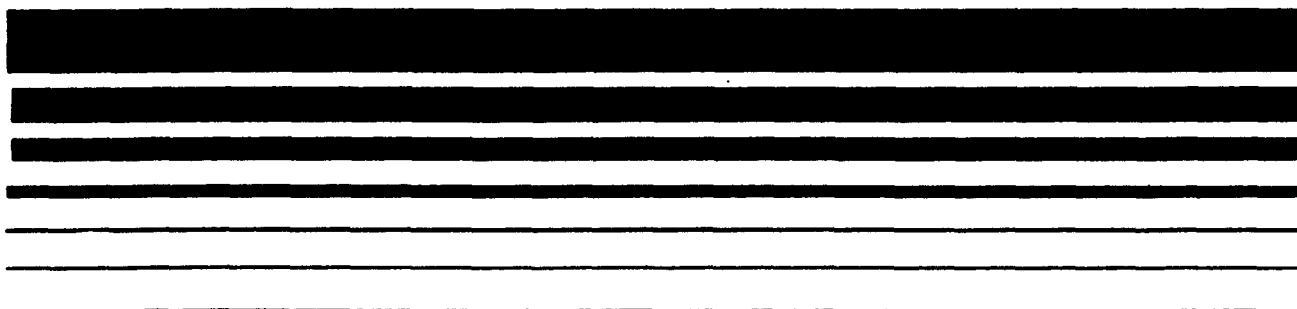




**National Emission Standards
for Hazardous Air Pollutants:
Wood Furniture Manufacturing
Operations - Background
Information Document for
Final Standards**



NESHAP

NATIONAL EMISSION STANDARDS
FOR HAZARDOUS AIR POLLUTANTS
FOR WOOD FURNITURE MANUFACTURING OPERATIONS
BACKGROUND INFORMATION FOR FINAL STANDARDS

Summary of Public Comments and Responses

Emission Standards Division

U. S. Environmental Protection Agency
Office of Air and Radiation
Office of Air Quality Planning and Standards
Research Triangle Park, NC 27711

November 1995

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
1.0 SUMMARY	1-1
1.1 SUMMARY OF CHANGES SINCE PROPOSAL	1-1
1.2 SUMMARY OF IMPACTS OF PROMULGATED ACTION	1-3
2.0 SUMMARY OF PUBLIC COMMENTS	2-1
2.1 APPLICABILITY	2-1
2.2 DEFINITIONS	2-23
2.3 SELECTION OF MACT	2-29
2.3.1 Incinerator Data	2-31
2.3.2 Selection of Median for the MACT Floor	2-33
2.4 EMISSION LIMITS	2-37
2.5 WORK PRACTICE REQUIREMENTS	2-44
2.6 REPORTING AND RECORDKEEPING REQUIREMENTS	2-61
2.7 MONITORING REQUIREMENTS	2-67
2.8 FORMAT OF THE STANDARD	2-69
2.9 COMPLIANCE PROVISIONS AND DATES	2-71
2.10 TEST METHODS	2-84
2.10.1 Proposed Method 311	2-84
2.10.2 Other Test Methods	2-100
2.11 MISCELLANEOUS	2-102

1.0 SUMMARY

On December 6, 1994, EPA published proposed standards to limit emissions of hazardous air pollutants (HAP) from existing and new wood furniture manufacturing operations located at major sources (50 FR 62652). The proposed standards implement Section 112(d) of the Clean Air Act as amended, which require the Administrator to regulate emissions of HAP listed in Section 112(b) of the Act. The EPA also proposed Method 311-- Analysis of Hazardous Air Pollutant Compounds in Paints and Coatings by Direct Injection into a Gas Chromatograph, to be used to assist in demonstrating compliance with the proposed emission limitations. The EPA requested public comments on the proposal in the Federal Register notice. There were 50 commenters, composed mainly of States, trade organizations, coating manufacturers, and wood furniture manufacturers.

This document summarizes all of the comments that were submitted, along with responses to those comments. The summary of comments and responses serves as the basis for the revisions made to the standards between proposal and promulgation.

1.1 SUMMARY OF CHANGES SINCE PROPOSAL

Several changes have been made since the proposal of these standards. The majority of the changes were made to clarify portions of the rule that were unclear to commenters. Other changes include the addition of a category for incidental furniture manufacturers, an exemption for aerosol adhesives and contact adhesives used on nonporous substrates, an additional area source cutoff level, and an option for averaging between controlled and uncontrolled emissions for facilities with an add-

on control device. A summary of the major changes is presented below.

1. Several commenters stated that the rule should not apply to incidental wood furniture manufacturing that takes place at a facility primarily engaged in operations other than the manufacture of wood furniture. The Agency has included in the final rule a category for incidental wood furniture manufacturers to exempt them from this standard. Incidental wood furniture manufacturers are facilities that use no more than 100 gallons per month of wood furniture coatings and adhesives but are major sources due to other unrelated operations at the facility, that is, operations not included in the Standard Industrial Classification (SIC) codes that encompass the wood furniture industry. The only requirement for these facilities is to maintain purchase or usage records to document that their usage of wood furniture coatings and adhesives is less than 100 gallons per month.

2. Many commenters stated that there should be a mechanism for sources that use more than 250 gallons of coatings per month and 3,000 gallons per year but emit less than the major source threshold to escape applicability. A mechanism for exempting these sources has been included in the final rule. Facilities that use materials that contain no more than 4.5 Mg (5 tons) of any one HAP per rolling 12 month material or no more than 11.4 Mg (12.5) tons of any combination of HAP per rolling 12 month period, including materials from source categories other than wood furniture are exempted from this regulation. The source must maintain records that demonstrate that annual emissions do not exceed these levels and submit the records to the Administrator upon request. In order to qualify for this exemption, 90 percent of the plantwide emissions must be associated with the manufacture of wood furniture or wood furniture components.

3. In the final rule, SIC 5712 has been added to the list of wood furniture SIC categories. Facilities manufacturing custom cabinets under SIC 5712 are subject to the regulation.

4. Definitions for "wood furniture" and "wood furniture component" are included in the final rule. Wood furniture is defined as any product made of wood, wood products (such as rattan or wicker), or engineered wood products (such as particle board) that is manufactured under any of the following SIC codes: 2434, 2511, 2512, 2517, 2519, 2521, 2531, 2541, 2599, or 5712. Wood furniture component is defined as any part that is used in the manufacture of wood furniture. Examples include drawer sides, cabinet doors, seat cushions, and laminated tops.

5. The EPA changed the name of the formulation assessment plan to "formulation assessment plan for finishing operations" to clarify that the requirements apply only to finishing materials, not adhesives.

6. The time frame for initial notification has been extended to 270 days. The Agency is planning to prepare an industry guidance document that will include an initial notification form.

7. In the final rule, averaging between controlled and uncontrolled emissions is allowed as a compliance option for those sources who have add-on control devices to reduce emissions from some of their emission points. In addition, it has been clarified in the final rule that for initial compliance, when performing the averaging calculation for the first month, data from before the compliance date should be used so that the calculated value reflects an entire month's operation.

8. The alternative procedures discussed in John Seitz's memorandum "Revised Capture Efficiency Guidance for Control of Volatile Organic Compounds" have been referenced in the final rule.

9. The EPA modified the language of the final rule to state that a source's actual emissions for the year 1996 are to be used to determine the applicable compliance date.

1.2 SUMMARY OF IMPACTS OF PROMULGATED ACTION

The final standards will reduce nationwide emissions of hazardous air pollutants (HAP's) from wood furniture manufacturing operations by an estimated 29,759 Mg/yr

(32,795 tons/yr). The actual reduction in emissions may be larger because this estimate does not include the reduction in emissions that will result from several work practice standards. These standards also could potentially result in a decline in VOC emissions; while the HAP limits do not require the use of lower-VOC materials, the work practice standards should reduce the use of VOC containing materials. The EPA does not anticipate any adverse secondary air, water, or solid waste impacts from the promulgation of these standards.

The implementation of this regulation is expected to result in an overall annual cost of \$15,279,600. Based on the economic impact analysis, the EPA has determined that this rule is not a significant regulatory action. These impacts are identical to those estimated for the proposed standard.

2.0 SUMMARY OF PUBLIC COMMENTS

The EPA received a total of 50 letters from commenters on the proposed standards. A list of commenters, their affiliations, and the EPA document number assigned to their correspondence is given in Table 2-1.

For the purpose of orderly presentation, the comments have been categorized under the following topics:

- 2.1 Applicability;
- 2.2 Definitions;
- 2.3 Selection of MACT;
- 2.4 Emission limits;
- 2.5 Work practice requirements;
- 2.6 Reporting and recordkeeping requirements;
- 2.7 Monitoring requirements;
- 2.8 Format of the standard;
- 2.9 Compliance provisions and dates;
- 2.10 Test methods;
 - 2.10.1 Proposed Method 311;
 - 2.10.2 Other test methods; and
- 2.11 Miscellaneous.

The comments, the issues they address, and EPA's responses are discussed in the following sections of this chapter.

2.1 APPLICABILITY

Comment: Eleven commenters (IV-D-09, IV-D-10, IV-D-22, IV-D-24, IV-D-26, IV-D-27, IV-D-28, IV-D-36, IV-D-38, IV-D-39, and IV-D-43) stated that the wood furniture NESHAP should not apply to minor, incidental manufacture of wood furniture for onsite use at a facility that is primarily engaged in other activities, such as military bases or chemical manufacturing

Table 2-1. LIST OF COMMENTERS ON PROPOSED STANDARDS FOR
THE WOOD FURNITURE MANUFACTURING INDUSTRY

Docket item No. ^a	Commenter/affiliation	Docket item No. ^a	Commenter/affiliation
IV-D-01	Mr. H. Allen Irish National Paint & Coatings Association 1500 Rhode Island Avenue, NW Washington, DC 20005-5503	IV-D-09	Mr. Michael Wax, Ph.D. Deputy Director Institute of Clean Air Companies 1707 L Street NW, Suite 570 Washington, DC 20036-4201
IV-D-02	Mr. K. Hiroshi Fujimoto K. Hiro Fujimoto, Inc. 5171 Rock Run West Bloomfield, MI 48322	IV-D-10	Mr. David Gustafson Environment and Health Regulatory Affairs Mr. Toby Threet Legal Department Dow Chemical Company 2030 Dow Center Midland, MI 48674
IV-D-03	Mr. Bruce McFarlane Interiors Group Coordinator Kohler Co. Kohler, Wisconsin 53044	IV-D-11	Mr. Michael R. Lake Chief, Engineering Division San Diego Air Pollution Control District 9150 Chesapeake Dr. San Diego, CA 92123-1096
IV-D-04	Mr. Dale McKinnon Technical Director Manufacturers of Emission Controls Assn. 1707 L Street NW, Suite 570 Washington, DC 20036-1388	IV-D-12	Mr. W. Caffey Norman, III Patton Boggs, L.L.P. 2550 M Street, NW Washington, DC 20037-1350
IV-D-05	Mr. Jeffrey Shumaker, P.E. Supervisor, Air Regulatory Affairs International Paper International Place I 6400 Poplar Avenue Memphis, TN 38197	IV-D-13	Mr. Stephen P. Risotto Executive Director Center for Emissions Control 2001 L Street, NW, Suite 506A Washington, DC 20036
IV-D-06	Mr. Tim Griffin Manager - Environment, Health, & Safety Gamble Brothers 4601 Almond Avenue P.O. Box 14504 Louisville, KY 40214-0504	IV-D-14	Ms. Patricia Kacsuta Environmental Engineer - Air PPG Industries, Inc. P.O. Box 2009 Allison Park, PA 15101
IV-D-07	Ms. Jacqueline Johnson Director, Government Affairs Styrene Information and Research Center 1275 K Street NW, Suite 400 Washington, DC 20005	IV-D-15	Mr. Doyle R. Pendleton Acting Deputy Director Texas Natural Resource Conservation Commission P.O. Box 13087 Austin, Texas 78711-3087
IV-D-08	Ms. Elsie Munsell Deputy Assistant Secretary of the Navy Department of the Navy Office of the Assistant Secretary (Installations and Environment) Washington, DC 20360-5000	IV-D-16	Ms. Cynthia N. McAlpine 1351 Hollis Circle Dallas, GA 30132

TABLE 2-1. (continued)

