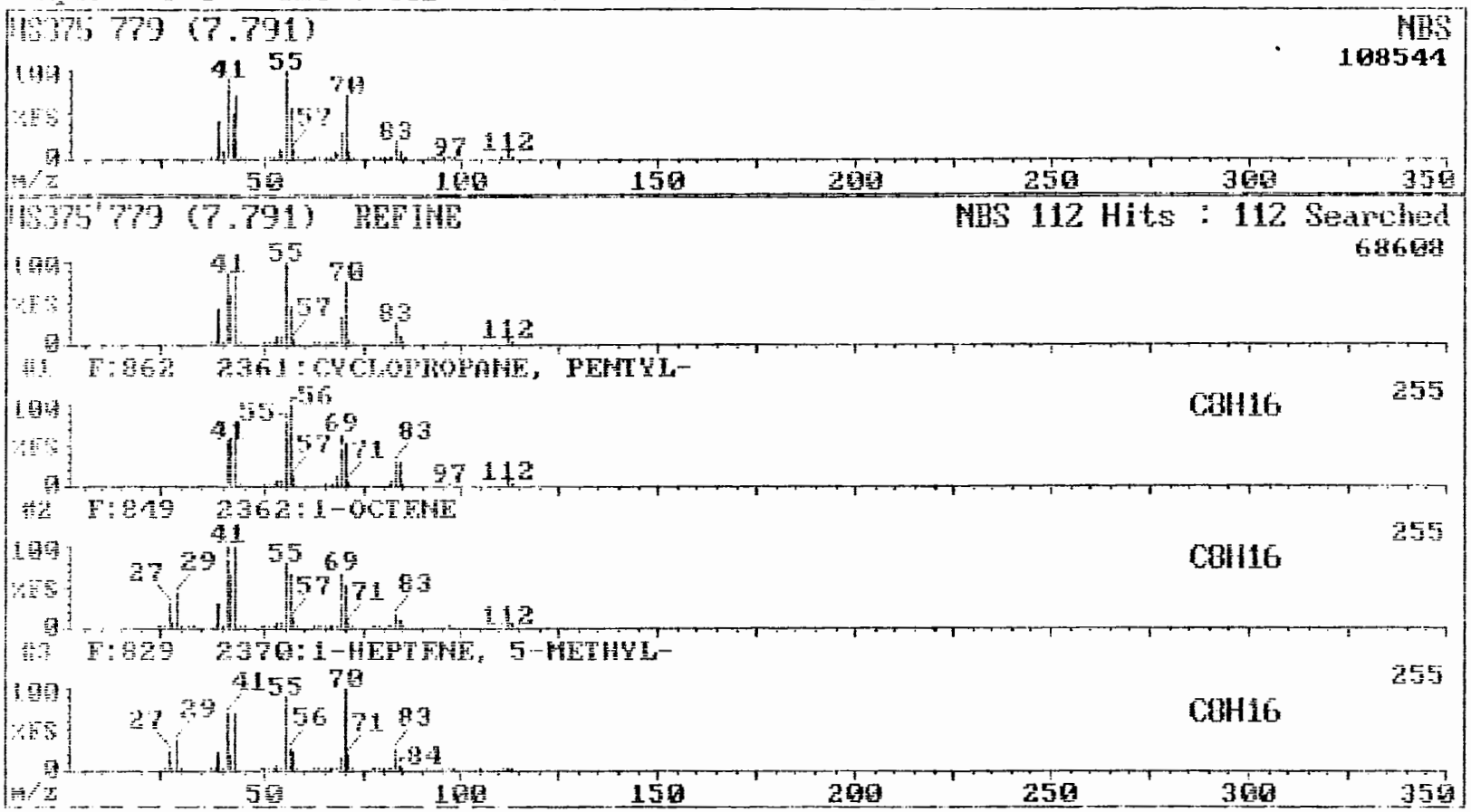
09-Jul-97 18:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 4 TUBEA/B T/TC 173-46-19A/B TLI#42284 Instrument H



07/07/97 18:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

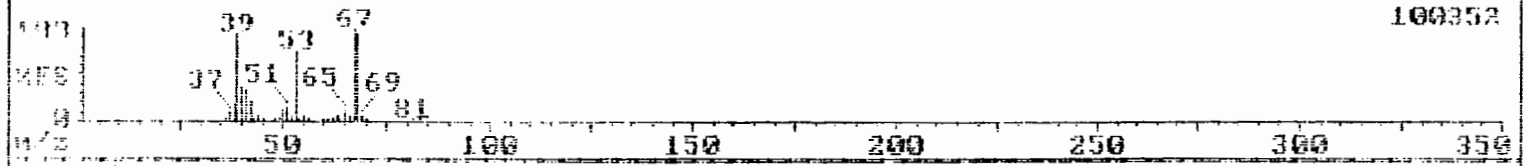
Sample: VOST-4 SET 4 TUBEA/B T/TC 173-46-19A/B TLI#42284 Instrument: H



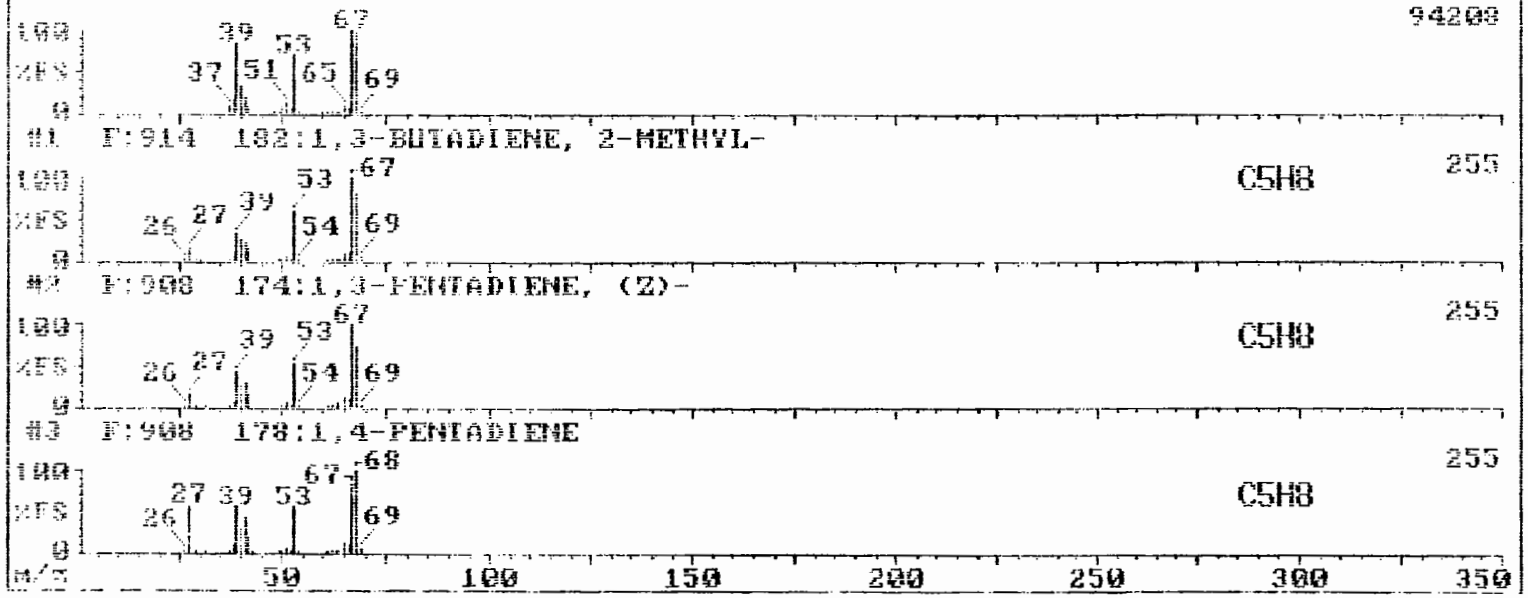
07/10/97 10:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 4 TUBEA/B T/TC 173-46-19A/B TLI#42284 Instrument: H

MS 175 218 (2.180) NBS 100352

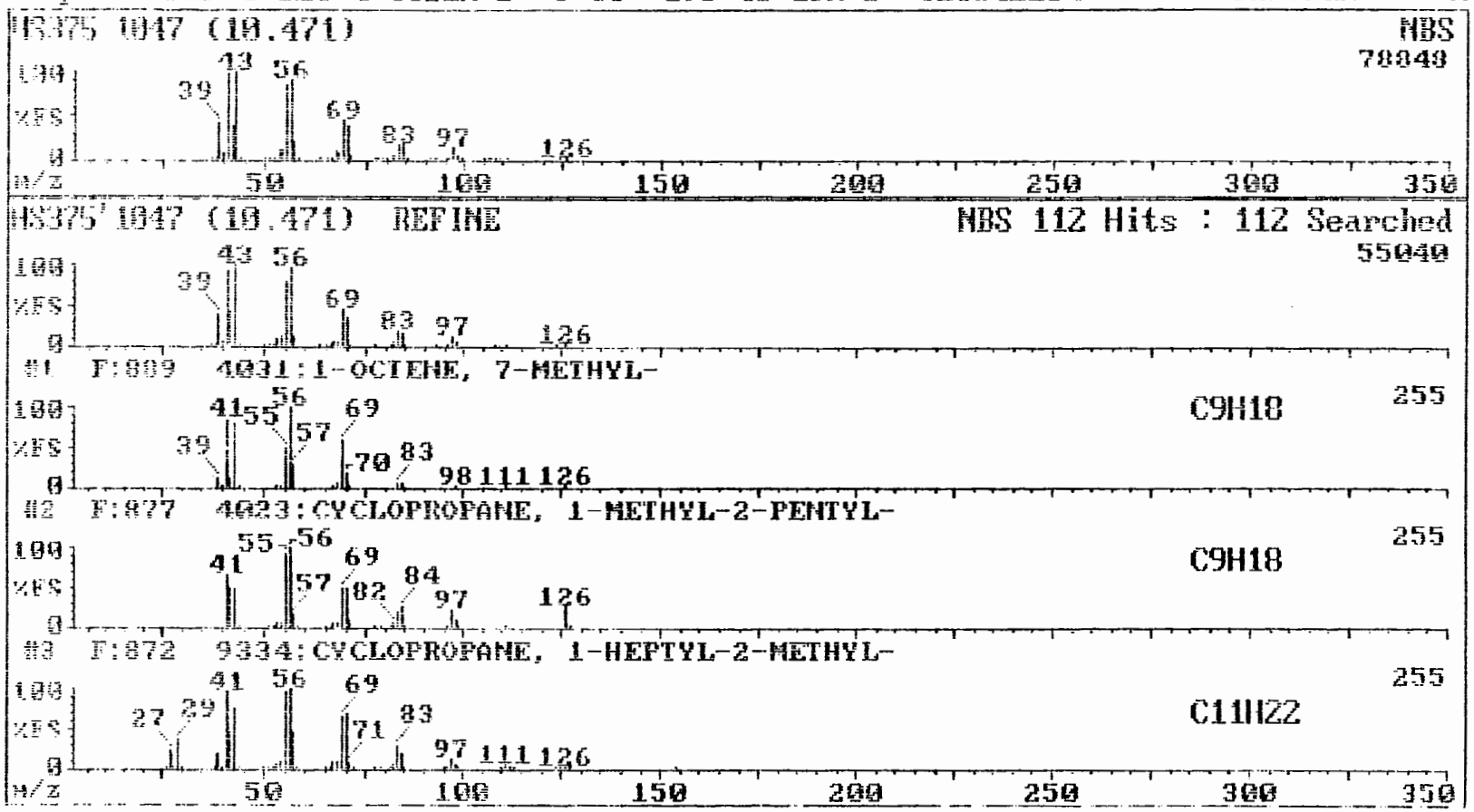


MS 175 218 (2.181) REFINE NBS 26 Hits : 26 Searched 94200



07/07/97 10:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

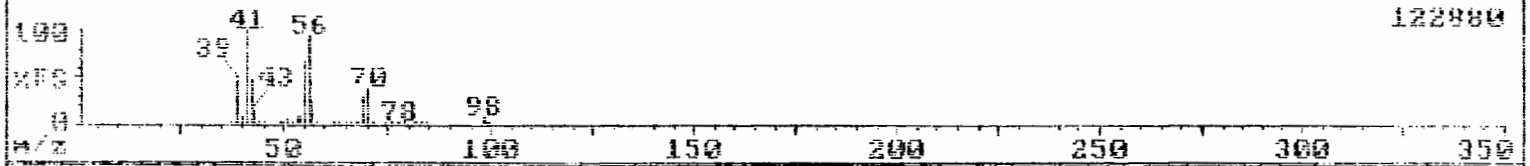
Sample: VOST-4 SET 4 TUBEA/B T/TC 173-46-19A/B TLI#42284 Instrument: H