Docket item No. ^a	Commenter/affiliation	Docket item No. ^a	Commenter/affiliation
IV-D-17	Mr. David W. Gustafson Environment and Health Regulatory Affairs Mr. Toby Threet Legal Department Dow Chemical Company 2030 Dow Center Midland, MI 48674	IV-D-25	Mr. George A. Hespe Technical Development Manager National Starch and Chemical Company 10 Finderne Avenue P.O. Box 6500 Bridgewater, NJ 08807-0500
IV-D-18	Mr. Ron Methier Chief, Air Protection Branch Georgia Department of Natural Resources 4244 International Parkway, Suite 120 Atlanta, GA 30354	IV-D-26	Mr. Norman L. Morrow Safety and Environmental Affairs Department Exxon Chemical Americas P.O. Box 3272 Houston, TX 77253-3272
IV-D-19	Duplicate entry	IV-D-27	Ms. Terri Thomas Supervisor, Air Toxics Section Ventura County Air Pollution Control District 669 County Square Drive Ventura, California 93003
IV-D-20	Mr. Doyle R. Pendleton Acting Deputy Director Texas Natural Resource Conservation Commission P.O. Box 13087 Austin, Texas 78711-3087	IV-D-28	Mr. Charles W. Keffer Director, Regulatory Management Monsanto Company 800 N. Lindbergh Boulevard St. Louis, MO 63167
IV-D-21	Mr. J. David Thornton Section Manager, Air Quality Division Minnesota Pollution Control Agency 520 N. Lafayette Rd. N. St. Paul, MN 55155-4194	IV-D-29	Mr. Langley A. Spurlock Vice President, CHEMSTAR Chemical Manufacturers Association 2501 M Street, NW Washington, DC 20037
IV-D-22	Mr. Milton Feldstein Air Pollution Control Officer Bay Area Air Quality Management District 939 Ellis Street San Francisco, CA 94109	IV-D-30	Ms. Anita T. Shuhevych Enforcement Specialist Bay Area Air Quality Management District 939 Ellis Street San Francisco, CA 94109
IV-D-23	Ms. Carol J. Niemi Environmental Specialist, Air Issues Mr. Toby Threet Legal Department Dow Chemical Company 2030 Dow Center Midland, MI 48674	IV-D-31	Mr. John H. Phillips Technical Services Ford Motor Company Suite 608 15201 Century Drive Dearborn, MI 48120
IV-D-24	Mr. Raymond F. Pelletier Director, Office of Environmental Policy and Assistance Department of Energy Washington, DC 20585	IV-D-32	Mr. Brock R. Landry Jenner & Block For The Adhesive and Sealant Council 601 Thirteenth Street, NW Suite 1200 Washington, DC 20005

TABLE 2-1. (continued)

Docket item No. ^a	Commenter/affiliation	Docket item No. ^a	Commenter/affiliation
IV-D-33	Mr. Brock R. Landry Jenner & Block For The UF Resin Manufacturers Association 601 Thirteenth Street, NW Suite 1200 Washington, DC 20005	IV-D-40	Mr. Langley A. Spurlock Vice President, CHEMSTAR Chemical Manufacturers Association 2501 M Street, NW Washington, DC 20037
IV-D-34	The National Paint & Coatings Association Washington, DC Kitchen Cabinet Manufacturers Association Reston, VA American Furniture Manufacturers Association High Point, NC The Business & Institutional Furniture Manufacturers Association Grand Rapids, MI	IV-D-41	Ms. Jean Terry Environmental Protection Specialist Colorado Department of Public Health and Environment 4300 Cherry Creek Dr. S Denver, CO 80222-1530
IV-D-35	Mr. William O'Sullivan Administrator, Air Quality Regulation Program State of New Jersey Department of Environmental Protection	IV-D-42	Mr. Stephen P. Risotto Executive Director Center for Emissions Control 2001 L Street, NW, Suite 506A Washington, DC 20036
IV-D-36	Ms. Ellen Scheide 3M Industrial Tape and Specialties Division 3M Center St. Paul, MN 55144-1000	IV-D-43	Mr. Daniel E. Donohoue Manager, Technical Analysis Section State of California Air Resources Board 2020 L Street PO Box 2815 Sacramento, CA 95814-2815
IV-D-37	Mr. Howard M. Maisel President Columbia Cement Company, Inc. 159 Hanse Avenue PO Box 708 Freeport, NY 11520	IV-D-44	Duplicate Entry
IV-D-38	Mr. Christopher A. Collins Supervising Air Quality Engineer Mojave Desert AQMD 15428 Civic Drive, Suite 200 Victorville, CA 92392-2383	IV-D-45	Duplicate Entry
IV-D-39	Mr. Joe J. Mayhew Assistant Vice President Environmental and Policy Analysis Chemical Manufacturers Association 2501 M Street, NW Washington, DC 20037	IV-D-46	Duplicate Entry
		IV-D-47	Ms. Pat Leyden Deputy Executive Officer South Coast Air Quality Management District 21865 E. Copley Dr. Diamond Bar, CA 91765-4182
		IV-D-48	Mr. Langley Spulock Vice President, CHEMSTAR Chemical Manufacturers Association 2501 M Street, NW Washington, DC 20037
		IV-D-49	Mr. James L. Beardsley Senior Technologist 3M Industrial Tape and Specialties Division 3M Center Building St. Paul, MN 55144-1000

TABLE 2-1. (continued)

Docket item No. ^a	Commenter/affiliation
IV-D-50	Mr. Allen Irish on behalf of National Paint and Coatings Association Washington, DC 20005 American Furniture Manufacturers Association High Point, NC 27261 Kitchen Cabinet Manufacturers Association Reston, VA 22091 Business and Institutional Furniture Manufacturers Association Grand Rapids, MI 49546

^aThe docket number for this project is A-93-10. Dockets are on file at EPA Headquarters in Washington, D.C.

facilities. One commenter (IV-D-10) stated that the small amount of incidental wood furniture manufacturing that occurs at each of their facilities does not justify regulation, for the largest group manufacturing wood furniture only uses 170 gallons of coating per month, an amount what is well below the de minimis limit. The commenter also stated that their wood furniture manufacturing occurs without curing ovens and mostly without spray booths, spray equipment, or flashoff areas, and is therefore dissimilar to the operations that the rule is intended to cover. The commenter said that other rules already have shown that EPA can exempt activities that are too small to justify regulation, such as the NESHAP for benzene waste, cooling towers, asbestos, marine vessel loading, and the HON. Several commenters stated that the intent of the NESHAP was to regulate the wood furniture manufacturing industry, and that their companies were not part of that industry.

One commenter (IV-D-22) pointed out that if the final rule does apply to their wood furniture activities, they will most likely move wood furniture manufacturing operations offsite by contracting the work to a local shop, and that this would only "move the emissions a few miles down the road." The commenter also asserted that the rule will reduce HAP emissions from small, incidental furniture manufacturers even if it is not applicable to them because coating manufacturers, driven by demand from large customers, will develop reformulated coating products with lower HAP content. Incidental furniture manufacturers will use these coatings and reduce emissions without the burden of administrative programs, monitoring, recordkeeping, and reporting.

One commenter (IV-D-28) stated that the regulation as proposed will "impose cumbersome recordkeeping and reporting requirements on sites without any or little environmental benefit." The commenter also maintained that "the requirements as proposed will only add to the complexity and frustration of an owner or operator and compliance officers who are required to make compliance determinations when taken in concert with the

numerous recordkeeping and reporting requirements a facility must already comply with under other MACT standards and RCRA rules."

One commenter (IV-D-09) pointed out that the economic analysis did not consider the example of a single noncommercial cabinet built on a military installation. This commenter also suggested that wood furniture manufacturing operations located in industrial areas of installations that are major sources and consume less than a de minimis quantity of the coatings regulated in this rule should be exempt from all requirements except recordkeeping. The commenter suggested eliminating all references to the terms "major" and "area" and specifically defining the "affected source" of regulation.

Two commenters (IV-D-22 and IV-D-24) suggested that EPA consider excluding operations that only produce wood furniture for onsite use from the "manufacturing" category or establishing a materials usage cutoff to exempt small operations at major sources from the entire rule, or at least from the work practice standards. One commenter (IV-D-27) stated that "a lower cutoff, for example 10 percent of the area source limits, could be used as a de minimis level for applicability of the proposed rule at an otherwise major source or a source that exceeds the coating volume cutoffs, but primarily performs a function other than wood furniture manufacturing or coats substrates other than wood furniture."

Another commenter (IV-D-26), however, stated that the proposed small quantity exemptions provide his company no relief since the exemptions apply to the total quantity of materials used, including materials used for source categories other than wood furniture. The commenter stated that since his company's sites are generally large, their use of architectural coatings, glues, and the like for other purposes makes these exemptions useless. Even if the exemptions did apply, the commenter considered the recordkeeping requirements "a difficult, unnecessary, and wasteful" burden for companies where minor furniture repair work occurs and further stated that applying the exemption reporting and recordkeeping requirements to them would

be "in direct conflict with Executive Order 12866." Several commenters suggested as possible solutions either limiting applicability of this proposal to operations in the appropriate wood furniture manufacturing SIC codes or excluding from the affected facility definition any facility where wood furniture operations are performed by an owner/operator or their contractors for the owner/operator's own use.

Response: During the regulatory negotiation process, the Agency focused on facilities primarily engaged in the manufacture of wood furniture. While the Agency realized that some of these facilities were engaged in other operations, such as metal furniture manufacturing and particle board manufacturing that could contribute to their major source determination, they were also large manufacturers of wood furniture. The Agency did not consider those facilities that only manufacture limited quantities of wood furniture for onsite use. To address this issue, the Agency has included in the final regulation a category for incidental wood furniture manufacturers. Incidental furniture manufacturers are defined as those facilities using less than 100 gallons per month of wood furniture coatings and adhesives that are major sources due to other unrelated operations at the facility, that is, operations that are not included in one of the SIC codes that encompass the wood furniture industry. These facilities will be exempt from the requirements of this standard but will be required to maintain purchase or usage records documenting that their use of wood furniture coatings and adhesives is less than 100 gallons per month.

Comment: Three commenters (IV-D-05, IV-D-06, and IV-D-22) stated that what is and what is not subject to the rule should be more clearly defined. They also pointed out that the preamble explains EPA's intent not to regulate certain things but that the rule does not specifically exclude them. Two commenters stated that the rule should provide specific exemptions for the manufacturing of plywood, particle board, oriented strand board, and other engineered wood products, and for gluing operations

that use PVA, hot melt, or urea formaldehyde type glues. In these commenters' views, the preamble discussion is inadequate.

Response: As the commenters point out, the Agency is not regulating the manufacture of plywood, particle board, and other engineered wood products under the wood furniture NESHAP. These operations will be regulated under a future NESHAP for plywood/particle board manufacturers. However, the Agency believes that it is inappropriate and confusing to list those operations that are not regulated in the rule. The regulation establishes emission limits for particular types of finishing materials and for contact adhesives. These emission limits are presented clearly in the regulation. Listing all of those finishing materials and adhesives that are not subject to an emission limit would unnecessarily complicate the rule.

Comment: One commenter (IV-D-05) indicated that the regulation should not address wood furniture components. The commenter pointed out that, as written, the proposed rule defines affected facilities to include operations for which EPA did not evaluate impacts, such as wood furniture "component" manufacturing operations that do not belong to the SIC codes listed and whose products may or may not find their way into wood furniture.

The commenter suggested eliminating any reference to "wood furniture component" and regulation of only the manufacture of "wood furniture." This commenter also stated that the rule should distinguish between wood furniture and wood products, and suggested excluding unfinished wood products and regulating only facilities that manufacture finished wood furniture or finished wood furniture components that are used directly in wood furniture. This commenter further suggested that regulating gluing of unfinished components at facilities that neither manufacture nor finish furniture extends the scope of the rule beyond the industry originally intended for regulation.

Response: The Agency believes that it is important that the regulation address both wood furniture manufacturers and manufacturers of wood furniture components. There are several

kitchen cabinet manufacturers that finish the components of their cabinets at one facility and then assemble the finished components at another facility. Residential furniture manufacturers often purchase finished components such as drawers from other manufacturers. The finishing process is the largest source of emissions from wood furniture manufacturing operations. If the rule did not apply to component manufacturers, the facilities where the finishing occurs would not be regulated in cases where components are finished at one site and assembled at another. This would encourage more facilities to have components finished off site in order to escape regulation and would significantly reduce the environmental benefit of the rule.

Facilities manufacturing unfinished wood components have, under the final regulation, two mechanisms for demonstrating they are exempt from the regulation. As originally proposed, the regulation exempts facilities that use no more than 250 gallons per month, or 3,000 gallons per rolling 12-month period, of finishing, gluing, cleaning, and washoff materials (including materials used in operations other than wood furniture manufacturing). However, as the commenter points out, a manufacturer of unfinished wood furniture components may use more than 250 gallons of adhesives. Many of these adhesives have a very low HAP content. Therefore, EPA included in the final regulation an additional mechanism for exempting these sources. Facilities that use materials containing no more than 12.5 tons per rolling 12 month period of a combination of HAP's, or 5 tons per rolling 12 month period of any one HAP, and maintain certified product data sheets and purchase or usage records for each coating, adhesive, and thinner that demonstrate their emissions are no greater than these levels, are also exempted from the regulation. However, only sources where 90 percent of the total plantwide emissions are from the manufacture of wood furniture or wood furniture components can qualify for this exemption.

Comment: Two commenters (IV-D-16 and IV-D-18) stated that the preamble should clarify that a major source is a source that

emits or has the potential to emit, considering controls, equal to or greater than 10 tons per year of any one HAP or 25 tons per year of multiple HAP's. They stated that this definition is consistent with the major source definition under Section 112(a) of the Clean Air Act. Another commenter (IV-D-37) stated that "§ 112 requires that EPA promulgate a definition of major source that combines the emissions of all collocated sources within the same source category."

Response: The Agency has clarified in the final rule and preamble that the definition of major source includes sources that emit, or have the potential to emit, equal to or greater than 10 tons per year of any one HAP or 25 tons per year of multiple HAP's. As to the comment from IV-D-37 concerning emissions from all collocated sources within the same source category, the Agency would like to clarify that the definition of major source is not limited to emissions from collocated sources within the same source category; it includes emissions from all collocated sources, regardless of the source category (see 40 CFR 63.2).

Comment: One commenter (IV-D-08) noted that, as worded in the preamble, the definition of area source is too limited. The preamble states that "under proposed § 63.800(b), if owners or operators commit to using no more than 250 gallons per month, or 3,000 gallons per rolling 12-month period, of coating, gluing, cleaning, and washoff materials at the plant site, and if the plant does not contain other sources of HAP emissions, then the plant site can be considered an area source to which the rule does not apply," (emphasis added) but the actual section of the rule does not contain this exception. The commenter suggested that EPA modify the underlined statement to read "and if the plant is not otherwise a major HAP source." The commenter asserted that a plant containing other sources of HAP emissions should still be an area source if the combined emissions from coating operations and other HAP emission sources is less than the 10/25 ton/yr major source threshold.

Response: The language in the regulation is not meant to define what is an area source. The intention is to exempt certain sources from the regulation. Sources using greater quantities of materials than the cutoffs given may be major sources based on their potential to emit but actually emit much less than the 10/25 ton cutoff, but, as the proposed regulation is written, they are not necessarily exempted from the regulation. These sources must obtain a Federally-enforceable limit on their potential to emit before the compliance date in order to be exempted from the regulation. This limit ensures the source's potential emissions are below major source thresholds.

Comment: One commenter (IV-D-22) requested a clarification in the final rule as to the applicability of the rule to Furniture Finishing and Restoration (SIC 7641) and Custom Cabinet Manufacture (SIC 5712). Two commenters (IV-D-22 and IV-D-38) stated that EPA should not include furniture refinishing operations in the NESHAP because furniture refinishing often requires that the finishes used match the original finish if the piece is to retain its original value. One commenter (IV-D-22) pointed out that the use of a reformulated finish may require the whole piece to be refinished, resulting in higher emissions. The commenter stated that custom cabinet manufacture should be included in the NESHAP, and that finishes used on custom cabinets are not unique, nor are there any quality requirements beyond those of "high-end" furniture manufacturers that fall clearly within one of the applicable SIC codes.

Response: The Agency agrees that wood furniture refinishing and restoration (SIC code 7641) should not be included in this NESHAP. Wood furniture refinishing and restoration is not considered wood furniture manufacturing for the purposes of this rule. Therefore, facilities operating under SIC code 7641 are not subject to the regulation. The Agency also agrees that facilities manufacturing custom cabinets, which are included in SIC code 5712, should be subject to the regulation. This SIC code includes primarily furniture retailers, which is why the Agency overlooked it in their initial evaluation of the industry.

The final regulation includes facilities operating under SIC code 5712 that manufacture custom cabinets as an example of wood furniture manufacturing, and these facilities will be subject to the rule.

Comment: One commenter (IV-D-38) stated that it is not clear whether coaters of wooden slats for venetian blinds (SIC 2431) are subject to this standard. The commenter recommended that these coaters be exempt from this standard.

Response: Facilities operating under SIC code 2431 are not subject to this regulation unless they also manufacture products from one of the other SIC codes listed in the rule. However, the commenter should be aware that many States have developed rules for manufacturers of all wood products. These States may choose to extend the scope of the NESHAP to include facilities operating under this SIC code and others that include the finishing of products made of wood.

Comment: Nine commenters (IV-D-05, IV-D-20, IV-D-21, IV-D-22, IV-D-27, IV-D-34, IV-D-37, IV-D-40 and IV-D-47) stated that all facilities, regardless of their past emissions or HAP usage, should be eligible to qualify as area sources under the HAP usage limits, and that a facility initially determined to be subject to the rule should be able to subsequently escape applicability. They stated that such sources were by definition area sources and not necessary or appropriate to regulate. One commenter (IV-D-05) pointed out that continuing to treat certain sources as subject to the rule defies the logic of the minor source exclusion and provides a disincentive for reducing emissions. One commenter (IV-D-22) stated that under their district's rules, if a facility falls below an applicability cutoff at any time, the source is no longer subject to the rule; the district's regulatory authority believes this approach encourages a source reduction/pollution prevention strategy. Another commenter (IV-D-27) indicated that past emissions should not be considered in determining applicability of major source MACT provisions.

However, one commenter (IV-D-41) stated that this issue is one that EPA is addressing in broad guidance and should not be included in this rule. The commenter "generally supports the notion of once MACT always MACT."

Response: The policy of "once in, always in" is current Agency policy on this subject. This issue was addressed in a May 16, 1995 memo "Potential to Emit for MACT Standards-- Guidance on Timing Issues" from John Seitz, Director of the Office of Air Quality Planning and Standards, to the directors of Regions I through X. The Agency believes that this once in, always in policy follows most naturally from the language and structure of the Clean Air Act. In many cases, application of MACT will reduce a major emitter's emissions to levels substantially below the major source thresholds. The Agency believes that there would be substantial implementation disadvantages to allowing a source to drift in and out of major source status. A once in, always in policy ensures that MACT emissions reductions are permanent, and that the health and environmental protection provided by the MACT standards is not undermined.

Comment: Three commenters (IV-D-15, IV-D-21, and IV-D-35) requested that EPA exempt permitting of area sources in this category. One commenter (IV-D-15) stated that State agencies have a significant burden in the permitting of major sources at this time and since sources subject to area source standards will have to comply regardless of whether a permit is issued, the commenters did not believe the additional burden of permitting area sources will have a corresponding air quality benefit.

Response: The rule does not require permitting of area sources as written and the Agency believes that modifying the regulation to include language specifically exempting area sources from permitting is beyond the scope of this regulation.

Comment: Nine commenters (IV-D-03, IV-D-07, IV-D-20, IV-D-22, IV-D-24, IV-D-34, IV-D-37, IV-D-43, and IV-D-47) stated that EPA should provide a mechanism in the rule for sources that use more than the 250/3,000 gallon levels but emit less than the

major source HAP limits to establish themselves as area sources. One commenter (IV-D-22) suggested the affected facilities should be required to keep records of the quantities of materials throughput, VHAP content, and calculated HAP emissions. The commenter also recommended that monthly recordkeeping be required, that sources with HAP emissions in excess of 2 tons per year (tons/yr) be required to submit annual reports, and that facilities with emissions below this cutoff be required to submit reports only upon the request of the regulatory authority. Several commenters suggested allowing potential to emit limits to be set on a case-by-case basis.

Another commenter (IV-D-18) stated that permitting authorities should be given discretion to determine when a source can qualify as an area source. The commenter said that this would enable State and local agencies to set policies consistent with other programs within that State or locality.

One commenter (IV-D-20) stated that sources that use more than the 250/3,000 gallon limits should accept case-by-case operating restrictions and maintain monthly records of HAP emissions. Adequate compliance documentation would be an annual self-certified report. Another commenter (IV-D-37) stated that sources that use more than the 250/3,000 gallon limits should be required to maintain records demonstrating that the HAP content of the materials is such that emissions from the source would not exceed major source thresholds.

Response: The Agency agrees that an additional mechanism is needed to exempt sources that use more than 250 gallons of materials per month, or 3,000 gallons per rolling 12-month period, but emit less than 25 tons of a combination of HAP's or 10 tons of a single HAP. For example, a facility may use more than 250 gallons of polyvinyl acetate adhesive but still emit less than 1 ton of HAP per year. Therefore, the Agency has added an additional option that facilities may use to demonstrate that they are exempt from the regulation. If a facility uses materials containing no more than 12.5 tons of a combination of HAP's or 5 tons of any one HAP per rolling 12 month period and

the facility maintains certified product data sheets and purchase or usage records for each coating, adhesive, and solvent, to demonstrate their emissions are below these cutoffs, then they are exempted from this regulation. However, this exemption is only available to facilities where 90 percent of the plantwide emissions are associated with the manufacture of wood furniture or wood furniture components. Because the 250/3,000 gallon limitation requires less recordkeeping than demonstrating HAP emissions are below a particular level, the regulation allows facilities to use either option to demonstrate that they are exempt from the regulation.

Comment: Three commenters (IV-D-34, IV-D-37, and IV-D-41) provided specific comments on limits on potential to emit. One commenter (IV-D-41) stated that EPA must define "potential to emit," either by policy or rule, on a broad basis and not in individual rules, unless specific circumstances warrant such action. The commenter did not believe that meaningful participation by State and local agencies can occur if potential to emit is defined in individual NESHAP. The commenter stated that EPA needs to allow State and local agencies the flexibility to establish specific Federally-enforceable limits by the mechanisms provided in recent EPA guidance documents.

One commenter (IV-D-34) suggested that EPA explicitly incorporate in this NESHAP all of the methods currently recognized by EPA for limiting a source's potential to emit as alternative means of qualifying for something less than major source status.

One commenter (IV-D-37) supported EPA's efforts to develop workable mechanisms that allow sources to accept limits on their potential to emit, but viewed EPA's requirement that every restriction be Federally enforceable as inconsistent with the Clean Air Act. The commenter stated that the Act "does not require Federal enforceability of physical or operational limitations on the emission capacity of a stationary source." Section 112(a)(1) directs EPA to consider controls in determining a source's potential to emit and does not preclude the use of

State limitations or certifications; both the statutory and policy considerations direct EPA to place all limitations on equal footing in determining a source's potential to emit, including those that are only State enforceable and those that are self-implementing through exemptions and certifications.

Response: The Agency believes that the inclusion of PTE limits in a MACT standard clarifies that certain types of sources are below the threshold, and reduces the number of facilities needing case-by-case synthetic area permits. The Agency intends to include provisions on potential to emit timing in future MACT rules and amendments to the Section 112 general provisions.

Regarding the suggestion by commenter IV-D-34 that EPA incorporate in this NESHAP all of the methods currently recognized by EPA for limiting a source's potential to emit, EPA notes that this information is provided in a memorandum signed by the Director of EPA's Office of Air Quality Planning and Standards, John Seitz, which is entitled, "Options for Limiting the Potential to Emit (PTE) of a Stationary Source Under Section 112 and Title V of the Clean Air Act (Act)," dated January 25, 1995. This memorandum outlines a transition plan that lessens the impact of the Federal enforceability requirement in the near term.

The Agency believes Federal enforceability is an essential element of establishing limitations on a source's potential to emit; it ensures the conditions placed on emissions to limit a source's potential to emit are enforceable by EPA and citizens as a legal and practical matter, thereby providing the public with credible assurances that otherwise major sources are not avoiding applicable requirements of the Act. In addition, Federal enforceability provides source owners and operators with assurances that limitations they have obtained from a State or local agency will be recognized by EPA.

The EPA believes that it must have the direct right to enforce restrictions and limitations imposed on a source to limit its exposure to Act programs. This requirement is based both on EPA's general interest in having the power to enforce "all

relevant features of SIP's that are necessary for attainment and maintenance of NAAQS and PSD increments" (see 54 FR 27275, citing 48 FR 38748, August 25, 1983) and the specific goal of using national enforcement to ensure that the requirements of the Act are uniformly implemented throughout the nation (see 54 FR 27277).

The Agency's position on Federal enforceability was challenged in National Mining Association v. Environmental Protection Agency, No. 95-1006 (D.C. Cir.). The Court issued an opinion in this case on July 21, 1995, but no mandate. The final resolution of the Federal enforceability issue in this action will be applicable to all MACT standards under the General Provisions, including the wood furniture MACT rule.

Comment: Five commenters (IV-D-20, IV-D-22, IV-D-27, IV-D-43, and IV-D-47) agreed that the 250/3,000 gallon usage levels and the monthly recordkeeping requirement are an adequate mechanism for small facilities to establish themselves as area sources. One commenter (IV-D-47) stated that they support the proposed cutoff limits if sources demonstrate that they will use compliant coatings to the maximum extent possible. One commenter (IV-D-22) stated that the recordkeeping requirements should include documentation of the volume of materials purchased, and that maintaining purchase records should be adequate recordkeeping for smaller facilities (for example, those who purchase less than 600 gallons per year). The commenter said that larger facilities should have to keep records of the volume of materials actually used each month. The commenter also requested that small sources be allowed to demonstrate their status upon request, without initial or ongoing commitment. Two commenters (IV-D-22 and IV-D-27) suggested it be made clear that California's Proposed Rule to Limit Potential to Emit and other mechanisms previously described by EPA for limiting potential to emit may also be applied to wood furniture manufacturing facilities.

However, one commenter (IV-D-18) recommended that EPA lower the coating usage threshold to 208 gallons per month and

2,500 gallons per year. The commenter stated that this lower threshold would provide an ample margin of safety and ensure that a facility which remained below these levels would not be a major source of HAP's. The commenter also suggested that if this lower threshold is used, only monthly usage records should be required.

One commenter (IV-D-41) could not support the exemption without more data. The commenter suggested that the exemption require a limitation on percentage by weight for VHAP's of concern.

Response: The recordkeeping requirement for the 250/3,000 gallon exemption is to maintain purchase or usage records for each coating, adhesive, and thinner that the facility uses in order to demonstrate that the facility's usage is below the cutoff level. Sources must make these records available upon the request of the regulatory agency. No initial notification is necessary for area sources. Sources that do not qualify as area sources under this limit may either qualify under the 5/12.5 ton HAP emissions limit previously discussed or obtain a Federally-enforceable limit on their potential to emit.