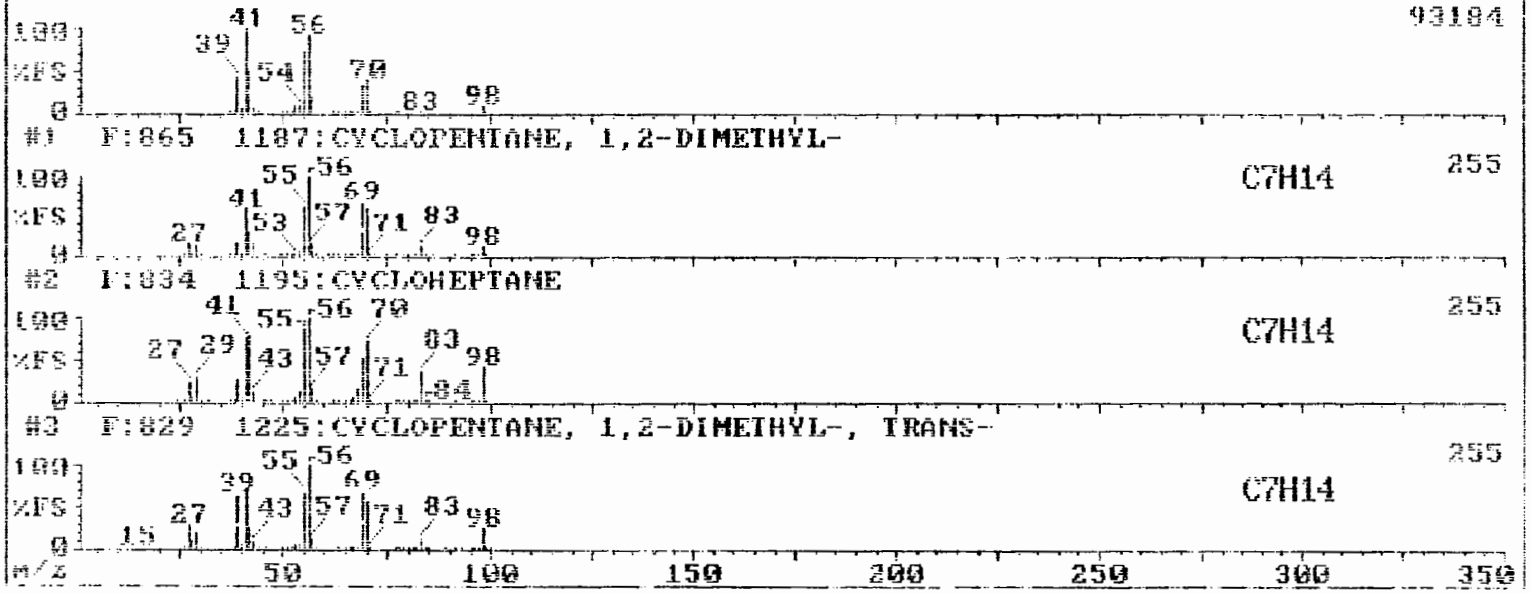
07/09/97 18:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 4 TUBE0/B T/TC 173-46-19A/B TLI#42284 Instrument: H

HS375 542 (5.421) NBS 122880

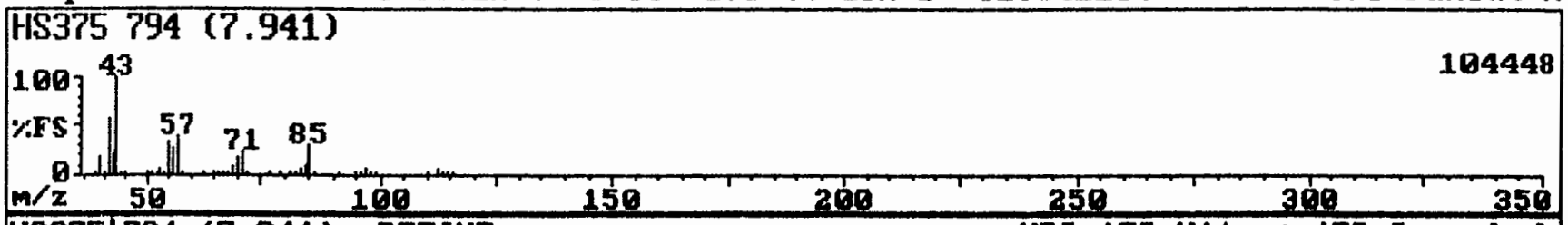


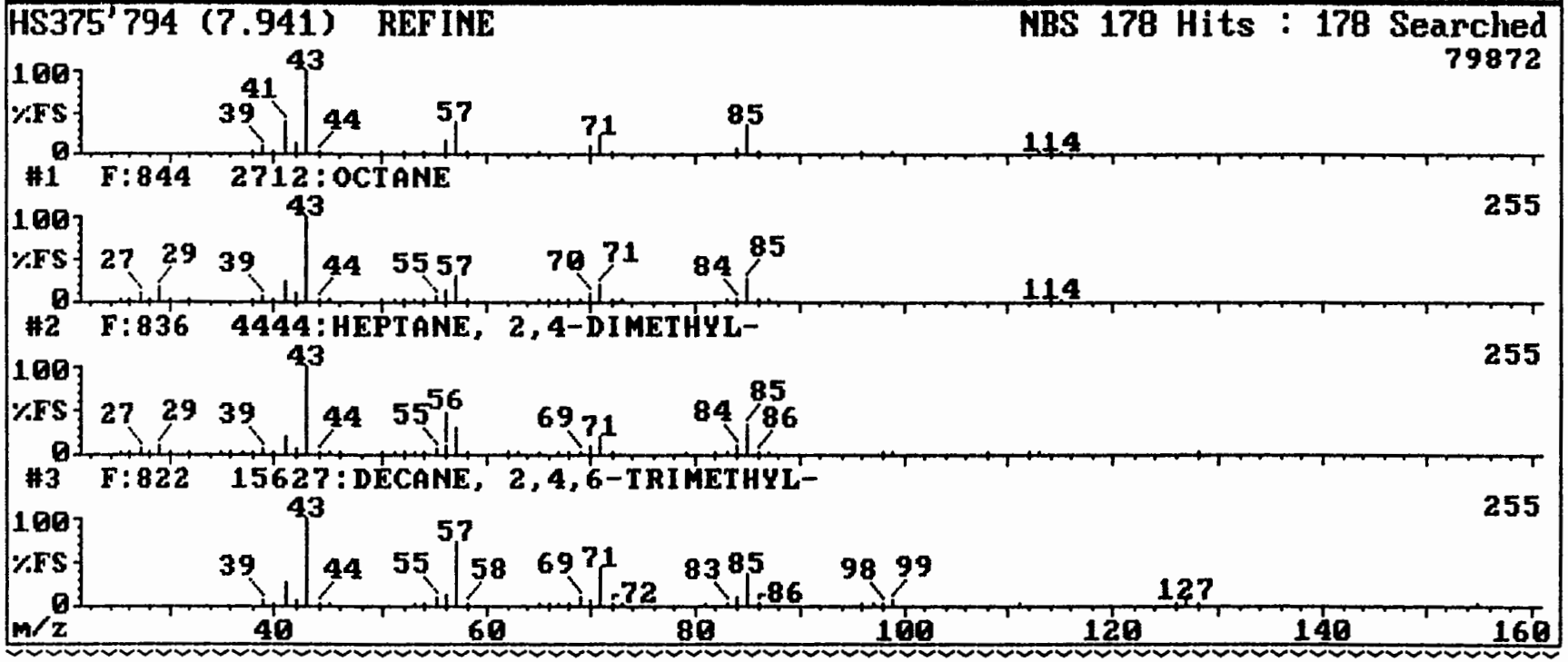
HS375'542 (5.421) REFINE NBS 56 Hits : 56 Searched 93184



09-Jul-97 18:02 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOST-4 SET 4 TUBEA/B T/TC 173-46-19A/B TLI#42284 Instrument H





Pacific Environmental Services

Project Number: 42284 | **Method 8240A VOST**
Sample File: HS348 | **Sample ID: VOSTBLK 070897 T/TC**

Client Project: S407-003 | **Date Received: / /** | **Response File: ICALH708**
TLI ID: VOSTBLK070897
Date Analyzed : 07/08/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
Bromochloromethane		IS 1	4.50		
Chloromethane		U		0.001	0.05
Vinyl Chloride		U		0.001	0.05
1,3-Butadiene		U		0.001	0.05
Bromomethane		U		0.001	0.05
Chloroethane		U		0.001	0.05
Vinyl bromide		U		0.001	0.05
Trichlorofluoromethane		U		0.001	0.05
1,1-Dichloroethene		U		0.001	0.05
Iodomethane		U		0.001	0.05
Carbon disulfide		U		0.001	0.05
Acetone	0.028	J	2.59		0.05
Allyl chloride		U		0.001	0.05
Methylene chloride	0.007	J	2.97		0.05
trans-1,2-Dichloroethene		U		0.001	0.05
tert-Butyl methyl ether		U		0.001	0.05
Acrylonitrile		U		0.004	0.05
n-Hexane		U		0.001	0.05
1,1-Dichloroethane		U		0.001	0.05
1,2-Epoxybutane		U		0.003	0.05
cis-1,2-Dichloroethene		U		0.001	0.05
Chloroform		U		0.001	0.05
1,2-Dichloroethane		U		0.001	0.05
Isooctane		U		0.001	0.05
1,4-Difluorobenzene		IS 2	5.66		
Vinyl acetate		U		0.001	0.05

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

Triangle Laboratories of RTP, Inc.
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Savar v3.5
Printed: 15:00 07/22/1997

Pacific Environmental Services

Project Number: 42284 | **Method 8240A VOST**
Sample File: HS348 | **Sample ID: VOSTBLK 070897 T/TC**

Client Project: S407-003 | **Date Received: / /** | **Response File: ICALH708**
TLI ID: VOSTBLK070897
Date Analyzed : 07/08/97

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
2-Butanone		U		0.006	0.05
1,1,1-Trichloroethane		U		0.001	0.05
Carbon tetrachloride		U		0.001	0.05
Benzene	0.026	J	5.14		0.05
Trichloroethene		U		0.001	0.05
1,2-Dichloropropane		U		0.001	0.05
Ethyl acrylate		U		0.001	0.05
Methyl methacrylate		U		0.001	0.05
Bromodichloromethane		U		0.001	0.05
cis-1,3-Dichloropropene		U		0.001	0.05
trans-1,3-Dichloropropene		U		0.001	0.05
1,1,2-Trichloroethane		U		0.001	0.05
Dibromochloromethane		U		0.001	0.05
Ethylene dibromide		U		0.001	0.05
Bromoform		U		0.001	0.05
Chlorobenzene-d_5		IS 3	9.78		
4-Methyl-2-pentanone		U		0.001	0.05
Toluene	0.008	J	7.60		0.05
Tetrachloroethene		U		0.001	0.05
2-Hexanone		U		0.001	0.05
Chlorobenzene		U		0.001	0.05
Ethylbenzene		U		0.001	0.05
m-/p-Xylene		U		0.001	0.10
o-Xylene		U		0.001	0.05
Styrene		U		0.001	0.05
1,1,2,2-Tetrachloroethane		U		0.001	0.05