Comment: Three commenters (IV-D-32, IV-D-36, and IV-D-37) stated that EPA should include language in the rule to exempt research and development (R&D) facilities. The commenter stated that one could construe that the definition for "wood furniture manufacturing operations" includes R&D facilities that deal with coatings and adhesives for the wood furniture industry since the term "production" is not defined in the rule. The commenter noted that other Clean Air Act regulations contain specific language exempting R&D facilities and stated that EPA should use similar language in the wood furniture NESHAP.

Response: The Agency did not intend to regulate research and laboratory facilities with this rule. The final rule provides a specific exemption for these facilities.

Comment: Two commenters (IV-D-33 and IV-D-35) strongly supported the decision of the EPA to exclude urea-formaldehyde (UF) resin adhesives from the wood furniture rule and to consider them instead in the particle board/plywood NESHAP. One commenter

(IV-D-33) noted that a number of subcategorizations or exceptions would have been necessary in the wood furniture NESHAP to accommodate the diverse applications and emission traits of the UF resin family of adhesives. However, the commenter stated that alternatives to using free formaldehyde to measure the formaldehyde emissions from adhesives must be developed. There is a fundamental difference between the way in which formaldehyde resins work and the way in which solvent-based coatings or adhesives work. Formaldehyde chemically reacts with urea, catalysts, extenders, fillers, and other resin components during the formation of the adhesive bond and only a small portion of unreacted formaldehyde is emitted.

However, one commenter (IV-D-35) stated that EPA's rationale for not regulating formaldehyde seems contradictory and questioned whether EPA has any data to indicate the significance or insignificance of formaldehyde emissions from wood furniture operations. Since formaldehyde is listed as a HAP and a VHAP of potential concern, the commenter recommended EPA reevaluate the way in which formaldehyde is regulated in this NESHAP.

Response: After extensive discussions with the wood furniture manufacturing industry and suppliers of urea-formaldehyde resins, the Agency decided that additional data on formaldehyde emissions from UF resins are needed in order to develop a reasonable approach for regulating these adhesives. All parties agreed that the issues concerning these resins could be better addressed under the particle board/plywood NESHAP, which will allow industry and the Agency time to collect additional data. Therefore, although the Agency is not regulating urea-formaldehyde resin adhesives under this rule, the Agency's intent is not to exempt entirely these resins from regulation, but to regulate them under a more appropriate future rulemaking.

Comment: One commenter (IV-D-35) requested a clarification on how the reconstruction definition in the General Provisions applies to the requirements for determining reconstruction under this NESHAP. The commenter stated that while this paragraph

gives examples of what costs will not be considered in determining whether the source will be considered reconstructed, no guidelines as to how to apply the definition of reconstruction from the General Provisions are given. The commenter recommended that reconstruction apply to equipment, rather than the entire facility, and that the method of comparing the value of the new and replaced equipment be referenced within the rule. The commenter stated that whether this comparison is to be considered on an annual basis, on a total value since promulgation, or for each modification or reconstruction is not clear.

Response: In order for reconstruction to apply to specific pieces of equipment, the definition of affected source for the industry would have to be changed. The EPA adopted the definition agreed upon by the regulatory negotiation Committee and the Agency believes it is appropriate for this industry because it would be extremely difficult to have a more narrow definition of the affected source for this particular industry. One option would be to define a finishing line as the affected source, but in many facilities it is difficult to distinguish one finishing line from another.

The definition of reconstruction is the same for this industry as for any other. The wood furniture NESHAP includes additional language only to clarify the point that for this industry, control equipment includes a broad spectrum of possibilities, and the cost of this equipment should not be included in determining if a source has been reconstructed. For example, a new stainless steel finishing line would be considered control equipment if the facility had to install it in order to use waterborne coatings to meet the HAP limits in the standard.

Comment: One commenter (IV-D-37) stated that EPA should not regulate gluing operations under the Wood Furniture NESHAP. The commenter stated that "EPA's current approach of regulating the use of adhesives in each separate MACT standard will result in the piecemeal regulation of adhesive use, which is inefficient and will certainly result in numerous inconsistent standards in different source categories for gluing activities that are

essentially the same from one category to the next." Several commenters pointed out that no adhesive manufacturers were included on the regulatory negotiation Committee and that EPA decided to regulate adhesives in the rule late in the process.

Response: It is true that adhesive manufacturers were not included on the regulatory negotiation Committee. However, as the preamble points out, the limitations for adhesives were developed outside of the regulatory negotiation. Adhesive suppliers were involved in the development of the standards, but because they were not represented on the Committee the adhesive emission limits are not a part of the final regulatory negotiation agreement.

The Clean Air Act clearly allows EPA to regulate all HAP emission sources at a facility, and gluing is a significant emission source at many wood furniture facilities. Throughout the Agency's discussions with adhesive suppliers, there was one point that the suppliers continued to stress that is contradictory to the commenter's suggestion that gluing operations are essentially the same from one source category to another. This point was that each operation, even within the source category of wood furniture, required adhesives with different performance characteristics. Therefore, the commenter's suggestion that all adhesives should be addressed under one regulation because all gluing operations are the same is inconsistent with the information supplied by other adhesive manufacturers.

Comment: One commenter (IV-D-41) stated that EPA should conduct an area source finding procedure for wood furniture manufacturers. Only major sources of HAP's are covered by this rule and smaller sources may emit VHAP's of concern in quantities resulting in adverse risks to public health. The commenter recommended this finding procedure include synthetic sources.

Response: The majority of the HAP's used by the wood furniture industry are not HAP's of potential concern according to Section 112(g). The HAP's that are considered of potential concern are used only in small quantities. Therefore, the Agency

did not consider it necessary to regulate area sources in this source category.

2.2 DEFINITIONS

Comment: Two commenters (IV-D-05 and IV-D-22) stated that "wood furniture" and "wood furniture component" need to be defined in the rule. One of these commenters (IV-D-05) said that laminated wood products that could be used as a wood furniture component or as building supplies for any number of applications could mistakenly be regulated as a "wood furniture component"; the other commenter (IV-D-22) stated that it is not clear whether the rule covers only components that are made of wood, or could include nonwood items as well.

Response: The Agency agrees that it should include definitions for wood furniture and wood furniture component in the regulation. In the final rule, wood furniture is defined as any product made of wood, wood products, such as rattan or wicker, or engineered wood products, such as particle board, that is manufactured under any of the following standard industrial classification codes: 2434, 2511, 2512, 2517, 2519, 2521, 2531, 2541, 2599, or 5712. Wood furniture component is defined as any part that is used in the manufacture of wood furniture. Examples include drawer sides, cabinet doors, seat cushions, and laminated tops.

Comment: Two commenters (IV-D-21 and IV-D-37) provided comments on the definition of affected source; it is defined in the rule as the entire facility manufacturing the wood furniture or components. One commenter (IV-D-21) noted that it is more common to have existing facilities modify their operations by adding new units or changing existing ones than to build an entirely new facility. Therefore, few sources will be considered new and a new unit at an existing facility only will have to meet the existing MACT limit and will not need to comply for 2 to 3 years (depending on their emissions) after promulgation. The commenter stated that this may make sense when the unit is an integral part of another line, but it does not make sense in any other case. The commenter also stated that if a new unit may be

considered a major source by itself, it should be considered a new source and be required to comply with MACT for new sources rather than existing sources.

One commenter (IV-D-37) stated that the proposed rule's explanation of where new MACT and existing source MACT apply is inconsistent with the Clean Air Act. The commenter pointed out that Section 112(g) provides that changes to existing major sources are only subject to existing source MACT if the changes are "modifications" under the Act and that new source MACT only applies to the construction or reconstruction of a major source.

Response: The EPA adopted the broad definition of affected source on which the Committee agreed in part because it is difficult to define specific pieces of equipment for a wood furniture plant that could be considered the affected source.

The regulation does not imply that modified sources are subject to new source MACT. It clearly states that new source MACT applies to new sources or reconstructed sources. Modifications of existing sources would mean that existing source MACT standards would continue to apply. If an area source becomes major due to a modification, it is subject to existing source MACT. If an area source becomes major due to a reconstruction, it is subject to new source MACT.

Comment: One commenter (IV-D-23) had several concerns about definitions, lack of definitions, and failure to use defined terms. The rule is applicable to "coating, gluing, cleaning, and washoff materials," and also refers to "finishing materials"; therefore, there is a need to define these terms. However, of these five terms, the commenter noted that only "finishing material" is defined in Section 63.801. The commenter maintained that EPA should either add definitions or revise Sections 63.800(b)(2) and 63.803(g) to use terms that already have been defined.

The commenter stated that the definition of "certified product data sheet" (CPDS) should be shortened by deleting the last two sentences, which are unclear. The commenter did not know what EPA meant by "maximum HAP emission potential" in this

context. Opinions could differ widely and could result in different estimates that would make comparisons impossible or misleading.

The commenter stated that the definition of "coating solids" requires the use of Method 24. The definition should say "or an equivalent or alternative method," as the definition for CPDS does.

The commenter stated that the definition of "control device" requires that any pollutant be destroyed or "secured" for "subsequent recovery." It is not always practical to recover a captured pollutant, so the definition should say "or secure the pollutant for subsequent recovery or disposal."

The commenter next asserted that the definition of "enamel" is self contradictory. It says "enamel" is a coat of colored material, applied as a protective topcoat. Then it says the topcoat is applied over a basecoat, primer, or previously applied enamel coats. If enamel is a "topcoat" and "topcoat" is defined as the last film-building finishing material applied, then the previously applied coats apparently could not be enamel.

The commenter further stated that the definition of "Material Safety Data Sheet" (MSDS) inaccurately says MSDS's are "required" by OSHA's hazard communication standard (HCS) for coatings, solvents, cleaning materials, and other materials. The HCS requires MSDS's only for "hazardous chemicals," as that term is defined in the HCS. Many solvents, coatings, etc. are hazardous chemicals, but it is possible for a coating to not be a "hazardous chemical," in which case no MSDS would be required.

The commenter then stated that the definition of "organic solvent" uses the term "volatile organic liquid" without defining it. Also, this definition and the definition for "solvent" both say that the solvent evaporates and does not become a part of the dried film. The commenter said that the EPA should exempt trace quantities because there will always be a few molecules that become entrapped in the film.

The commenter stated that the definition of "VHAP of potential concern" inappropriately refers to the proposed Section 112(g) rule.

Response: "Coating" is defined in the proposed regulation. Cleaning, washoff, and gluing operations are also defined. The Agency does not believe that it is also necessary to define cleaning, washoff, and gluing materials.

The Agency agrees that the last sentence of the definition of certified product data sheet concerning the maximum HAP potential of a coating is confusing, and deleted this sentence in the final rule.

The Agency agrees that the definition of "coating solids" should be modified to be consistent with the certified product data sheet definition, which clarifies that coating solids can be determined using an equivalent or alternative method. The EPA thus modified the definition in the final regulation.

The Agency does not believe that the definition of "control device" requires that the device destroy or secure the pollutant for subsequent recovery. The definition states that "the device may destroy or secure the pollutant for subsequent recovery."

The definition of "enamel" was developed by the coating suppliers to the industry. In fact, an enamel may be a topcoat or it may have another coating applied over it that will act as the topcoat.

The Agency changed the definition of material safety data sheet to reflect the fact that they may not be required for all coatings because not all coatings are considered hazardous chemicals.

The Agency believes that the term "volatile organic liquid" does not require further explanation.

The EPA adopted the definition of "VHAP of potential concern" that was agreed upon by the regulatory negotiation Committee during the development of the formulation assessment plan.

Comment: One commenter (IV-D-24) stated that the EPA should define "usage" as the term is used in the proposed area source

250/3,000 gallons exemption. The commenter stated that EPA should clearly define the term to minimize the potential for misunderstanding or confusion. The commenter questioned if solvent that is used, recycled, and reused is counted each time it is used, or if it is counted only when it is replaced by virgin solvent. The commenter suggested that it may be clearer to base criteria on actual emissions, not usage.

Response: Solvent that is used, recycled, and then reused should only be counted once towards the 250/3,000 gallon exemption. Because a facility may use purchase records to demonstrate that usage is no greater than the proposed cutoffs, the solvent will only be counted once towards the limits. As discussed earlier, the Agency has included language in the final rule that allows facilities to use either usage or emissions to demonstrate that they are exempt from the regulation.

Comment: One commenter (IV-D-21) stated that EPA should define the terms "regeneration mass stream flow" and "each regeneration cycle" in the rule to avoid controversy.

Response: The Agency agrees and has included definitions for these terms in the final rule.

Comment: Two commenters (IV-D-32 and IV-D-36) stated that EPA should clarify the regulation to note that adhesives are not a form of coatings. One commenter (IV-D-32) pointed out that an "unusual definition" is included in the rule for "coating," which is further subdivided into "finishing material" and "adhesives," but "finishing material" is "cryptically defined" as "a coating other than adhesives." The commenters recommended that EPA revise the definitions to make it clear that adhesives are a separate product, not a subset of "coatings," and stated that this distinction is common in most governmental rules and regulations. There are many other rules and regulations which contain the term "coatings," and typically the term does not include adhesives. The commenters stated that a clarification in this rule would have no impact of the coverage or scope of the rule, but would minimize the chance for confusion and questions in the future.