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

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Savar v3.5
Printed: 15:00 07/22/1997

Pacific Environmental Services

Project Number: 42284
Sample File: HS348

Method 8240A VOST
Sample ID: VOSTBLK 070897 T/TC

Client Project: S407-003
TLI ID: VOSTBLK070897

Date Received: / /
Date Analyzed : 07/08/97

Response File: ICALH708

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
Cumene		U		0.001	0.05

Surrogate Summary	Amount (ug)	RT	IS Ref	%REC
1,2-Dichloroethane-d_4	0.302	5.10	1	121
Benzene-d_6	0.291	5.08	2	116
Toluene-d_8	0.286	7.50	3	114

Reviewed by TW Date 7/22/97

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit

IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

Triangle Laboratories of RTP, Inc.
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Phone: (919) 544-5729 • Fax: (919) 544-5491

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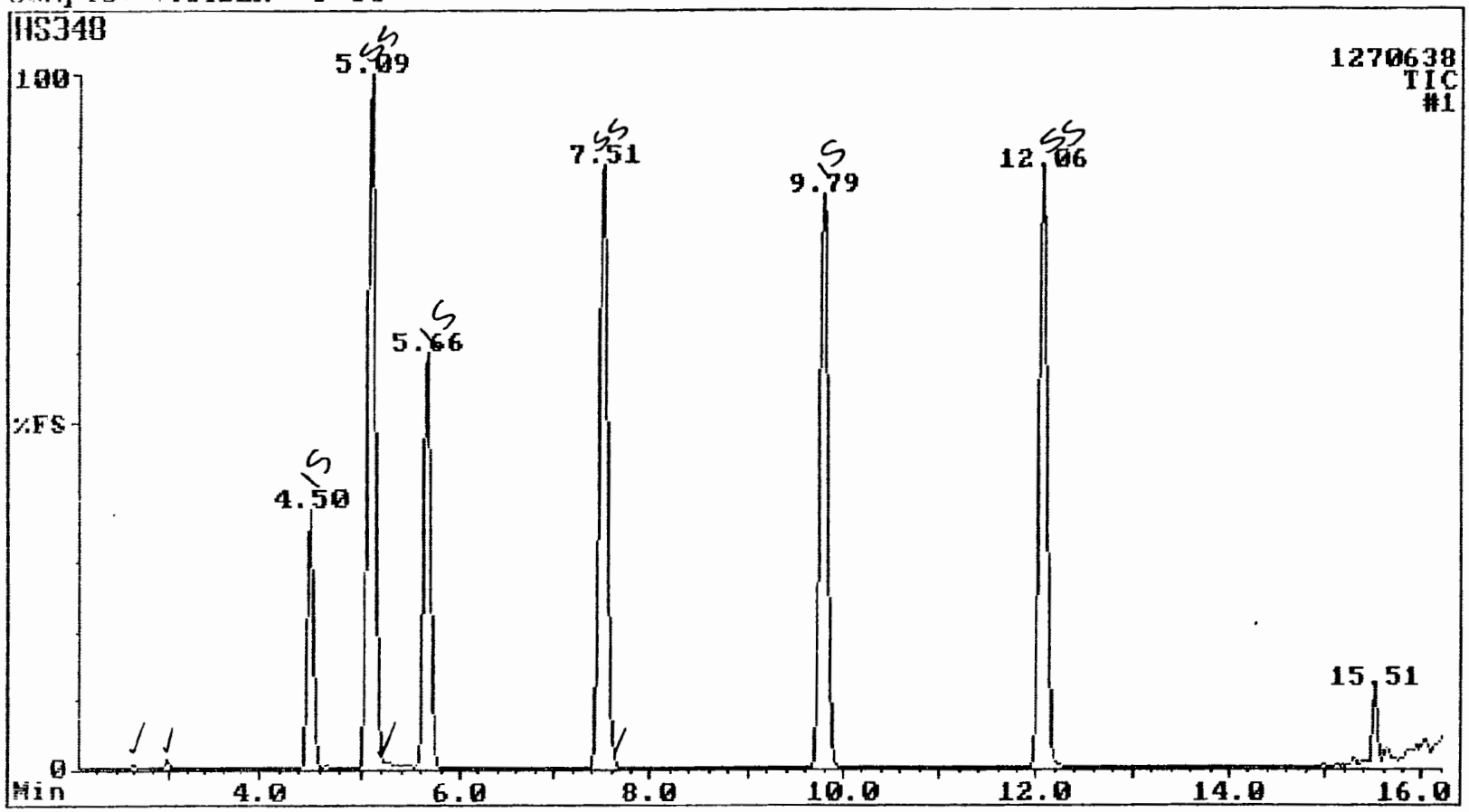
Printed: 15:00 07/22/1997

07-08-97 20:22 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOSTBLK T/TC Instrument H



677

Data Review: TW
Date: 7-16-97

QUAN DB : HS348 LAB-BASE QUAN 07-08-97 20:53

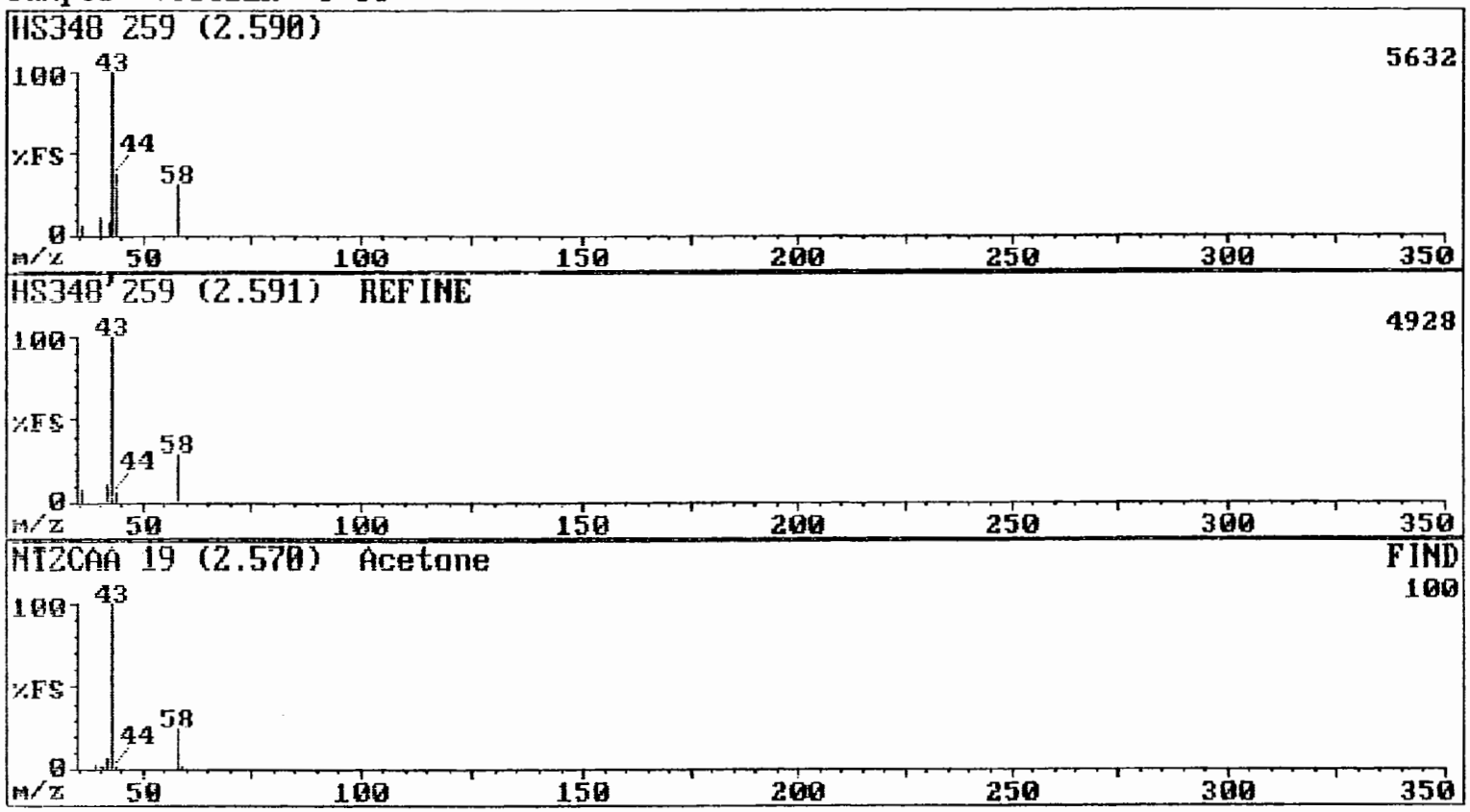
No.	MAT	FOR	REV	Delta	Area	P.Flags	RT	QM	Name
1	100	97	99	-1	325396	bb	4.50	128	Bromochloromethane
2	100	95	97	1	2018632	bb	5.66	114	1,4-Difluorobenzene
3	100	97	98	-2	2435024	bv	9.78	117	Chlorobenzene-d5
4	78	41	87	1	1057132	bb	5.10	65	1,2-Dichloroethane-d4
5	100	81	82	-1	2717936	bb	5.08	84	Benzene-d6
6	100	93	99	0	3165524	bv	7.50	98	Toluene-d8
7	0	0	0	0	0		0.00	98	o-Xylene-d10
8	100	88	93	2	1709564	bv	12.06	95	4-Bromofluorobenzene
9	0	0	0	0	0		0.00	50	Chloromethane
10	0	0	0	0	0		0.00	62	Vinyl Chloride
11	0	0	0	0	0		0.00	39	1,3-Butadiene
12	0	0	0	0	0		0.00	94	Bromomethane
13	0	0	0	0	0		0.00	64	Chloroethane
14	0	0	0	0	0		0.00	106	Vinyl bromide
15	0	0	0	0	0		0.00	101	Trichlorofluoromethane
16	0	0	0	0	0		0.00	96	1,1-Dichloroethene
17	0	0	0	0	0		0.00	142	Iodomethane
18	0	0	0	0	0		0.00	76	Carbon disulfide
19	95	78	81	3	47672	bb	2.59	43	Acetone
20	0	0	0	0	0		0.00	76	Allyl chloride
21	100	79	93	1	17584	bb	2.97	84	Methylene chloride
22	0	0	0	0	0		0.00	96	trans-1,2-Dichloroethene
23	0	0	0	0	0		0.00	73	tert-Butyl methyl ether
24	0	0	0	0	0		0.00	53	Acrylonitrile
25	0	0	0	0	0		0.00	57	n-Hexane
26	0	0	0	0	0		0.00	63	1,1-Dichloroethane
27	0	0	0	0	0		0.00	42	1,2-Epoxybutane
28	0	0	0	0	0		0.00	96	cis-1,2-Dichloroethene
29	0	0	0	0	0		0.00	83	Chloroform
~~30~~	~~24~~	~~10~~	~~29~~	~~1~~	~~19180~~	~~A~~	~~5.08~~	62	1,2-Dichloroethane RP TW
31	0	0	0	0	0		0.00	57	Isooctane
32	0	0	0	0	0		0.00	43	Vinyl acetate
33	0	0	0	0	0		0.00	72	2-Butanone
34	0	0	0	0	0		0.00	97	1,1,1-Trichloroethane
35	0	0	0	0	0		0.00	117	Carbon tetrachloride
36	84	78	88	12	264796	A	5.14	78	Benzene
37	0	0	0	0	0		0.00	130	Trichloroethene
38	0	0	0	0	0		0.00	63	1,2-Dichloropropane
39	0	0	0	0	0		0.00	55	Ethyl acrylate
40	0	0	0	0	0		0.00	69	Methyl methacrylate
41	0	0	0	0	0		0.00	83	Bromodichloromethane
42	0	0	0	0	0		0.00	75	cis-1,3-Dichloropropene
43	0	0	0	0	0		0.00	75	trans-1,3-Dichloropropen
44	0	0	0	0	0		0.00	97	1,1,2-Trichloroethane
45	0	0	0	0	0		0.00	129	Dibromochloromethane
46	0	0	0	0	0		0.00	107	Ethylene dibromide
47	0	0	0	0	0		0.00	173	Bromoform
~~48~~	~~49~~	~~1~~	~~83~~	~~3~~	~~22740~~	~~bb~~	7.51	43	4-Methyl-2-pentanone RP TW
49	99	79	91	2	59732	bb	7.60	92	Toluene
50	0	0	0	0	0		0.00	164	Tetrachloroethene