One commenter (IV-D-36) also stated that EPA should change the definition of "adhesive" to make it clear that it excludes adhesive tapes, contact papers, and other materials not intended to be covered by the rule. The commenter requested that EPA either revise the definition of "adhesive," or drop that definition and revise the definition of "contact adhesive" to include language from the CARB "household adhesive" definition.

Response: For purposes of this rule only, the definition of coating has been revised so it does not include adhesives. The Agency has also revised the definition of adhesive so that it specifically excludes adhesive tapes, contact papers, and other substrates that are impregnated with adhesives.

Comment: One commenter (IV-D-34) stated that the regulation should clarify the definition of "organic solvent." The commenter stated that EPA should amend this definition to limit its application to photochemically reactive volatile organics, generally referred to as "volatile organic compounds" or "VOC's."

Response: If a facility is using methylene chloride or 1,1,1-trichloroethane, both of which are HAP's but not VOC's, they should have to account for this usage. The Agency's intent is to require facilities to track all organic solvents that they use for thinning coatings or contact adhesives, cleaning, or washoff, not just those organic solvents that are VOC's.

Comment: One commenter (IV-D-34) stated the term "unenforceable" in the work practice standards is "vague and ambiguous and should be clarified." Industry believes that merely providing that "unenforceable" work practice implementation plans may be rejected provides insufficient notice to facilities which must comply. The commenter stated that EPA should clarify the final rule to provide accurate guidance to industry.

Response: The Agency agrees that the term unenforceable is vague and ambiguous. The EPA has modified the language in the final rule to indicate that the work practice implementation plan must provide mechanisms for ensuring that the work practice standards are being implemented.

2.3 SELECTION OF MACT

Comment: Two commenters (IV-D-22 and IV-D-34) supported the use of only one facility with an incinerator in the MACT floor determination, stating that it appeared that the survey results represented a disproportionate number of facilities with these control devices. Another commenter (IV-D-03) stated that the MACT floor should be redetermined excluding all major sources with VOC control devices. The commenter said industry believes that no more than 1 percent of all major sources use VOC control devices, so the inclusion of a source with a control device in the MACT floor analysis was an overrepresentation, resulting in the MACT floor being set too low. This commenter stated that reduction at the source should be the MACT floor. However, one commenter (IV-D-21) stated that the discussion in the preamble does not reflect that the committee members that felt that control devices were overrepresented had any actual data to substantiate that position and it does not seem defensible to ignore completely an EPA database in favor of anecdotal evidence.

One commenter (IV-D-21) discussed the MACT floor determination for finishing materials. The commenter pointed out that the preamble to the proposed rule states that the committee agreed that the top 12 percent should really not be the top 12 percent of sources, but instead it should represent all industry segments. This decision was made so no industry segment was over represented. The commenter stated that this decision does not make sense in light of the arguments made against subcategorization that state that "the HAP limit of facilities in the source category did not vary significantly according to the industry market segment, the size of the facility, or the manufacturing process." The commenter suggested that if this is true, then the MACT floor should not be lowered by picking and choosing the sources to include so that all industry segments are represented; if this is not true, and the HAP limits varied by industry segment, then the source category should be subcategorized.

Two commenters (IV-D-20 and IV-D-22) agreed with the use of the arithmetic mean in establishing the MACT floor. One commenter (IV-D-22) believed that this method represents the best reading of the Act and that it is important for EPA to maintain a consistent approach when determining the MACT floor; the commenter encouraged the use of the arithmetic mean in subsequent MACT standards. One commenter (IV-D-20) added that the arithmetic mean "represents a technically achievable emission limitation for this industry."

One commenter (IV-D-32) disagreed with the use of the arithmetic mean and stated the median was more appropriate. The use of the arithmetic mean may result in a lower number of industry products being available. However, one commenter (IV-D-41) stated the geometric mean is more appropriate.

Response: The Agency appreciates the commenters' opinions regarding the determination of the MACT floor for finishing materials. In a March 9, 1994 Federal Register notice reopening the public comment period for determination of the MACT floor for NESHAP source categories (59 FR 11018), the Agency considered and solicited comments on more than one interpretation of the statutory language concerning the MACT floor for existing sources. After considering the comments received in response to this request, the Agency published a final rule in the Federal Register on June 6, 1994 (59 FR 29196). In this final rule, the Agency concluded that Congress intended EPA to determine the MACT floor by averaging the best performing 12 percent of sources where there are more than 30 sources in the regulated category. The Agency did not, however, identify any particular number (e.g., the 94th percentile) as the floor for all MACT standards, but instead stated:

EPA retains discretion in important respects in setting Floors for MACT standards, and intends to exercise its discretion, within the statutory framework, to promulgate MACT standards that best serve the public interest. [¶] EPA believes the Agency retains substantial discretion, within the statutory framework, to set MACT Floors at appropriate levels. For example, because Congress did not define the term "average" in section 112(d)(3), or in the legislative

history, it implicitly delegated the authority to EPA to do so. . . . EPA construes the word "average" in section 112(d)(3) to authorize the Agency to use any reasonable method, in a particular factual context, of determining the central tendency of the data set. In addition, EPA has discretion to use its best engineering judgment in collecting and analyzing the data, and in assessing the data's comprehensiveness, accuracy and variability, in order to determine which sources achieve the best emission reductions. EPA also has the discretion in determining how to analyze the data, and thus in determining the appropriate "average" in each category or subcategory.

59 FR 29199 (June 6, 1994).

In determining the appropriate MACT floor for the final rule, EPA exercised this retained discretion in two ways. First, EPA limited the number of sources with incinerators that could be included in the MACT floor determination. This issue is discussed in more detail in Section 2.3.1 below. Secondly, EPA determined, based on its analysis of the data on hand and the facts specific to the operations being regulated in this rulemaking, that the MACT floor should be based on the median of the emission limitations achieved by the best performing 12 percent of sources. A more detailed discussion of this point is presented in Section 2.3.2.

2.3.1 Incinerator Data

The EPA believes there is more than anecdotal evidence to support the inclusion of only one incinerator in the MACT floor. As discussed in the preamble to the proposed rule, to determine the MACT floor, EPA surveyed more than 850 wood furniture manufacturing operations. The EPA's survey was designed with the goal of obtaining a sample of the industry that was representative of both the various market segments and facility sizes. While the Act does not require EPA to obtain data that represents the industry as a whole (Section 112(d)(3) simply requires the MACT floor to be based on the best performing 12 percent of existing sources for which the Administrator has emissions information), EPA began this project with the goal of collecting representative data. The Agency received responses from more than 300 sources, of which 91 were determined either to

be major sources, or to have the potential to be major sources in the absence of control. The EPA estimates, however, that there are over 11,000 wood furniture manufacturers, 750 of which are major sources to which this rule will apply.

When EPA calculated the MACT floor using data from the best-performing 12 percent of these 91 major sources (i.e., the best-performing 11 sources), it found that sources with incinerators were "overrepresented" in the MACT floor. To EPA's knowledge from previous work with equipment vendors, only 8 of the 750 major sources in the entire industry use incinerators. Thus, assuming that all 8 of these sources would be included in the best-performing 12 percent of the 750 major sources (i.e., the best 90 sources), if EPA had data from all 750 major sources, no more than 9 percent of the MACT floor would be comprised of sources with incinerators (8 of 90). By comparison, in EPA's data base of 91 major sources, 4 of the 11 sources that were used initially to determine the MACT floor contained incinerators, which is 44 percent of the MACT floor. The EPA thus decided to exercise its discretion and engineering judgment when analyzing this additional knowledge of the industry and limited the number of sources with incinerators in the MACT floor calculation to one. This gives some representation to incinerators in the MACT floor as would be the case if EPA had data from all 750 major sources, without significantly "overrepresenting" incinerators in the MACT floor. The MACT floor for the final rule thus is based on 11 sources, where sources with incinerators constitute 9 percent of the floor (1 of 11).

Even if all sources with incinerators were excluded from the MACT floor calculation as suggested by one commenter, the resulting MACT floor (the median of the best 11 sources) still would be 1.0 lb VHAP/lb solids. The EPA thus disagrees with the commenter who stated that the inclusion of a source with an incinerator in the MACT floor both overrepresents sources with incinerators, and results in a MACT floor being set too low. Secondly, even if EPA included two sources with incinerators in the calculated MACT floor (which would be equivalent to

18 percent of the MACT floor and 16 major sources with incinerators if the MACT floor had been calculated using data from all 750 major sources), the resulting MACT floor still would be 1.0 lb VHAP/lb solids. For these reasons, EPA believes that it appropriately used the available data when it determined the MACT floor.

2.3.2 Selection of Median for the MACT Floor

As stated in the June 6, 1994 Federal Register, the Agency believes that Congress authorized it to use any reasonable method, in a particular factual context, for defining the term, "average," in Section 112(d)(3) such that it reflects the central tendency of the data set used for a particular rulemaking (59 FR 29199). In the final rule, EPA determined that the median of the best performing 11 sources (i.e., the best performing 12 percent) most accurately reflects the central tendency of the data used to determine the MACT floor, and thus for this rule, is the appropriate interpretation of the term, "average," in Section 112(d)(3).

Upon further consideration, EPA abandoned the weighted average methodology for calculating the MACT floor that was discussed in the preamble to the proposed rule and which was the basis for the proposed MACT standard, because it was inconsistent with both the language of Section 112(d)(3) and EPA's interpretation of that statutory provision as stated in the June 6, 1994 Federal Register (59 fr 29199). As an aside, EPA notes that the weighted average approach, which was an attempt by the Committee to ensure that all market segments could achieve the MACT floor emission limit, results in the same "MACT floor" as the median. Thus, the Committee's view that a MACT floor of 1.0 lb VHAP/lb solids is achievable by all industry segments still applies.

In response to the commenter who said the mean represents the best reading of the Act and it is important for EPA to be consistent when determining the MACT floor, EPA notes that this is not the first MACT floor to be based on the median of a data set. For example, in some rules EPA determined that the median

of the best performing 12 percent of sources would be the best construction of average in Section 112(d)(3) because the mean of the best performing 12 percent of sources did not correspond to an emission limitation achieved by any control technology. (See e.g., 50 FR 25004 [May 13, 1994]). The EPA believes that its approach is consistent and the Agency will continue to exercise reasonable discretion to construe "average" based upon the factual context particular to each rule.

Comment: Two commenters (IV-D-21 and IV-D-41) provided comments on the selection of MACT for finishing materials. The Clean Air Act (CAA) states that the standards promulgated under Section 112 shall require "the maximum degree of reduction in emissions ... that the Administrator, taking into consideration the cost of achieving such emissions reduction, and any nonair quality health and environmental impacts and energy requirements, determines is achievable." One commenter (IV-D-21) stated that it does not appear these criteria were considered when making the determination not to go above the MACT floor. The commenter asserted that it appears that the decision was made based on the assumption that a more stringent level could not "be met by most facilities in the industry segments comprising the MACT floor," that the committee did not want to mandate control equipment, and that work practice standards are also being proposed. The commenter said that this decision does not seem to be based on any elements in the definition and should be reevaluated in accordance with the CAA.

One commenter (IV-D-41) said there are insufficient data to justify establishing the standard at the MACT floor and for not going beyond the floor. The commenter stated that the regulatory negotiation framework should not preclude the requirement for data to justify conclusions and stated that EPA did not go far enough in obtaining data from sources about the category.

Response: The Agency believes that the final MACT standard does go beyond the MACT floor. While the emission limits for coatings and contact adhesives are set at the level of the MACT floor, the work practice standards represent an additional

reduction in emissions. In order to achieve an equivalent reduction in emissions through emission limits for coatings, these limits would have had to been established at a level significantly lower than the MACT floor and at a much higher cost. For example, many facilities would have had to install add-on control devices to meet a lower limit. The work practice standards allow industry to achieve the same reduction at a much lower capital cost using pollution prevention measures. As such, the Administrator believes that the MACT standards and work practices represent the most cost effective, maximum reduction in emissions that is achievable.

Comment: Four commenters (IV-D-20, IV-D-32, IV-D-36, and IV-D-37) provided comments on the calculation of the MACT floor for adhesives. One commenter (IV-D-20) stated that using a limit of 200 gallons in the calculation may result in standards that are too stringent for "stand-alone adhesive operations." The commenter suggested excluding operations using 3,000 gallons or less per year. One commenter (IV-D-32) supported the approach, stating that "these are insignificant uses which should not be used to determine the fate of an industry and the quality of products that are provided to the American people."

One commenter (IV-D-32) stated that EPA should have used the best five data points to determine the floor, since there were less than 30 points total. Another commenter (IV-D-37) stated that the MACT floor calculation did not make an attempt to use the available data in a manner that would represent the industry as a whole; the MACT floor was not established at the average emission limitation achieved by every source in the top 12 percent of best controlled sources; and the MACT floor was determined separately for the individual emission units within the source category, rather than being based on the performance of major sources in the source category. The commenter also stated that EPA's determination of the MACT floor and the MACT limitation in the proposed rule is unclear and may well be inconsistent with the statutory requirements of the Clean Air Act because the proposed limitations, which were determined on the

basis of partial information, were never demonstrated to be equivalent to the limitations that would be determined if data were available on every source in the source category.