Data Review: TW
Date: 7-16-97

No.	MAT	FOR	REV	Delta	Area	P.Flags	RT	QM	Name
51	0	0	0	0	0		0.00	43	2-Hexanone
52	0	0	0	0	0		0.00	112	Chlorobenzene
53	0	0	0	0	0		0.00	106	Ethylbenzene
54	0	0	0	0	0		0.00	106	m-/p-Xylene
55	0	0	0	0	0		0.00	106	o-Xylene
56	0	0	0	0	0		0.00	104	Styrene
57	0	0	0	0	0		0.00	83	1,1,2,2-Tetrachloroethan
~~58~~	~~41~~	~~17~~	~~50~~	~~1~~	~~388~~	~~bb~~	~~11.84~~	105	Cumene FP TW

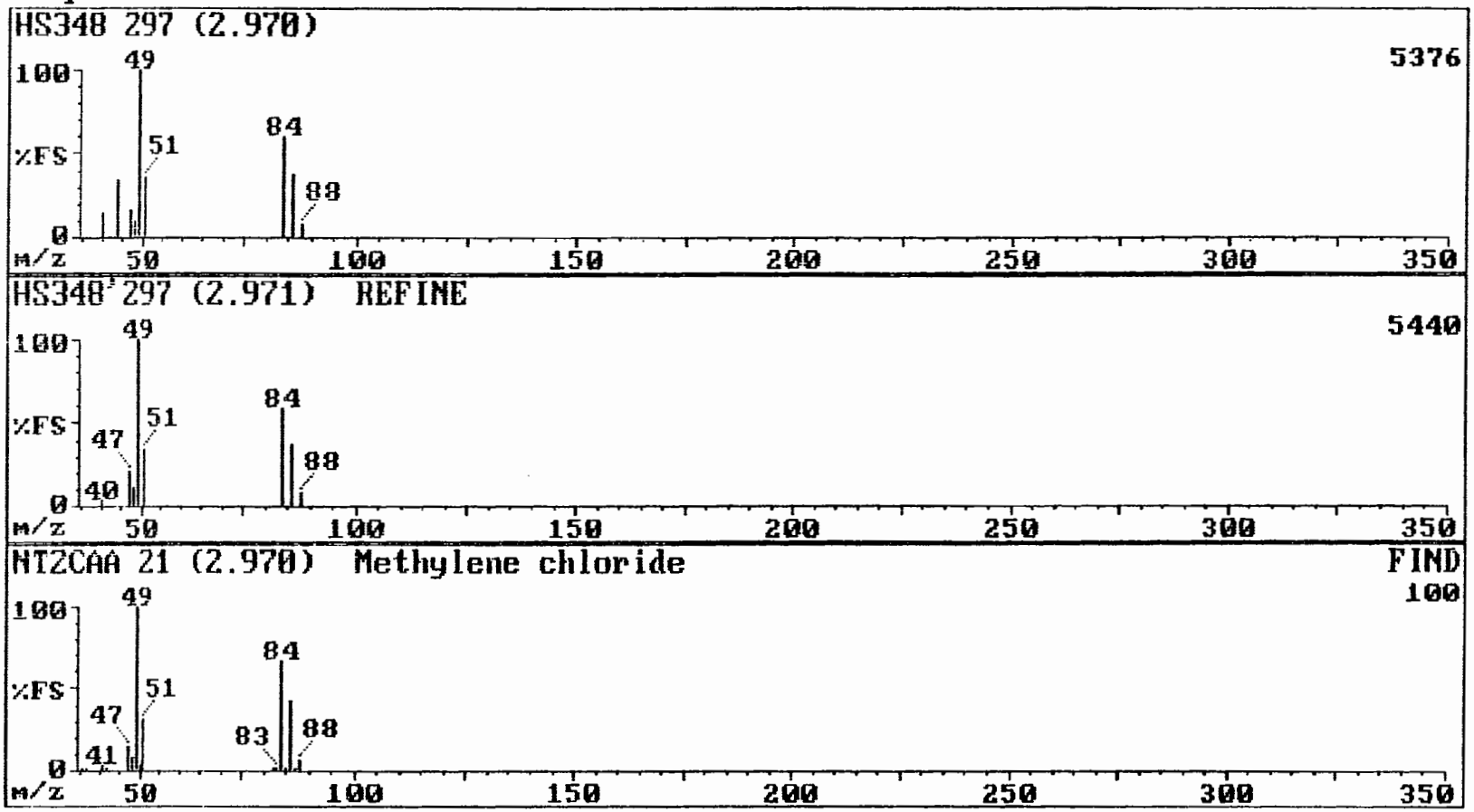
07-08-97 20:22 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOSTBLK T/TC Instrument H



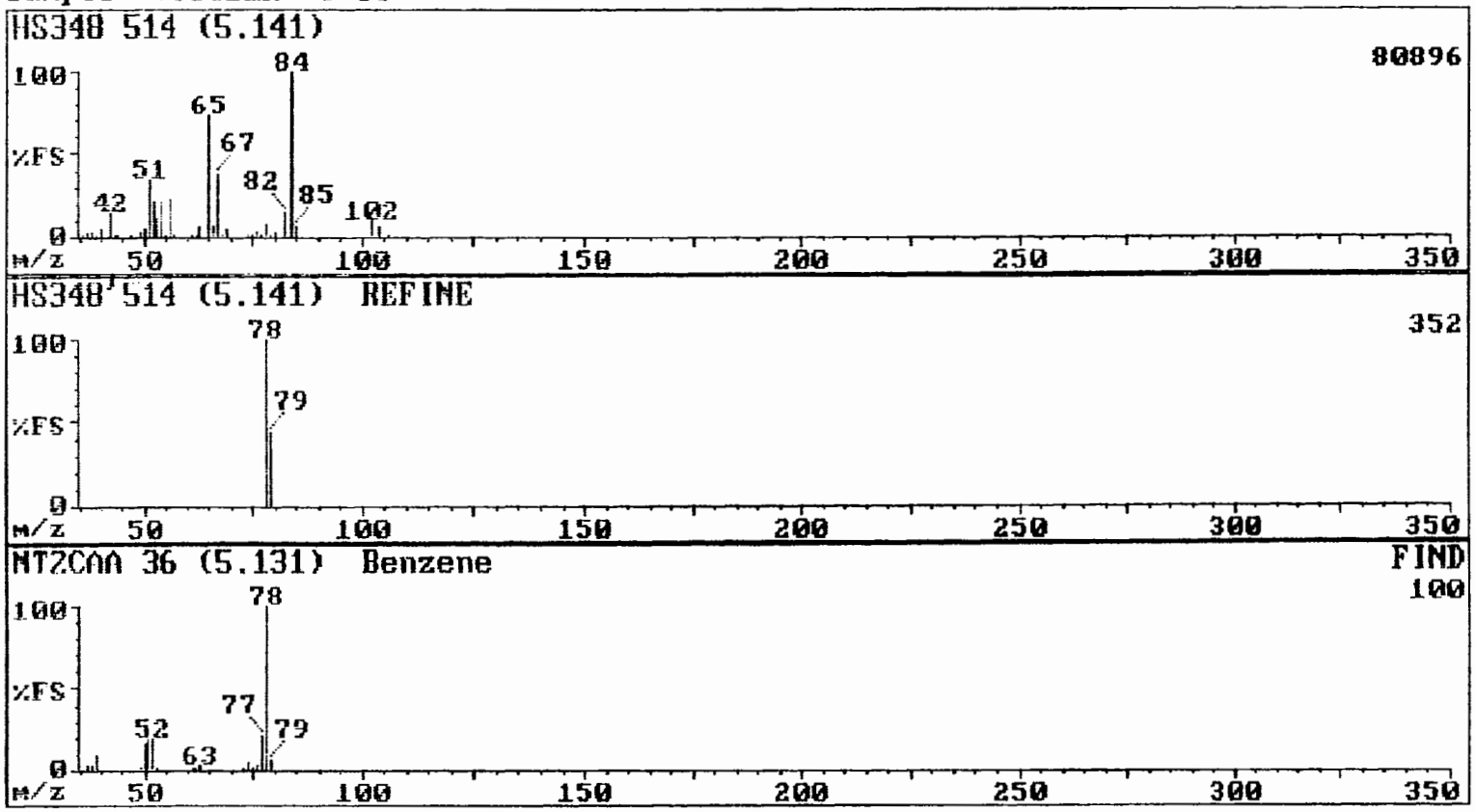
07-08-97 20:22 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOSTBLK T/TC Instrument H



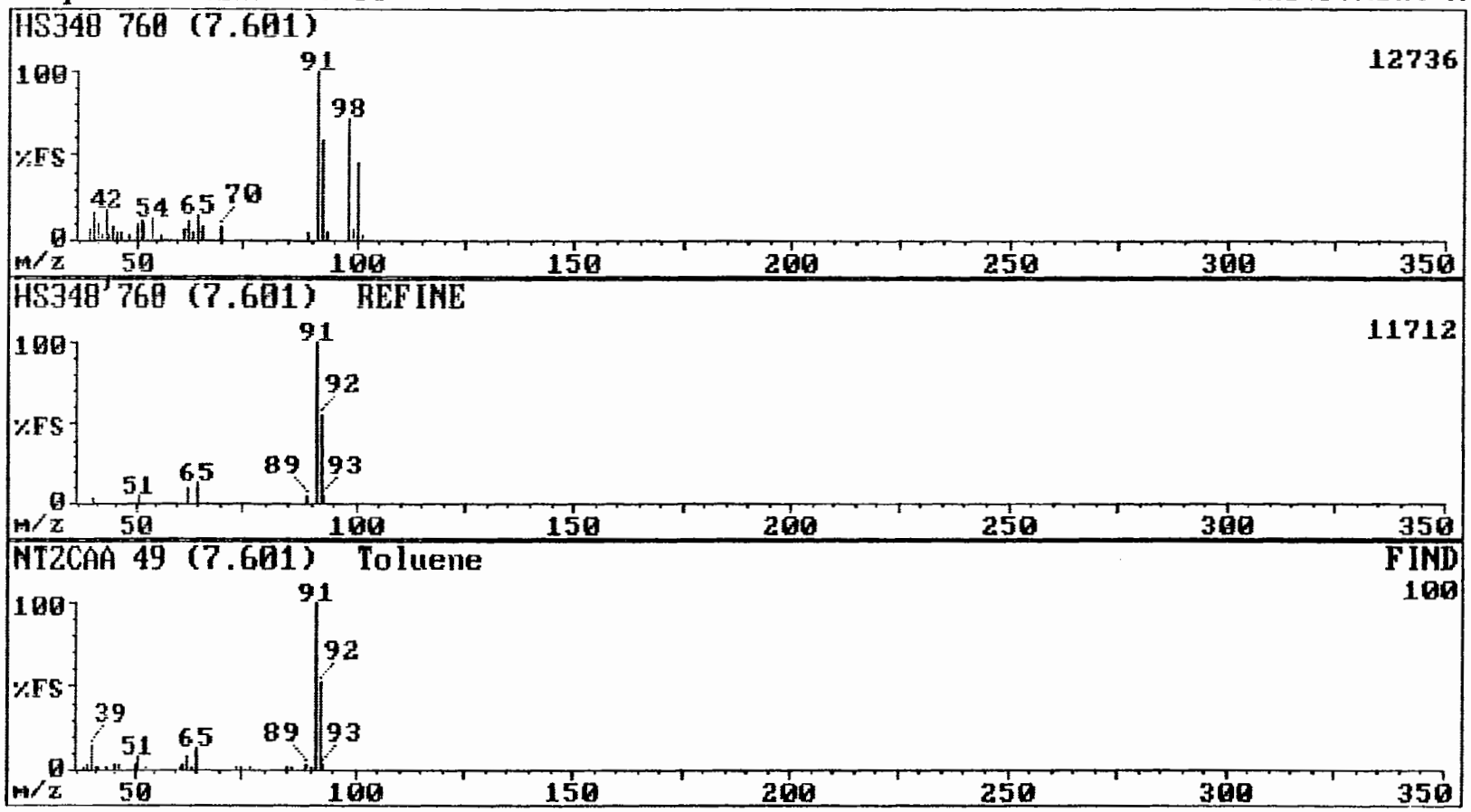
07-08-97 20:22 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOSTBLK T/TC Instrument H



07-08-97 20:22 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOSTBLK T/TC Instrument H



Pacific Environmental Services

Project Number: 42284
Sample File: HS364

Method 8240A VOST
Sample ID: VOSTBLK 070997 T/TC

Client Project: S407-003
TLI ID: VOSTBLK070997

Date Received: / /
Date Analyzed : 07/09/97

Response File: ICALH708

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
Bromochloromethane		IS 1	4.48		
Chloromethane		U		0.001	0.05
Vinyl Chloride		U		0.001	0.05
1,3-Butadiene		U		0.001	0.05
Bromomethane		U		0.001	0.05
Chloroethane		U		0.001	0.05
Vinyl bromide		U		0.001	0.05
Trichlorofluoromethane		U		0.001	0.05
1,1-Dichloroethene		U		0.001	0.05
Iodomethane		U		0.001	0.05
Carbon disulfide		U		0.001	0.05
Acetone	0.022	J	2.54		0.05
Allyl chloride		U		0.001	0.05
Methylene chloride	0.014	J	2.95		0.05
trans-1,2-Dichloroethene		U		0.001	0.05
tert-Butyl methyl ether		U		0.001	0.05
Acrylonitrile		U		0.004	0.05
n-Hexane		U		0.001	0.05
1,1-Dichloroethane		U		0.001	0.05
1,2-Epoxybutane		U		0.003	0.05
cis-1,2-Dichloroethene		U		0.001	0.05
Chloroform		U		0.001	0.05
1,2-Dichloroethane		U		0.001	0.05
Isooctane		U		0.001	0.05
1,4-Difluorobenzene		IS 2	5.63		
Vinyl acetate		U		0.001	0.05

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

Triangle Laboratories of RTP, Inc.
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Printed: 15:01 07/22/1997

Pacific Environmental Services

Project Number: 42284
Sample File: HS364

Method 8240A VOST
Sample ID: VOSTBLK 070997 T/TC

Client Project: S407-003
TLI ID: VOSTBLK070997

Date Received: / /
Date Analyzed : 07/09/97

Response File: ICALH708

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
2-Butanone		U		0.007	0.05
1,1,1-Trichloroethane		U		0.001	0.05
Carbon tetrachloride		U		0.001	0.05
Benzene	0.037	J	5.11		0.05
Trichloroethene		U		0.001	0.05
1,2-Dichloropropane		U		0.001	0.05
Ethyl acrylate		U		0.001	0.05
Methyl methacrylate		U		0.001	0.05
Bromodichloromethane		U		0.001	0.05
cis-1,3-Dichloropropene		U		0.001	0.05
trans-1,3-Dichloropropene		U		0.001	0.05
1,1,2-Trichloroethane		U		0.001	0.05
Dibromochloromethane		U		0.001	0.05
Ethylene dibromide		U		0.001	0.05
Bromoform		U		0.001	0.05
Chlorobenzene-d_5		IS 3	9.76		
4-Methyl-2-pentanone		U		0.001	0.05
Toluene	0.009	J	7.57		0.05
Tetrachloroethene		U		0.001	0.05
2-Hexanone		U		0.001	0.05
Chlorobenzene		U		0.001	0.05
Ethylbenzene		U		0.001	0.05
m-/p-Xylene		U		0.001	0.10
o-Xylene		U		0.001	0.05
Styrene		U		0.001	0.05
1,1,2,2-Tetrachloroethane		U		0.001	0.05

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit
IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

Pacific Environmental Services

Project Number: 42284
Sample File: HS364

Method 8240A VOST
Sample ID: VOSTBLK 070997 T/TC

Client Project: S407-003
TLI ID: VOSTBLK070997

Date Received: / /
Date Analyzed : 07/09/97

Response File: ICALH708

Analyte	Amount ug	FLAG	RT	Det. Limit ug	Quan. Limit ug
Cumene		U		0.001	0.05

Surrogate Summary	Amount (ug)	RT	IS Ref	%REC
1,2-Dichloroethane-d_4	0.269	5.08	1	108
Benzene-d_6	0.268	5.07	2	107
Toluene-d_8	0.276	7.48	3	110

Reviewed by TW Date 7/22/97

NA- Not Applicable; Det. Limit: Detection Limit; Quan. Limit: Quantitation Limit

IS: Internal Standard; U: Undetected; B: Present In Blank; J: Estimated- Below Quantitation Limit; E: Estimated- Above Calibration Range

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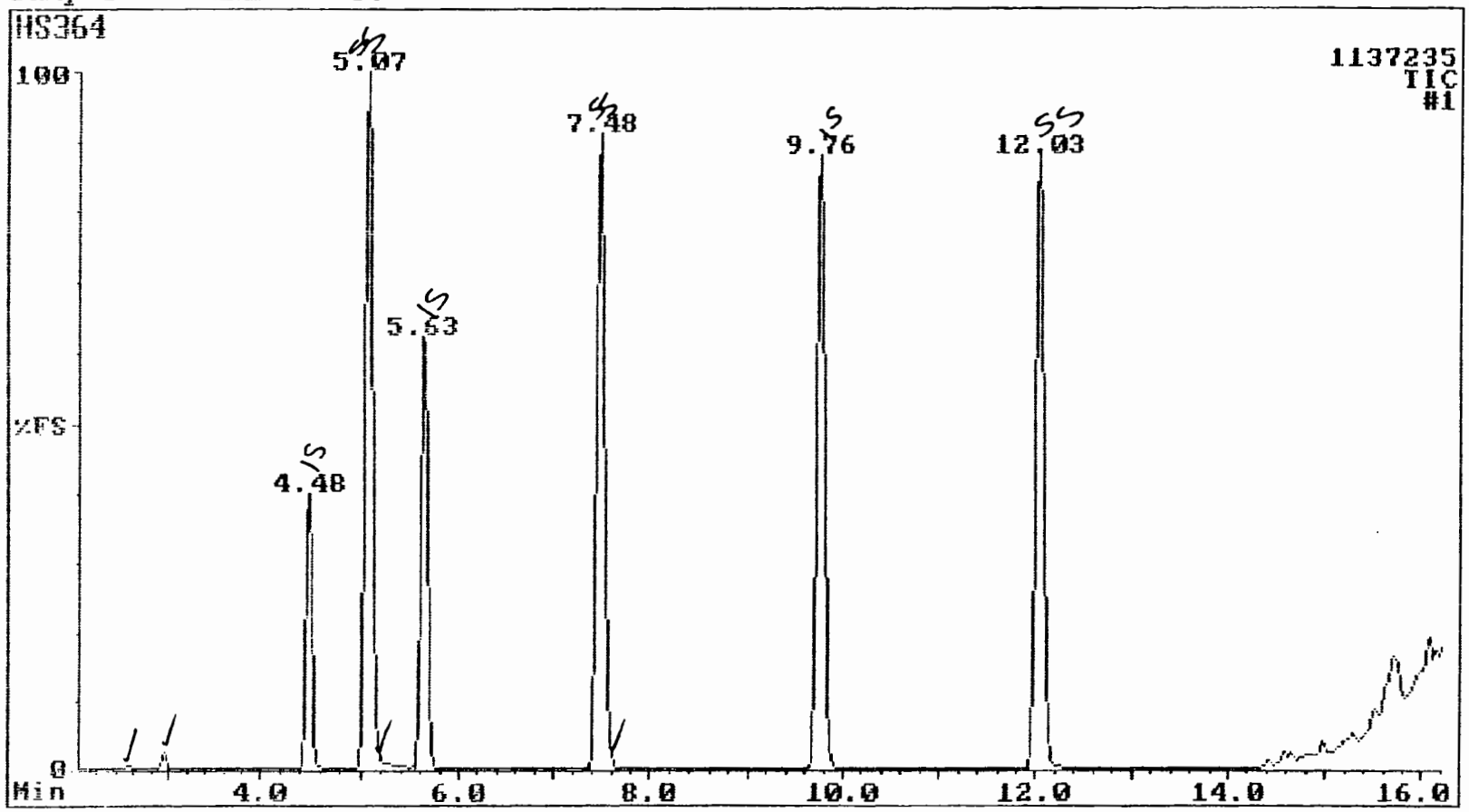
Printed: 15:01 07/22/1997

07-09-97 12:46 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOSTBLK T/TC Instrument H