One commenter (IV-D-36) stated that in excluding facilities that use less than 200 gallons, adhesives used on nonporous substrates (specialty applications) were likely excluded from the MACT floor calculation. Therefore, the commenter requested that EPA either exempt these adhesives or establish alternative limits and a separate MACT floor for these adhesives.

Response: The Agency appreciates these comments on the development of the MACT floor for contact adhesives. While one commenter supported excluding facilities that used less than 200 gallons of adhesives from the MACT floor determination, one commenter (IV-D-32) indicated that the Agency should exclude facilities using less than 3,000 gallons per year. Facilities using 3,000 gallons per year of contact adhesives formulated with either methylene chloride or 1,1,1-trichloroethane, both of which are commonly used solvents in contact adhesives, would likely emit more than 12 tons per year of these HAP's. The Agency cannot justify excluding facilities from the MACT floor that are major sources based on their emissions from adhesives alone.

As commenter IV-D-32 points out, the Agency did have fewer than 30 data points in the data base used to develop the MACT floor for contact adhesives. However, the Agency believes that in those cases where the source category includes more than 30 sources, the MACT floor should be based on the best performing 12 percent of sources, not the best 5, even though the Agency has fewer than 30 data points. The criterion for using the best performing 5 sources is that the source category must have no more than 30 sources, not that the Agency must have data on more than 30 sources. The Agency attempted to obtain a representative survey of this industry, sending out more than 800 surveys and receiving 350 completed surveys. Only 91 of the 350 sources completing the survey were major sources and less than 30 of these sources used contact adhesives. These sources were used to develop the MACT floor. As to the comment from IV-D-37 that the

proposed limitations are based on partial information and were not demonstrated to be equivalent to the limitations that would be determined if data were available on every source, Section 112 of the Clean Air Act only requires that MACT be based on the data available to the Administrator. It does not require the Agency to have data on every source in the source category. This would be an almost impossible task with an industry the size of the wood furniture industry.

2.4 EMISSION LIMITS

Comment: Eleven commenters (IV-D-05, IV-D-12, IV-D-13, IV-D-20, IV-D-22, IV-D-25, IV-D-30, IV-D-32, IV-D-34, IV-D-36, and IV-D-37) provided comments regarding the proposed HAP-limits for contact adhesives. Four of these commenters stated that it is unclear whether the glue HAP-content restrictions pose technical impossibilities for the industry. One commenter (IV-D-12) stated that nothing in the existing data suggests that formulations with as low as 0.2 kg HAP/kg solids will be available in the foreseeable future and that there is no evidence that water-based adhesives are a viable alternative for the majority of new or existing sources. One commenter (IV-D-32) pointed out that "the fact that a particular technology is available for some applications does not automatically mean that it can be used in all others." Another commenter (IV-D-13) went on to say that the principal drawback of waterborne adhesives is their inability to pass the flammability testing requirements imposed by Federal, State, and local agencies, and noted that the EPA did not present data that demonstrates the control efficiency required to reach the 0.2 kg HAP/kg solids limit.

However, one commenter (IV-D-25) stated that there are companies which supply adhesives that will meet the proposed limits (even the 0.2 kg HAP/kg solids new source limit) and also will pass the flammability requirements identified by the industry and described in the proposed rule (i.e., California Technical Bulletin 117). One commenter (IV-D-34) stated that "industry supports the levels for existing and new sources for contact and foam adhesives, although there are several

specialized applications ... that require different numbers." Two commenters (IV-D-22 and IV-D-30) stated that their district's proposed Adhesive and Sealant Products rule has VOC limits of only 150 g/L, less water, for adhesives bonding wood to wood and for adhesives used on porous materials, such as foam. The commenters noted that these limits appear to be considerably more stringent than the proposed HAP-limits, even those proposed as new source MACT. One commenter (IV-D-30) stated that during the development of adhesive regulations in California, no comments were received regarding the proposed VOC limit for applications bonding foam to other substrates.

One commenter (IV-D-25) was concerned that EPA has differentiated between contact cements used in the bonding of foam and all other contact cements. The commenter stated that manufacturers of bonded foam often have many individual work stations within a single plant. They can change from constructions where flammability testing is required to constructions where it is not required several times per day. Additionally, some manufacturers pump adhesive from a central storage area to these individual work stations over long distances. Because of these issues, their current practice is to use one adhesive for all constructions. It is unlikely that they will be able to switch routinely from a 1.8 HAP's material to a 1.0 HAP's material. Therefore, this commenter stated that EPA should limit all contact cements at existing sources to 1.0 lb of HAP's per pound of adhesive solids.

However, four commenters (IV-D-32, IV-D-34, IV-D-36, and IV-D-37) supported the separate treatment of foam adhesives because there are particular characteristics of these applications which necessitate different regulatory treatment. One commenter (IV-D-32) stated that foam bonding typically requires a softer, more flexible bond line that will adjust to movement, particularly in foam to foam applications. This commenter also pointed out the flammability requirements and noted that working with foam can produce an electrostatic charge

that could ignite some flammable carriers. The bond line itself must also meet flammability requirements.

Several commenters also requested a higher alternative limit for contact adhesives used with nonporous substrates, such as metal, rigid plastic, flexible vinyl, and rubber. One commenter (IV-D-36) suggested a limit of 1.8 lb VHAP/lb solids for existing sources and a limit of 1.5 lb VHAP/lb solids for new sources for adhesives used on these difficult substrates. This commenter also proposed that these alternative limits apply only to contact adhesives that meet minimum solids contents and certain military specifications that indicate high performance requirements. The commenter estimated that these nonporous substrates represent no more than 4 percent of the adhesive applications in the furniture/woodworking industries and indicated that their experience was that "products containing 1.0 lb VHAP/lb solids or less cannot provide sufficient heat, peel, overlap shear, and water resistances that some customers require." The commenter pointed out that some California air districts have adopted adhesives rules which recognize that applications involving nonporous substrates require adhesives with higher VOC limits than applications involving porous substrates.

One commenter (IV-D-20) agreed with the need for exemptions for aerosol adhesives, since reformulation of aerosol adhesives involves changing the delivery system, as well as the adhesive itself. However, one commenter (IV-D-30) stated that the Bay Area Air Quality Management District has a limit for aerosol adhesives of 75 percent VOC by weight and one commenter (IV-D-36) stated that there was no need for an aerosol adhesive exemption due to the availability of aerosol adhesives that contain VHAP concentrations below the proposed limits for contact and foam adhesives.

Response: The Agency appreciates the comments on the proposed emission limits for contact adhesives. The final emission limits for contact adhesives for both new and existing sources are the same as proposed. The new source value, 0.2 kg VHAP/kg solids (0.2 lb VHAP/lb solids), is based on contact

adhesives currently in use by the industry. Commenter IV-D-12 indicates that this will require the use of waterborne adhesives. The Agency believes that while many facilities will use waterborne adhesives to meet this limit there are also other options, including the use of solvent-borne adhesives where the HAP solvents have been replaced by non-HAP solvents, the use of hot melt adhesives that are now being used by manufacturers of upholstered furniture, and the use of an add-on control device. At least one adhesive supplier (IV-D-25) indicated that there are adhesives available that meet this limit and also pass the flammability requirements. Some local agencies have even more stringent limits for adhesives that are being used in products that pass the flammability tests.

The Agency has included exemptions in the final rule for aerosol adhesives and for contact adhesives used on nonporous substrates such as metal, rigid plastic, flexible vinyl, and rubber. The Agency agrees that these uses represent a small percentage of the total use of contact adhesives by the industry and that the technology is not yet available to formulate these adhesives at the proposed emission limits.

Comment: Two commenters (IV-D-20 and IV-D-22) questioned the need for separate HAP limits for thinning solvents since the HAP limits for finishing materials are expressed on an "as applied" basis. One commenter (IV-D-47) requested clarification on the "as applied" criteria. One commenter (IV-D-20) pointed out that the 10 percent and 3 percent HAP limits would prohibit the use of any single component solvents, such as methanol. The requirement for a specific thinner is dictated by paint system chemistry. One commenter (IV-D-22) however, did not object to the limits, provided the solvent manufacturers believed that they could be met.

Response: The coating suppliers to the wood furniture industry agreed that they could meet the 10 percent and 3 percent limits on the HAP content of thinners. Both of these limits are included to minimize the recordkeeping burden on the industry. Without these limits, the industry would have to maintain data

sheets for each batch of thinned coatings. With the limits, the industry still has to meet an as applied value, but they do not have to maintain records for each batch of thinned coating.

Comment: One commenter (IV-D-37) stated that EPA must expressly provide that this rule will apply only to the list of 189 HAP's listed in Section 112(b) of the Act as it exists at the time of the proposal. The proposal's MACT will necessitate changes in the manufacture of both end products and adhesives because of the major HAP reductions which the promulgated rule will require. Therefore, if the Administrator adds to the Section 112(b) list at any time subsequent to EPA's promulgation of the proposed rule, the final rule should not apply to the use of any new HAP until EPA reconsiders the rule to determine whether the standard is suitable.

Response: The preamble to the proposed rule (see 59 FR 62664) already contains language addressing this issue. The preamble states that the regulatory negotiation Committee recommends that the Agency re-examine the wood furniture emission limits to determine if they should be adjusted if pollutants are added to, or deleted from, the list of 189 HAP's used in the development of the proposed emission limits. The EPA adopted this recommendation, and the final rule applies only to the 189 HAP's presently listed in Section 112(b). In addition, Table 2 of the rule includes a listing of the VHAP's that should be included when determining the VHAP content of a coating.

Comment: Three commenters (IV-D-20, IV-D-21, and IV-D-23) questioned why the regulations in Sections 63.803(f), 63.803(h), and 63.806(b)(3) refer to VOC content when the purpose of the NESHAP is to regulate HAP's. One commenter (IV-D-20) noted the use of three acronyms (VOC, HAP, and VHAP) and suggested that EPA use consistent acronyms and terminology as Part 63 emission standards are proposed and promulgated.

Response: While the rule may appear to be confusing due to the references to VOC, HAP, and VHAP, use of each of these acronyms is necessary. In preparing and reviewing the final rule, the Agency ensured that each of these acronyms was used

consistently throughout the regulation. Concerning the reference to VOC content in the application equipment requirements in Section 63.803(h), EPA agreed with the Committee's finding that the use of a low HAP coating did not justify the use of conventional air spray guns, but the use of a low VOC coating did. It is not always technically feasible to apply low VOC coatings with anything other than conventional air spray guns. The Agency did not want to discourage the use of low VOC coatings by requiring that they be applied with something other than a conventional air spray gun, which is not always technically feasible. Therefore, it adopted the exemption proposed by the Committee. Concerning the limitation on materials used for spray booth cleaning in Section 63.803(f), the EPA agreed with the Committee that organic solvents should not be used for cleaning spray booths, except in limited circumstances. Therefore, the EPA limited the VOC content of these materials. This limit will still allow facilities to use commercial cleaners that contain small quantities of VOC. The final rule also limits the VOC content of the strippable booth coatings used by the industry. The industry agreed that they could use waterborne strippable booth coatings, which will reduce both HAP and VOC emissions. Limiting the HAP content of these coatings will not ensure that the industry moves to waterborne strippable booth coatings but limiting the VOC content will. Therefore, the EPA believes that a VOC limit was appropriate for these coatings.

Comment: One commenter (IV-D-20) stated that the VHAP content limit for coatings should be the same for both new and existing sources. The commenter suggested that it is possible that lower VHAP coatings will work as well as higher VHAP coatings in existing source equipment. If this is the case, the commenter said that the burden to purchase and use low VHAP coatings would be equivalent for both new and existing sources.

Response: The Agency decided that existing source MACT should be based on the MACT floor. Setting the existing source limit at the same level as new source MACT would require facilities to go beyond the floor. The EPA notes that the work

practice standards already represent a reduction in emissions beyond the MACT floor; thus, EPA determined that it was not necessary to set the coating emission limits at a level more stringent than the floor.

Comment: Two commenters (IV-D-32 and IV-D-33) stated that EPA should exclude adhesives other than contact adhesives from the threshold amounts of monthly and annual usage. As written, a facility would have to include all of its PVA, hot melt, and formaldehyde resin adhesives in the computation, even though EPA has determined that it is inappropriate to regulate these products in this rulemaking. One commenter (IV-D-32) stated that "emissions of these products would have no impact on the air quality or potential regulation under the wood furniture NESHAP."

Response: As discussed in an earlier response in 2.1, the Agency has included in the final rule another mechanism for exempting facilities from the regulation. This option allows facilities to demonstrate that they use materials containing no more than 5 tons of any one HAP per rolling 12 month period or no more than 12.5 tons of any combination of HAP per rolling 12 month period. Facilities that use more than 250 gallons of these low emitting adhesives may use this option to demonstrate that they should be exempted from the regulation.

Comment: One commenter (IV-D-43) supported the approach of limiting the HAP or VOC content of coatings, but stated that to adequately protect public health in certain cases, limitations may also be needed on the total facility emissions. The commenter maintained that a source using coatings that meet the applicable HAP or VOC limitations could still cause a significant public health impact because of the magnitude of the emissions or as a result of the source's proximity to residences. The commenter stated that the rule should include provisions for allowing State or local agencies to establish source emission limitations. One possible approach suggested by the commenter would be to allow the implementing agency to require sources to provide additional information to determine if a source emission limitation is needed to protect public health. Including such a

provision would streamline, or possibly make unnecessary, Section 112(l) equivalency requests.