Data Review: TW
Date: 7-20-97

QUAN-DB : HS364 LAB-BASE QUAN 07-09-97 13:21

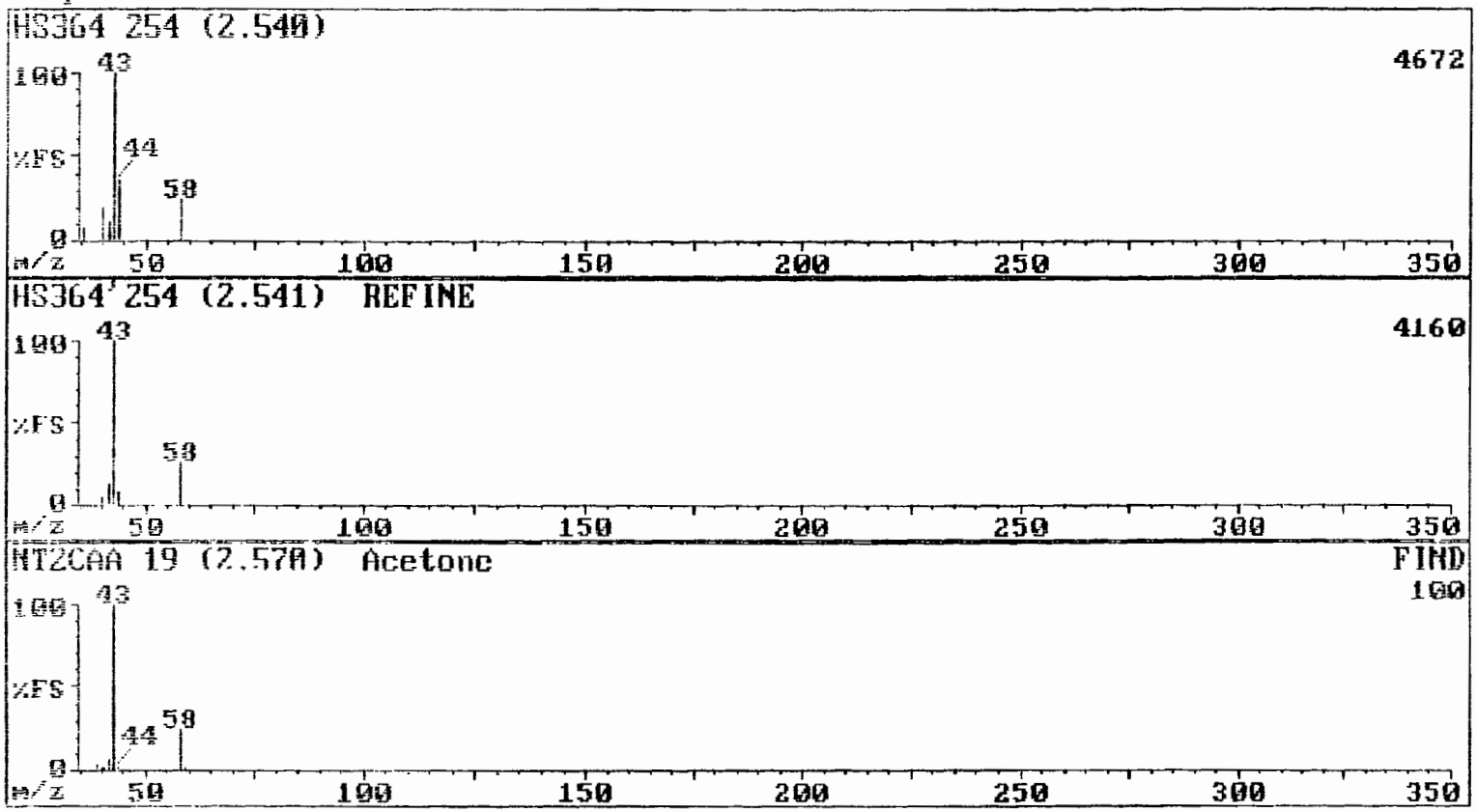
No.	MAT	FOR	REV	Delta	Area	P.Flags	RT	QM	Name
1	100	97	99	-3	304252	bb	4.48	128	Bromochloromethane
2	100	95	97	1	1901592	bb	5.63	114	1,4-Difluorobenzene
3	100	97	97	1	2403496	bv	9.76	117	Chlorobenzene-d5
4	76	38	86	1	879396	bv	5.08	65	1,2-Dichloroethane-d4
5	100	80	81	1	2357164	bb	5.07	84	Benzene-d6
6	100	93	99	0	3013060	bv	7.48	98	Toluene-d8
7	0	0	0	0	0		0.00	98	o-Xylene-d10
8	100	89	93	1	1589188	bv	12.03	95	4-Bromofluorobenzene
~~9~~	~~25~~	~~29~~	~~29~~	~~0~~	~~344~~	~~bb~~	~~0.92~~	~~50~~	~~Chloromethane~~ FP TW
10	0	0	0	0	0		0.00	62	Vinyl Chloride
11	0	0	0	0	0		0.00	39	1,3-Butadiene
~~12~~	~~42~~	~~26~~	~~49~~	~~1~~	~~2700~~	~~A~~	~~1.40~~	~~94~~	~~Bromomethane~~ FP TW
~~13~~	~~19~~	~~35~~	~~35~~	~~36~~	~~19676~~	~~bv~~	~~1.89~~	~~64~~	~~Chloroethane~~ FP TW
14	0	0	0	0	0		0.00	106	Vinyl bromide
15	0	0	0	0	0		0.00	101	Trichlorofluoromethane
16	0	0	0	0	0		0.00	96	1,1-Dichloroethene
17	0	0	0	0	0		0.00	142	Iodomethane
~~18~~	~~47~~	~~31~~	~~46~~	~~2~~	~~1632~~	~~A~~	~~2.46~~	~~76~~	~~Carbon disulfide~~ FP TW
19	95	76	79	-1	35280	bb	2.54	43	Acetone
20	0	0	0	0	0		0.00	76	Allyl chloride
21	100	88	96	0	34456	bb	2.95	84	Methylene chloride
22	0	0	0	0	0		0.00	96	trans-1,2-Dichloroethene
23	0	0	0	0	0		0.00	73	tert-Butyl methyl ether
24	0	0	0	0	0		0.00	53	Acrylonitrile
25	0	0	0	0	0		0.00	57	n-Hexane
26	0	0	0	0	0		0.00	63	1,1-Dichloroethane
27	0	0	0	0	0		0.00	42	1,2-Epoxybutane
28	0	0	0	0	0		0.00	96	cis-1,2-Dichloroethene
29	0	0	0	0	0		0.00	83	Chloroform
~~30~~	~~25~~	~~10~~	~~32~~	~~2~~	~~400~~	~~bb~~	~~5.14~~	~~62~~	~~1,2-Dichloroethane~~ FP TW
31	0	0	0	0	0		0.00	57	Isooctane
32	0	0	0	0	0		0.00	43	Vinyl acetate
33	0	0	0	0	0		0.00	72	2-Butanone
34	0	0	0	0	0		0.00	97	1,1,1-Trichloroethane
35	0	0	0	0	0		0.00	117	Carbon tetrachloride
36	86	80	92	13	358632	A	5.11	78	Benzene
37	0	0	0	0	0		0.00	130	Trichloroethene
38	0	0	0	0	0		0.00	63	1,2-Dichloropropane
39	0	0	0	0	0		0.00	55	Ethyl acrylate
40	0	0	0	0	0		0.00	69	Methyl methacrylate
41	0	0	0	0	0		0.00	83	Bromodichloromethane
42	0	0	0	0	0		0.00	75	cis-1,3-Dichloropropene
43	0	0	0	0	0		0.00	75	trans-1,3-Dichloropropen
44	0	0	0	0	0		0.00	97	1,1,2-Trichloroethane
45	0	0	0	0	0		0.00	129	Dibromochloromethane
46	0	0	0	0	0		0.00	107	Ethylene dibromide
47	0	0	0	0	0		0.00	173	Bromoform
~~48~~	~~49~~	~~1~~	~~84~~	~~2~~	~~22604~~	~~A~~	~~7.48~~	~~43~~	~~4-Methyl-2-pentanone~~ FP TW
49	100	80	92	0	65420	bb	7.57	92	Toluene
50	0	0	0	0	0		0.00	164	Tetrachloroethene

Data Review: TW
Date: 7-20-97

No.	MAT	FOR	REV	Delta	Area	P.Flags	RT	QM	Name
~~51~~	~~20~~	~~16~~	~~22~~	~~7~~	~~348~~	~~bb~~	8.85	43	2-Hexanone FP TW
52	0	0	0	0	0		0.00	112	Chlorobenzene
~~53~~	~~22~~	~~42~~	~~42~~	~~25~~	~~2448~~	~~A~~	~~10.34~~	106	Ethylbenzene FP TW
~~54~~	~~62~~	~~52~~	~~52~~	~~1~~	~~2446~~	~~A~~	~~10.34~~	106	m-/p-Xylene
55	0	0	0	0	0		0.00	106	o-Xylene
~~56~~	~~54~~	~~44~~	~~51~~	~~4~~	~~5464~~	~~A~~	~~11.09~~	104	Styrene
~~57~~	~~44~~	~~16~~	~~55~~	~~0~~	~~3444~~	~~A~~	~~12.51~~	83	1,1,2,2-Tetrachloroethan FP TW
~~58~~	~~42~~	~~34~~	~~34~~	~~0~~	~~7064~~	~~A~~	~~11.80~~	105	Cumene

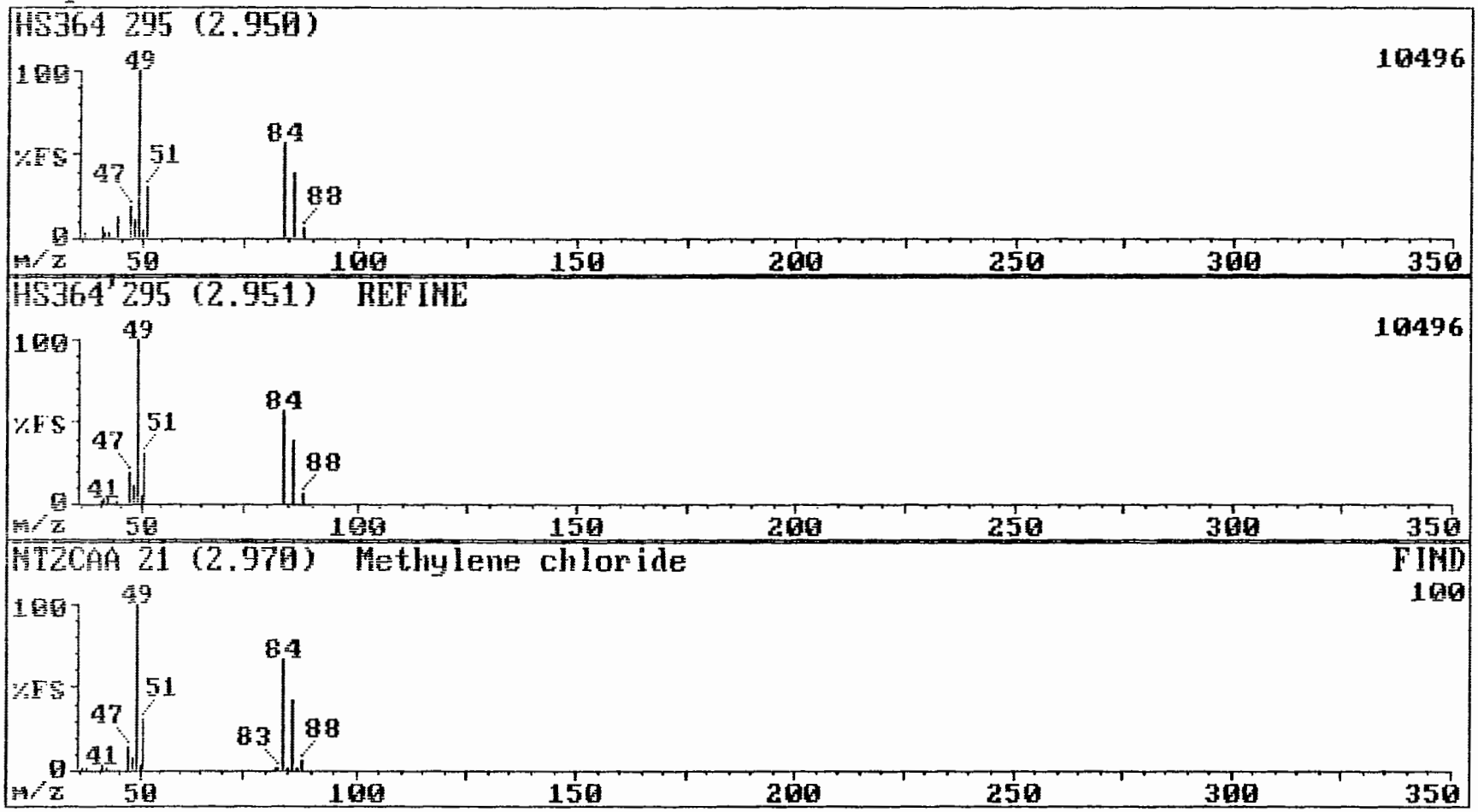
07 09-97 12:46 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOSTBLK T/TC Instrument H



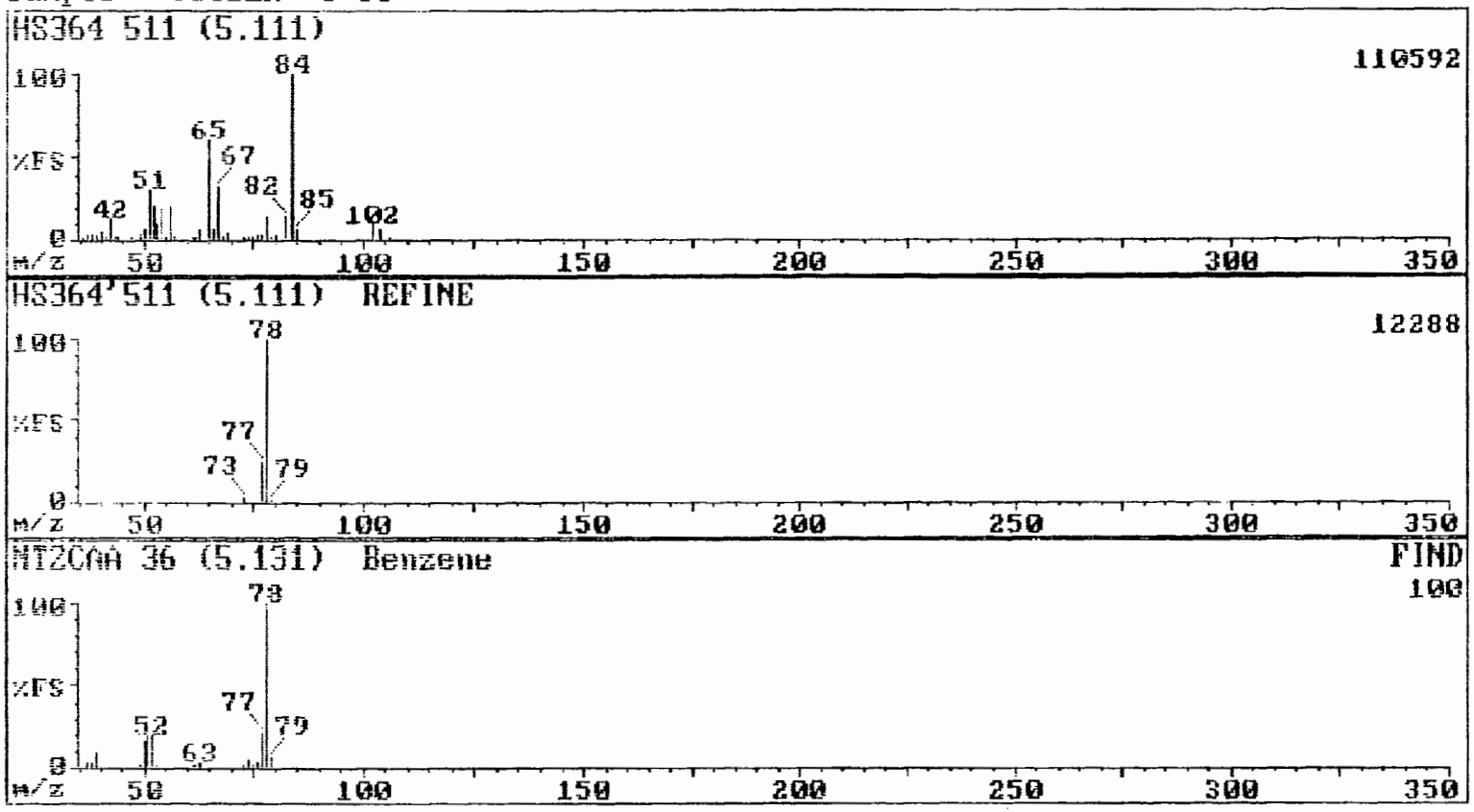
07-09-97 12:46 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: WOSTBLK T/TC Instrument H



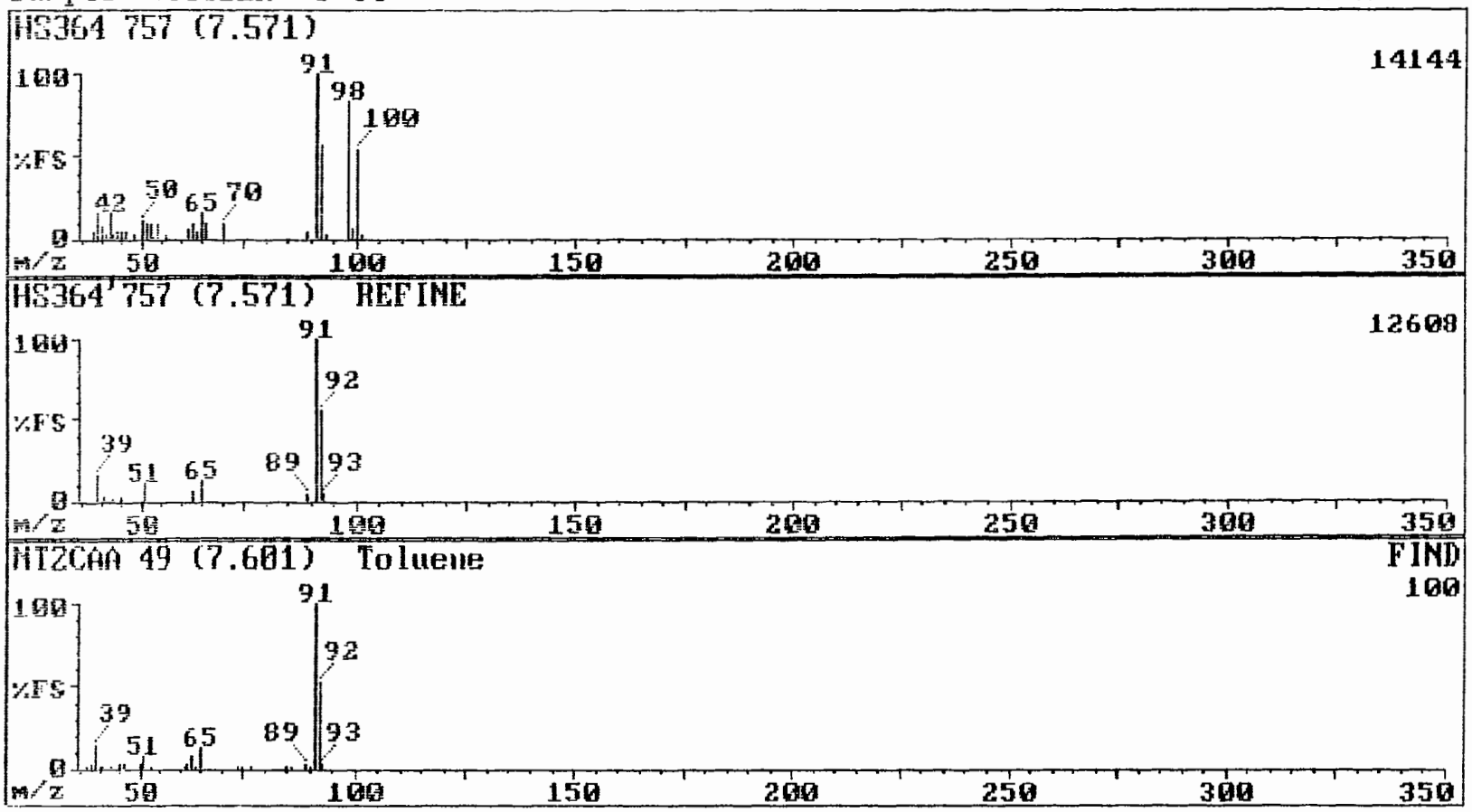
07-09-97 12:46 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOSTBLK T/TC Instrument H



07-09-97 12:46 Triangle Laboratories of RTP, Inc. (919) 544-5729

Sample: VOSTBLK T/TC Instrument H



Triangle Laboratories of RTP, Inc.
Continuing Calibration Curve

CCAL File: HS362	Date of Analysis :07/09/97	Analyte List: 8240A
ICAL File: ICALH708		

VOST Calibration.

Analyte	Flag	RF0.25	RFMEAN	%D
Bromochloromethane	I			
Chloromethane	P	1.657	2.102	21.2
Vinyl Chloride	C	2.042	2.531	19.3
1,3-Butadiene		2.088	2.637	20.8
Bromomethane		1.601	2.204	27.4
Chloroethane		1.193	1.396	14.5
Vinyl bromide		1.807	1.499	-20.5
Trichlorofluoromethane		4.255	2.874	-48.1
1,1-Dichloroethene	C	1.235	1.642	24.8
Iodomethane		3.114	4.290	27.4
Carbon disulfide		4.286	6.311	32.1
Acetone		0.663	1.308	49.3
Allyl chloride		0.998	1.112	10.3
Methylene chloride		1.839	1.970	6.6
trans-1,2-Dichloroethene		1.853	2.072	10.6
tert-Butyl methyl ether		4.038	4.670	13.5
Acrylonitrile		0.388	0.431	10.0
n-Hexane		3.877	4.677	17.1
1,1-Dichloroethane	P	4.867	4.852	-0.3
1,2-Epoxybutane		0.558	0.484	-15.3
cis-1,2-Dichloroethene		2.035	2.074	1.9
Chloroform	C	3.888	3.811	-2.0
1,2-Dichloroethane		3.074	2.949	-4.2
Isooctane		15.591	15.990	2.5
1,4-Difluorobenzene	I			
Vinyl acetate		0.807	0.780	-3.5
2-Butanone		0.027	0.040	32.5
1,1,1-Trichloroethane		0.548	0.541	-1.3
Carbon tetrachloride		0.454	0.443	-2.5
Benzene		1.269	1.267	-0.2
Trichloroethene		0.559	0.566	1.2
1,2-Dichloropropane	C	0.693	0.698	0.7
Ethyl acrylate		0.539	0.508	-6.1
Methyl methacrylate		0.265	0.242	-9.5
Bromodichloromethane		0.963	0.903	-6.6
cis-1,3-Dichloropropene		0.866	0.881	1.7
trans-1,3-Dichloropropene		0.697	0.724	3.7
1,1,2-Trichloroethane		0.365	0.376	2.9

*- Fails QC Criteria for %D; << - Rf less than minimum QC RF; >>- RF greater than maximum QC RF

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Continuing Calibration Curve

CCAL File: HS362	Date of Analysis :07/09/97	Analyte List: 8240A
ICAL File: ICALH708		

VOST Calibration.

Analyte	Flag	RF0.25	RFMEAN	%D
Dibromochloromethane		0.554	0.590	6.1
Ethylene dibromide		0.505	0.494	-2.2
Bromoform	P	0.277	0.332	16.6
Chlorobenzene-d5	I			
4-Methyl-2-pentanone		0.242	0.268	9.7
Toluene	C	0.813	0.740	-9.9
Tetrachloroethene		0.450	0.433	-3.9
2-Hexanone		0.176	0.249	29.3
Chlorobenzene	P	1.029	1.021	-0.8
Ethylbenzene	C	0.547	0.513	-6.6
m-/p-Xylene		0.679	0.638	-6.4
o-Xylene		0.649	0.610	-6.4
Styrene		1.089	1.008	-8.0
1,1,2,2-Tetrachloroethane	P	0.233	0.262	11.1
Cumene		2.110	2.026	-4.1

Surrogate	Flag	RF0.25	RFMEAN	%D
1,2-Dichloroethane-d4	S	2.667	2.691	0.9
Benzene-d6	S	1.245	1.156	-7.7
Toluene-d8	S	1.244	1.135	-9.6

Approved by: TW Date 7/21/97

*- Fails QC Criteria for %D; << - Rf less than minimum QC RF; >>- RF greater than maximum QC RF

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Triangle Laboratories of RTP, Inc.
Continuing Calibration Curve

CCAL File: HS344	Date of Analysis :07/08/97	Analyte List: 8240A
ICAL File: ICALH708		

VOST Calibration.

Analyte	Flag	RF0.25	RFMEAN	%D
Bromochloromethane	I			
Chloromethane	P	1.603	2.102	23.7
Vinyl Chloride	C	2.003	2.531	20.9
1,3-Butadiene		2.081	2.637	21.1
Bromomethane		2.005	2.204	9.0
Chloroethane		1.415	1.396	-1.4
Vinyl bromide		1.689	1.499	-12.7
Trichlorofluoromethane		3.477	2.874	-21.0
1,1-Dichloroethene	C	1.973	1.642	-20.2
Iodomethane		4.903	4.290	-14.3
Carbon disulfide		7.160	6.311	-13.5
Acetone		1.699	1.308	-29.9
Allyl chloride		1.281	1.112	-15.2
Methylene chloride		2.321	1.970	-17.8
trans-1,2-Dichloroethene		2.373	2.072	-14.5
tert-Butyl methyl ether		5.340	4.670	-14.3
Acrylonitrile		0.520	0.431	-20.6
n-Hexane		5.020	4.677	-7.3
1,1-Dichloroethane	P	5.240	4.852	-8.0
1,2-Epoxybutane		0.527	0.484	-8.9
cis-1,2-Dichloroethene		2.190	2.074	-5.6
Chloroform	C	4.048	3.811	-6.2
1,2-Dichloroethane		3.348	2.949	-13.5
Isooctane		17.971	15.990	-12.4
1,4-Difluorobenzene	I			
Vinyl acetate		0.758	0.780	2.8
2-Butanone		0.044	0.040	-10.0
1,1,1-Trichloroethane		0.549	0.541	-1.5
Carbon tetrachloride		0.417	0.443	5.9
Benzene		1.378	1.267	-8.8
Trichloroethene		0.586	0.566	-3.5
1,2-Dichloropropane	C	0.740	0.698	-6.0
Ethyl acrylate		0.567	0.508	-11.6
Methyl methacrylate		0.276	0.242	-14.0
Bromodichloromethane		0.967	0.903	-7.1
cis-1,3-Dichloropropene		0.893	0.881	-1.4
trans-1,3-Dichloropropene		0.720	0.724	0.6
1,1,2-Trichloroethane		0.365	0.376	2.9

*- Fails QC Criteria for %D; << - Rf less than minimum QC RF; >>- RF greater than maximum QC RF

Triangle Laboratories of RTP, Inc.
Continuing Calibration Curve

CCAL File: HS344	Date of Analysis :07/08/97	Analyte List: 8240A
ICAL File: ICALH708		

VOST Calibration.