Response: Section 112(f) of the Clean Air Act requires a residual risk analysis for each source category within 8 years. If the standard does not adequately protect the public health, it will be revisited at that time. State and local agencies have the authority to limit a facility's total emissions if they believe it is necessary. However, the Agency does not believe that this approach is necessary for this source category. The formulation assessment plan will limit emissions of the more toxic HAP emitted by this industry.

Comment: One commenter (IV-D-47) stated that this NESHAP imposes product specific concentration limits which their district's market trading programs would replace. The commenter stated that this NESHAP removes the principal benefits of a market trading program and should allow alternative means of achieving equivalent emission limitations for a source, including emissions averaging across all VOC operations at the source.

Response: This NESHAP does allow averaging of coatings to achieve the emission limitations. The Agency is aware of this commenter's concern and is considering it as a broader issue outside of this project.

2.5 WORK PRACTICE REQUIREMENTS

Comment: Seventeen commenters (IV-D-03, IV-D-05, IV-D-07, IV-D-12, IV-D-13, IV-D-16, IV-D-18, IV-D-20, IV-D-21, IV-D-22, IV-D-23, IV-D-29, IV-D-33, IV-D-34, IV-D-35, IV-D-41, and IV-D-42) questioned the need for the Formulation Assessment Plan (FAP) and the use of Section 112(g) in setting de minimis levels for certain pollutants. They also questioned the use of 70-year exposure levels as opposed to 7-year exposure levels in assigning de minimis values to VHAP of potential concern.

One commenter stated that the monitoring and recordkeeping requirements are redundant to those elsewhere in the standard and that limiting the emissions of certain VHAP's over others will limit flexibility in operations. A second commenter stated that the FAP is overly prescriptive and unsupported as a floor

requirement or as a cost effective measure beyond the floor requirement. Another commenter maintained that vague references to "risk" benefits were not evaluated or supported and that other programs such as TRI reporting and worker safety provide adequate incentive to minimize use of hazardous compounds. The commenter also stated that the requirement to track and report any increase in HAP use beyond the prescribed de minimis amounts is an unnecessary command and control regulatory requirement that should be eliminated or deferred until it has been evaluated from a real risk versus cost/benefit standpoint.

One commenter (IV-D-21) stated that the baseline period specified in the rule simply accounts for the usage of materials over 3 years and does not include market considerations or future growth. The commenter stated that as a result, facilities will undoubtedly exceed their baselines and be required to discuss this with the permitting authority, but the permitting authority will have no basis for requiring further action. The commenter stated that FAP is written so broadly that anyone could claim that there are "no practical and reasonable solutions," and thus they are not required to take further action. The commenter concluded that the FAP will become a waste of the permitting authority's and the facility's time.

One commenter (IV-D-41) opposed the FAP requirement because the requirement "represents a paperwork exercise that would result in little, if any, additional reduction of HAP's;" use of the proposed scheme for ranking of HAP's under Section 112(g) is "inappropriate for development of NESHAP;" EPA has the authority under Section 112(f) to impose additional controls on wood furniture manufacturing operations to address any "residual risk" that it identifies; and the proposal to adjust downward the Section 112(g) de minimis levels is "inappropriate and unfair."

One commenter (IV-D-07) objected to the categorization of styrene as a nonthreshold pollutant since there is no Agency precedent for regulating styrene as a carcinogen, and no clear and compelling scientific evidence for otherwise placing styrene in the nonthreshold category. This commenter suggested moving

styrene to the unrankable category in the rule or delaying any treatment of styrene under the wood furniture rule until EPA finalizes the ranking of styrene under Section 112(g).

One commenter (IV-D-29) stated their comments on the Section 112(g) rulemaking provided descriptive summaries and copies of toxicology studies to rank twenty glycol ethers (which include all glycol ethers used in wood finishing). The commenter noted that the composite values determined for each of these glycol ethers, including 2-methoxyethanol, was below 20. Therefore, the commenter stated EPA should delete any reference to any glycol ether as a VHAP of potential concern in the rule, and specifically the references in Tables 4 and 5.

One commenter (IV-D-33) stated that "the rule puts potentially severe restrictions on so-called 'VHAP's of Potential Concern,' including formaldehyde." The commenter maintained that formaldehyde is assigned an "inappropriately low 0.2 ton/yr de minimis level in the wood furniture NESHAP, based on a modified 2.0 ton/yr proposal in Section 112(g). The Section 112(g) formaldehyde proposal is based on a 1987 EPA risk assessment, but the commenter stated that since that time "there have been two EPA draft updates which reduce the indicated risk by a factor of 56," and numerous other studies regarding the "mechanism of formaldehyde carcinogenesis."

Three commenters (IV-D-07, IV-D-23, and IV-D-33) stated that EPA should not permanently tie any portion of this rule to the proposed Section 112(g) rule; instead, EPA should reference the corresponding provisions of the final Section 112(g) rule and provide that future changes will be picked up by the wood furniture rule, with sufficient time to prepare for compliance. The commenter maintained that the proposed Section 112(g) rule is subject to change and was not intended to have the force of law, but was merely EPA's suggestion of an approach to implementing one portion of the Clean Air Act. The commenter further stated that chemical categorizations and de minimis values are particularly subject to change, and if any aspect of Section 112(g) drew especially forceful comments, it was the

question of which chemicals belonged in which sublists and what de minimis values should be assigned.

One commenter (IV-D-07) stated that their request to classify styrene as "unrankable" in Section 112(g) and thus raise the de minimis value is directly relevant to the wood furniture rule. One commenter (IV-D-23) questioned whether, since several other Section 112(g) comments are directly relevant to the wood furniture rule, EPA has placed any Section 112(g) comments in the wood furniture docket and planned to consider those comments. The commenter said that if not, the Agency is "ignoring relevant comments and failing to fulfill statutory responsibilities."

One commenter (IV-D-23) stated that EPA has "impermissibly evaded" the notice and comment requirements by cross-referencing the proposed Section 112(g) rule. Further, the commenter noted that EPA only published the preamble in the Federal Register, which did not provide adequate warning that EPA intended to draw so heavily from the proposed Section 112(g) rule without making any adjustments to reflect changes in the final Section 112(g) rule.

Six commenters (IV-D-16, IV-D-18, IV-D-21, IV-D-35, IV-D-41, IV-D-42) provided comment on the use of 70-year exposure levels as opposed to 7-year exposure levels in assigning de minimis values to VHAP of potential concern. Three commenters (IV-D-16, IV-D-18, and IV-D-42) stated that the Section 112(g) de minimis levels are not based on 70-year exposure levels, but instead on 7-year exposure levels; therefore it appears that EPA's use of the Section 112(g) de minimis levels is in conflict with the 70 year exposure level specified in the proposed standard. Three commenters (IV-D-21, IV-D-35, and IV-D-41) stated that since the de minimis values in Section 112(g) were based on the fact that source category NESHAP would be developed within 7 years, and were, therefore, based on 7-year exposures, it seems appropriate to adjust any risk based values EPA uses in any standard to a 70-year exposure.

However, one commenter (IV-D-35) stated that the derivation of the de minimis values in Table 4 should be described, since

these values do not seem to be consistent with the Section 112(g) proposal. For example, some compounds have Section 112(g) de minimis levels, based on their carcinogenicity, but the levels listed in Table 4 are not equal to one tenth of the Section 112(g) de minimis, which is the formula suggested in the preamble. One commenter (IV-D-47) stated that the chosen de minimis values seem to be quite low and may pose a significant health risk to the community.

One commenter (IV-D-22) recommended that facilities be allowed small increases in their VHAP usage without having to meet any reporting requirement. The commenter suggested that any of the explanations in Section 63.803(l)(4) (i)-(iv) should be adequate. However, one commenter (IV-D-18) stated that sources should always be required to comply with a state's air toxic guideline and should not be able to avoid air toxic guideline review through explanations (i), (ii), or (iv). The commenter said that States should be given discretion to require approval based on compliance with that State's air toxic guideline.

Response: The EPA decided to adopt the formulation assessment plan that was developed by the regulatory negotiation Committee in response to State and environmental group concerns that the proposed emission limits were based on the total VHAP content of the coatings rather than on specific limits for individual pollutants. The States and environmental groups were concerned that this approach potentially could lead to an increase in risk if industry actually substituted more toxic HAP's for less toxic HAP's. To address these concerns, the regulatory negotiation Committee developed the formulation assessment plan. While the Agency agrees that the plan is somewhat unique, it was agreed to by all members of the regulatory negotiation Committee after extensive discussion, and the Agency believes that it is the most viable and least burdensome approach to addressing the State and environmental groups' concerns. If the de minimis values in Section 112(g) change in the final rule, the wood furniture rule will be revisited at that time.

Comment: Two commenters (IV-D-33 and IV-D-34) said that EPA should clearly state that the FAP only includes finishing materials. The commenters noted that Section 63.803(1)(1) clearly states that the plan shall identify "VHAP from the list presented in Table 4 that are being used in finishing operations." Therefore, emissions from finishes are covered under this section; the emissions from adhesives, substrates, and upholstered goods are not. The commenters further pointed out that distinction is carried forward in Subsections (2) and (3) which address the development of baseline levels and surveys of annual usage, but Subsection (4) also should include the reference to finishing to clarify what is being compared. One commenter (IV-D-34) suggested changing the name to "formulation assessment plan for finishing operations." However, one commenter (IV-D-43) stated the FAP should be applied to gluing and cleaning operations in addition to the finishing operations.

Response: The formulation assessment plan only applies to finishing operations and the Agency has modified subsection 4 to ensure that this is clear. The Agency agrees with commenter IV-D-34, and the name has been changed to formulation assessment plan for finishing operations. This should provide further clarification that the plan applies only to finishing operations.

Comment: One commenter (IV-D-03) requested that EPA extend the date for development of the Work Practice Implementation Plan to 120 days after the compliance date, and asserted that more than 60 days are needed to properly develop the Plan. One commenter (IV-D-37) stated that "EPA should clarify that it is the requirement for a Work Practices Implementation Plan, and not the contents of that plan, that will constitute the applicable requirement for purposes of the Title V Operating Permit Program." This clarification is necessary because permitted sources need the flexibility to revise their plans without waiting for a Title V operating permit revision.

Response: The Agency believes that 60 days after the compliance date is sufficient time for developing the work practice implementation plan. The work practice implementation

plan and the work practice standards are critical elements of this regulation, and the Agency believes that sources should have mechanisms in place for complying with these requirements by the compliance date. Existing sources will actually have a minimum of 2 years after the effective date of the standard to develop the plan.

As to the comment concerning revision to the plan, the Agency agrees that such revision should not require a revision of the facility's Title V operating permit. The Agency has clarified this in the final rule.

Comment: Two commenters (IV-D-20 and IV-D-23) questioned the need for an inspection and maintenance (I&M) plan for facilities in the wood furniture manufacturing industry. The commenters argued that fugitive emissions from equipment leaks are unusual in this industry since the usual sources of these emissions are not present in significant numbers in most of these facilities. One commenter (IV-D-20) stated that typical equipment leaks that might occur, such as from a malfunctioning spray gun, would result in shutdown of the operation until the problem was corrected. However, one commenter (IV-D-34) stated that "industry supports the work practice and inspection and maintenance provisions" and also "supports the Agency in its determination of the appropriate monitoring and repair frequency in the inspection and maintenance provisions of this regulation."

Response: The Agency appreciates the support for the inspection and maintenance program from commenter IV-D-34. While the Agency agrees with the comment that there are few sources of equipment leaks in this industry, they still believe that such a program is an important mechanism for ensuring that any leaks are identified and corrected promptly. The fact that there are few potential sources of equipment leaks should help minimize the time required to conduct inspections.

Comment: One commenter (IV-D-05) stated that EPA should add explicit exemptions to the rule to exclude operations that do not have an add-on control device from a startup, shutdown, and malfunction plan. The commenter said that statements in the

preamble indicate EPA's intent to exclude these operations but language in the rule is lacking.

Response: The Agency included in the proposed rule a table (Table 1) to identify which sections of the General Provisions, which are included in 40 CFR Part 63, Subpart A, are applicable to facilities subject to the wood furniture NESHAP. This table indicates that Section 63.6(e)(3) of the General Provisions, which addresses startup, shutdown, and malfunction plans, is applicable only to sources that have an add-on control device.

Comment: One commenter (IV-D-13) suggested simple control technologies that will reduce solvent emissions from washoff operations. The commenter stated that in some plants the washoff tank is covered with a thin layer of water which forms a barrier against solvent loss, due to mutual insolubility. The commenter further asserted that the tank can be covered when in use, as well as when not in use, since workers only need access to the tank when they are putting furniture in or taking it out.

Response: The regulatory negotiation Committee felt that it was sufficient to require the tank to be closed except when in use and the EPA has adopted this recommendation. In the rule, "in use" is limited to those occasions when an operator is filling or emptying the container. Therefore, during the time the pieces are being washed off, the tank will have to be closed as the commenter suggests.