Analyte	Flag	RF0.25	RFMEAN	%D
Dibromochloromethane		0.553	0.590	6.3
Ethylene dibromide		0.512	0.494	-3.6
Bromoform	P	0.288	0.332	13.3
Chlorobenzene-d5	I			
4-Methyl-2-pentanone		0.268	0.268	0.0
Toluene	C	0.811	0.740	-9.6
Tetrachloroethene		0.463	0.433	-6.9
2-Hexanone		0.264	0.249	-6.0
Chlorobenzene	P	1.042	1.021	-2.1
Ethylbenzene	C	0.550	0.513	-7.2
m-/p-Xylene		0.692	0.638	-8.5
o-Xylene		0.656	0.610	-7.5
Styrene		1.096	1.008	-8.7
1,1,2,2-Tetrachloroethane	P	0.263	0.262	-0.4
Cumene		2.163	2.026	-6.8

Surrogate	Flag	RF0.25	RFMEAN	%D
1,2-Dichloroethane-d4	S	2.880	2.691	-7.0
Benzene-d6	S	1.209	1.156	-4.6
Toluene-d8	S	1.263	1.135	-11.3

Approved by: TW Date 7/28/97

*- Fails QC Criteria for %D; << - Rf less than minimum QC RF; >>- RF greater than maximum QC RF

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Triangle Laboratories of RTP, Inc.
Initial Calibration Curve

ICAL File: ICALH708	Date of Analysis :07/08/97	Analyte List: 8240A
RF0.10 HS339	RF0.25 HS343	RF0.50 HS340
RF0.75 HS341	RF1.00 HS342	

VOST Calibration.

Analyte	Flag	RF0.10	RF0.25	RF0.50	RF0.75	RF1.00	MEAN	%RSD
Bromochloromethane	I							
Chloromethane	P	1.922	2.191	2.061	2.192	2.147	2.102	5.4
Vinyl Chloride	C	2.591	2.607	2.309	2.517	2.632	2.531	5.2
1,3-Butadiene		2.886	2.586	2.408	2.656	2.650	2.637	6.5
Bromomethane		2.345	2.408	1.854	2.103	2.311	2.204	10.3
Chloroethane		1.452	1.413	1.319	1.376	1.419	1.396	3.6
Vinyl bromide		1.555	1.447	1.457	1.537	1.497	1.499	3.2
Trichlorofluoromethane		3.011	2.725	2.989	2.790	2.853	2.874	4.3
1,1-Dichloroethene	C	1.929	1.208	1.917	1.584	1.575	1.642	18.1
Iodomethane		5.032	3.176	4.808	4.335	4.100	4.290	16.9
Carbon disulfide		7.388	4.936	6.982	6.312	5.935	6.311	15.1
Acetone		1.619	1.140	1.135	1.106	1.538	1.308	19.1
Allyl chloride		1.246	0.879	1.230	1.147	1.058	1.112	13.5
Methylene chloride		2.352	1.523	2.212	2.101	1.659	1.970	18.3
trans-1,2-Dichloroethene		2.374	1.580	2.330	2.266	1.809	2.072	17.2
tert-Butyl methyl ether		5.089	3.798	5.304	4.918	4.242	4.670	13.5
Acrylonitrile		0.541	0.353	0.488	0.434	0.340	0.431	20.0
n-Hexane		5.146	4.104	4.898	4.771	4.468	4.677	8.6
1,1-Dichloroethane	P	5.132	4.674	5.051	4.724	4.679	4.852	4.6
1,2-Epoxybutane		0.520	0.434	0.518	0.476	0.471	0.484	7.4
cis-1,2-Dichloroethene		2.046	2.061	2.126	2.052	2.087	2.074	1.6
Chloroform	C	3.694	3.872	3.944	3.698	3.845	3.811	2.9
1,2-Dichloroethane		3.837	2.422	3.261	2.652	2.571	2.949	20.0
Isooctane		20.293	14.411	16.840	14.559	13.845	15.990	16.7
1,4-Difluorobenzene	I							
Vinyl acetate		0.750	0.759	0.803	0.766	0.821	0.780	4.0
2-Butanone		0.025	0.048	0.030	0.039	0.058	0.040	33.8
1,1,1-Trichloroethane		0.506	0.537	0.527	0.562	0.574	0.541	5.0
Carbon tetrachloride		0.434	0.438	0.416	0.446	0.480	0.443	5.3
Benzene		1.755	1.273	1.168	1.030	1.111	1.267	22.6
Trichloroethene		0.558	0.574	0.548	0.577	0.574	0.566	2.2
1,2-Dichloropropane	C	0.706	0.746	0.694	0.674	0.670	0.698	4.4
Ethyl acrylate		0.621	0.529	0.496	0.460	0.433	0.508	14.4
Methyl methacrylate		0.281	0.261	0.234	0.221	0.214	0.242	11.6
Bromodichloromethane		0.883	0.959	0.927	0.857	0.890	0.903	4.4
cis-1,3-Dichloropropene		0.863	0.884	0.917	0.865	0.877	0.881	2.5
trans-1,3-Dichloropropene		0.708	0.747	0.763	0.692	0.710	0.724	4.1
1,1,2-Trichloroethane		0.389	0.381	0.395	0.352	0.362	0.376	4.9

*- Fails QC Criteria for %RSD; << - Rf less than minimum QC RF; >>- RF greater than maximum QC RF

Triangle Laboratories of RTP, Inc.
Initial Calibration Curve

ICAL File: ICALH708	Date of Analysis :07/08/97	Analyte List: 8240A
RF0.10 HS339	RF0.25 HS343	RF0.50 HS340
RF0.75 HS341	RF1.00 HS342	

VOST Calibration.

Analyte	Flag	RF0.10	RF0.25	RF0.50	RF0.75	RF1.00	MEAN	%RSD
Dibromochloromethane		0.558	0.583	0.622	0.577	0.607	0.590	4.3
Ethylene dibromide		0.590	0.495	0.469	0.459	0.460	0.494	11.1
Bromoform	P	0.299	0.336	0.357	0.338	0.329	0.332	6.3
Chlorobenzene-d5	I							
4-Methyl-2-pentanone		0.230	0.297	0.295	0.272	0.249	0.268	10.9
Toluene	C	0.647	0.820	0.748	0.749	0.734	0.740	8.4
Tetrachloroethene		0.345	0.472	0.440	0.454	0.453	0.433	11.7
2-Hexanone		0.174	0.314	0.198	0.229	0.327	0.249	27.6
Chlorobenzene	P	1.034	1.059	1.012	0.997	1.006	1.021	2.5
Ethylbenzene	C	0.436	0.551	0.531	0.523	0.525	0.513	8.6
m-/p-Xylene		0.540	0.696	0.672	0.642	0.639	0.638	9.3
o-Xylene		0.497	0.668	0.638	0.618	0.628	0.610	10.8
Styrene		0.828	1.108	1.061	1.013	1.028	1.008	10.6
1,1,2,2-Tetrachloroethane	P	0.236	0.318	0.293	0.253	0.211	0.262	16.4
Cumene		1.671	2.225	2.079	2.061	2.092	2.026	10.3

Surrogate	Flag	RF0.10	RF0.25	RF0.50	RF0.75	RF1.00	Mean	%RSD
1,2-Dichloroethane-d4	S	3.242	2.745	2.834	2.295	2.337	2.691	14.5
Benzene-d6	S	1.293	1.214	1.121	1.047	1.108	1.156	8.4
Toluene-d8	S	0.933	1.254	1.145	1.188	1.154	1.135	10.6

Approved by: TW Date 7/21/97

*- Fails QC Criteria for %RSD; << - Rf less than minimum QC RF; >>- RF greater than maximum QC RF

TECHNICAL REPORT DATA

Please read instructions on the reverse before completing

1. REPORT NO. EPA-454/R-99-032b	2.	3. RECIPIENT'S ACCESSION NO.
4. TITLE AND SUBTITLE Primary Lead Smelter, Doe Run, Herculaneum, Missouri: Volume II of III		5. REPORT DATE August 1999
		6. PERFORMING ORGANIZATION CODE
7. AUTHOR(S) Frank J. Phoenix		8. PERFORMING ORGANIZATION REPORT NO.
9. PERFORMING ORGANIZATION NAME AND ADDRESS Pacific Environmental Services, Inc. Post Office Box 12077 Research Triangle Park, North Carolina 27709-2077		10. PROGRAM ELEMENT NO.
		11. CONTRACT/GRANT NO. 68-D-70069
12. SPONSORING AGENCY NAME AND ADDRESS U.S. Environmental Protection Agency Office of Air Quality Planning and Standards Emissions, Monitoring and Analysis Division Research Triangle Park, North Carolina 27711		13. TYPE OF REPORT AND PERIOD COVERED Final
		14. SPONSORING AGENCY CODE

15. SUPPLEMENTARY NOTES

16. ABSTRACT

The United States Environmental Protection Agency's (EPA) Emission Standards Division (ESD) is investigating the primary lead smelting source category to identify and quantify organic hazardous air pollutants (HAPs) emitted from blast furnaces. ESD asked EPA's Emissions, Monitoring and Analysis Division (EMAD), and the Emission Measurement Center (EMC) to conduct the required testing. EMC issued a work assignment to Pacific Environmental Services, Inc. (PES) to plan and conduct the air emissions test program to gather emissions data as specified in the ESD test request. The testing program was conducted through EPA Contract No. 68D20162, Work Assignment No. 4-07. The primary objective was to obtain data on the emissions of volatile and semi-volatile organic HAPs, aldehydes, and ketones from primary lead smelter blast furnaces. A secondary objective was to obtain data on the emissions of carbon monoxide. The data will be used by ESD to determine whether organic HAPs are emitted at levels that would justify regulation under the Maximum Achievable Control Technology (MACT) program.

The Doe Run company, which operates a primary lead smelter in Herculaneum, Missouri was selected by the ESD as the host facility for this project. The Doe Run facility operates three primary lead blast furnaces which smelt concentrated lead ore to produce elemental lead. During normal operation two furnaces operate simultaneously with the third furnace down for maintenance. All three furnaces are similar in design and operation. They are semi-batch fed and are tapped continuously. Air emissions from all three furnaces along with fugitive dust form a series of hygiene ventilation systems are exhausted to a common baghouse and stack. In the stack several independent process air exhausts are combined with the baghouse exhaust. In order to quantify the furnace emissions, testing was performed in the baghouse exhaust instead of the stack.

In the performance of this test program, PES used EPA Methods 1-4 and 10, SW-846 Methods 0030 and 0010, Boiler and Industrial Furnace (BIF) Method 0011, and a direct interface, portable gas chromatograph/mass spectrometer.

This volume (Volume II) is comprised of 705 pages and consists of Appendix B.1.

17. KEY WORDS AND DOCUMENT ANALYSIS

a. DESCRIPTIONS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COASTI Field/Group
Baghouse Blast furnace Emission Measurements Hazardous Air Pollutants Primary Lead Semi-Volatile Organic Hazardous Air Pollutants Volatile Organic Hazardous Air Pollutants		

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