Comment: Four commenters (IV-D-06, IV-D-20, IV-D-23, and IV-D-47) requested further definition of appropriate training sessions for new employees, experienced operators, and refresher classes, and clarification as to who is to give the training and requirements for trainers. One commenter (IV-D-06) suggested providing an agenda or estimated time requirement and also stated that appendices with example checklists for work practices would be informative. This commenter maintained that if EPA does not provide guidance to the industry, consultants will set arbitrary levels at the expense of small businesses. One commenter (IV-D-20) stated that the inclusion of the phrase "use of manufacturing equipment" in Section 63.803(b) seems to include

personnel not intended to be involved in the finishing, gluing, or cleanup activities, and requested clarification.

Response: The Agency is planning to develop a guidance manual after promulgation of this regulation to assist facilities in the implementation of this regulation. The Agency believes this is the most appropriate place to provide example checklists and information on developing an operator training program. The Agency believes that the operator training requirements in the rule should include only a brief outline of subjects to be addressed in the program. Because operations vary widely from one facility to another, the Agency was concerned that a more detailed agenda would require facilities to address processes and issues that were not applicable to their facilities.

Comment: Seven commenters (IV-D-12, IV-D-13, IV-D-20, IV-D-21, IV-D-22, IV-D-34, and IV-D-35) provided comments on the limitation of the chemical composition of cleaning and washoff solvents. One commenter (IV-D-22) stated that these requirements should be moved to the emission limitations section of the proposed rule because they are not work practice standards. Several commenters supported banning the use of carcinogenic compounds in solvents in quantities above OSHA MSDS reporting thresholds. Two commenters recommended listing the compounds currently in the type A and type B1/B2 categories in the final rule and listing the concentrations that are subject to MSDS reporting by OSHA. One commenter (IV-D-35) suggested combining Table 5 into one alphabetical list and including all de minimis values. However, several commenters stated that the proposed work practice standards should be revised so that they do not incorporate EPA's weight of evidence categories as a prerequisite for prohibiting the use of particular HAP's. One commenter (IV-D-20) stated a thorough scientific evaluation of all chemicals of potential concern should be conducted before banning any of them from use in this rule.

Two commenters (IV-D-12 and IV-D-13) stated that the EPA exceeded its statutory authority to regulate HAP emissions under Section 112 when it proposed work practice standards that

preclude a source from using cleaning solvents which contain chemicals that are known or probable human carcinogens in concentrations subject to reporting under certain Occupational Safety and Health Administration ("OSHA") regulations. One commenter (IV-D-12) cited portions of Sections 112(d)(1) and 112(d)(2) to support its position that these sections only authorize EPA to distinguish among categories, types, and sizes of sources, as well as the methods and techniques required to achieve emission reductions. According to this commenter, Section 112 does not give EPA authority to distinguish among listed HAP's within a source category based upon a particular HAP's classification as a potential human carcinogen. The commenter further stated that the language of Section 112(d) plainly limits EPA's authority to promulgating standards to reduce emissions of the hazardous air pollutants subject to this section.

The same commenter also contended that it is improper for EPA to use the A and B1/B2 categories of known or probable carcinogens contained in EPA's Guidelines for Carcinogen Risk management (the "Guidelines") as the basis for deciding which HAP's in cleaning and washoff solvents will be prohibited or otherwise controlled. The commenter maintained that the proposed standards are inconsistent with the Guidelines because in the preamble to the Guidelines, EPA expressly states that the Guidelines "do not imply that one kind of data or another is prerequisite for regulatory action to control, prohibit, or allow the use of a carcinogen." 51 FR 33993 (September 24, 1986). The same commenter further argued that even if EPA's use of the Guidelines was proper, the Guidelines provide no justification for differing between B and C carcinogens, such that C carcinogens are acceptable for use in furniture cleaning and washoff operations, but B carcinogens are not. Both commenters further asserted that EPA cannot promulgate a NESHAP that has the effect of prohibiting the use of certain HAP's before EPA has evaluated the health and environmental effects of the possible alternatives.

Response: The EPA disagrees with these commenters' views. First, EPA notes that Section 112(d)(2)--in language omitted by commenter IV-D-12 in its citation to that section--expressly gives EPA the authority to prohibit entirely emissions of any of the HAP's listed in Section 112(b):

Emissions standards promulgated under this subsection and applicable to new or existing sources of hazardous air pollutants shall require the maximum degree of reduction in emissions of the hazardous air pollutants subject to this section (including a prohibition on such emissions, where achievable) that the Administrator, taking into consideration the cost of achieving such emission reduction, and any nonair quality health and environmental impacts and energy requirements, determines is available ... through application of measures, processes, methods, systems or techniques including, but not limited to, measures which ... eliminate emissions of such pollutants through process changes, substitution of materials or other modifications

42 U.S.C. § 7412(d)(2) (emphasis added). This section makes clear that EPA not only has the authority to prohibit emissions of any HAP listed in Section 112(c) and may use any measures to accomplish this objective including requiring the substitution of materials, but that the Administrator also has the authority to establish MACT standards which prohibit HAP emissions whenever she determines, after considering the cost and other nonair quality health and environmental impacts, that the ban on emissions is achievable.

Moreover, nothing in Section 112 suggests that EPA does not have the authority to distinguish among HAP's based upon whether a particular HAP is a carcinogen. The only limitations placed on EPA by Section 112(d) are: (1) EPA must promulgate standards that reflect the maximum reduction in emissions of the HAP's being regulated taking into consideration the "cost of achieving such emission reduction, and any nonair quality health and environmental impacts[;]" and (2) the standards must be achievable. 42 U.S.C. § 7412(d)(2). The carcinogenicity of a compound is a proper health impact for the Administrator to consider. Accordingly, in this rulemaking and pursuant to this

statutory mandate, the Administrator determined that MACT for cleaning and washoff solvents required a prohibition on the use of type A and type B1/B2 carcinogens if they are present in concentrations that meet or exceed Material Safety and Data Sheet ("MSDS") limits stated in OSHA regulations. This determination was based in part on the Committee's recommendation that alternative, noncarcinogenic materials could be substituted for the banned materials.

The EPA also disagrees with the commenter's views that the proposed standards are inconsistent with the preamble to the Guidelines. The preamble states in part:

These Guidelines are to be used within the policy framework already provided by applicable EPA statutes and do not alter such policies. These Guidelines provide general directions for analyzing and organizing available data. They do not imply that one kind of data or another is prerequisite for regulatory action to control, prohibit, or allow the use of a carcinogen.

51 FR 33993 (September 24, 1986) (emphasis added). As both this statement and other portions of the preamble indicate, the Guidelines were written to provide a methodology for analyzing and organizing data that could be used to determine the proper category for a compound. The portion of the preamble highlighted above that was cited by the commenter does not address how the list of compounds is to be used once the compounds are classified, nor does it preclude EPA from using the list as a basis for controlling, prohibiting, or allowing the use of a carcinogen. It simply states that the Guidelines should not be read as implying the EPA believes certain data are prerequisite for regulatory action--i.e., the Guidelines are not specifying what kind of data is required for regulatory action; they simply provide directions for analyzing and organizing data.

The Guidelines divide compounds into the following five classifications:

Human Carcinogen (Group A)--appropriate where there is sufficient evidence from epidemiologic studies to support a causal relationship between exposure to the compound and cancer;

Probable Human Carcinogen (Group B)--appropriate when the weight of evidence of human carcinogenicity based on epidemiologic studies is limited (Group B1), or when the weight of the evidence of carcinogenicity based on animal studies is sufficient and there is limited, inadequate, no data, or no evidence of human carcinogenicity (Group B2);

Possible Human Carcinogen (Group C)--appropriate when there is limited evidence of carcinogenicity in animals and there is an absence of human data;

Not Classifiable as to Human Carcinogenicity (Group D)--generally used for compounds with inadequate human and animal evidence of carcinogenicity or for which no data are available; and

Evidence of Noncarcinogenicity for Humans (Group E)--based upon the available evidence to date, the agency shows no evidence for carcinogenicity in specified studies.

51. FR 34000 (September 24, 1986).

The EPA limited the ban to compounds that were known or probable human carcinogens and present in washoff solvents in concentrations that were required to be reported on an MSDS under OSHA regulations. This limitation eliminates emissions from known or probable human carcinogens by requiring a substitution of materials, without extending the ban to compounds that have been classified only as possible carcinogens. The EPA believes that this is a reasonable delineation and one that is supported by the available epidemiologic and animal data.

The EPA does agree, however, that the designations of "type A" and "type B1/B2" soon may become obsolete. Accordingly, the final rule includes a table listing all compounds that were on the list of A and B1/B2 carcinogens at the time of promulgation. This change retains EPA's intention to ban the use of these materials in cleaning and washoff solvents above the MSDS reporting limits without unnecessarily connecting the ban to a classification system that soon may change.

Comment: One commenter (IV-D-22) recommended that facilities be allowed to establish an alternative baseline period in their formulation assessment plan if difficulties in

establishing their historical VHAP emissions for past years are encountered, especially for the year 1994. The commenter stated that information regarding VHAP content of the materials used in the wood furniture manufacturing industry has been difficult to obtain.

Response: Facilities are already given a choice of 3 years as their baseline - 1994, 1995, or 1996. They should be able to obtain information on 1994 usage from their coating suppliers. Most, if not all, of the VHAP of potential concern must also be reported in the facility's annual SARA 313 report. Therefore, facilities should have this information available. Accordingly, the Agency believes that providing facilities the option of using the highest usage from 1 of 3 years is sufficient.

Comment: Two commenters (IV-D-05 and IV-D-21) stated that the work practice requirements are too burdensome. One commenter (IV-D-05) stated that they are "overly prescriptive and unsupported as floor requirements or as cost effective beyond floor requirements and should be simplified or eliminated." The commenter stated that the work practice requirements present only an unnecessary burdensome regulatory requirement that provides no additional environmental benefit. Both commenters maintained that market incentives exist to employ good manufacturing practices and pollution prevention practices. However, one commenter (IV-D-20) stated "the proposed work practice standards are reasonable and appropriate," with the exception of the requirement to maintain a record of pieces washed off.

Response: The work practice standards were developed by a work group during the regulatory negotiation process. The work group included furniture manufacturers and coating suppliers. Many of the work practice standards included in the rule were recommended by furniture manufacturers who already had implemented the practices and found that, in many cases, the practices reduced both emissions and operating costs. Accordingly, EPA adopted the work group's recommendation regarding work practice standards.

Comment: Three commenters (IV-D-16, IV-D-18, and IV-D-47) stated that the 15 percent increase allowance in the FAP should be deleted. The first commenter stated that instead of allowing sources to emit their maximum emissions and allowing 15 percent increases, the FAP should specify emission reductions and requirements for reformulation to avoid using VHAP's of potential concern. The commenter also stated that setting a baseline level of usage for VHAP's is in contradiction with the reduction of emissions. The second commenter stated that eliminating the 15 percent increase allowance would prevent facilities from setting an artificially high number as the baseline.

Response: The Agency believes that it is important to allow facilities some increase in their usage of VHAP of potential concern so that they may increase production. A facility may also need to make a change in the coatings they are using in order to meet customer demands. Therefore, the Agency decided to allow increases in usage up to 15 percent.

Comment: One commenter (IV-D-21) stated that it appears that the items in Sections 63.803 (h)(6), (i), (j), and (k) are pollution prevention practices that operators must follow and questioned how these practices would be tracked and enforced. The commenter stated that the "approach to incorporating pollution prevention into the rule is interesting," but it is not clear how to ensure compliance with these methods nor does there appear to be any quantification on the overall reduction in HAP emissions through the use of these methods.

Response: Several State representatives were included on the wood furniture regulatory negotiation Committee. One of the primary issues they were asked to address as the negotiations proceeded and the rule was developed was the issue of enforceability. In particular, there was some concern about the enforceability of Section 63.803(h)(6), which requires a demonstration of technical or economic infeasibility in order to use conventional air spray guns. Both the State and EPA representatives on the Committee believed that this provision is enforceable and that a determination of technical or economic

infeasibility can be made using a video or onsite demonstration, in combination with the guidelines presented in the rule. The other work practice standards were also agreed to by the Committee and adopted by EPA. Both the State representatives and the Agency believe these standards are enforceable, because it should be clear to a State or local inspector whether a facility is observing these work practice standards.

The Agency did develop an estimate of the emission reductions associated with the two major work practice standards--the operator training program and the limitation on the use of conventional air spray guns. While the Agency and other members of the regulatory negotiation Committee believe that there will also be emission reductions associated with the other work practice standards, the Agency did not believe they had enough information to quantify this reduction.

Comment: One commenter (IV-D-21) suggested that EPA clarify the application equipment requirement as follows: "Each owner or operator of an affected source shall use conventional spray guns to apply finishing materials only under any of the following circumstances." However, the commenter stated that rather than indirectly limiting the HAP emissions through a technology requirement, a better approach would be to directly limit the HAP content of the material used and ban the use of any HAP that is particularly bad for human health or the environment. The commenter pointed out that the requirement to use a different application technology is not being uniformly applied to all industries applying coatings. The preamble states that this NESHAP was developed after EPA developed a metal furniture new source performance standard (NSPS) but the metal furniture NSPS does not require the source to use a specified spraying technology. The commenter stated that the limitation in this NESHAP seems to be moving well beyond what a similar industry is required to implement. According to the commenter, a better policy would encourage pollution prevention techniques through incentives, rather than mandates.

One commenter (IV-D-43) stated that because an accurate and reliable test method for determining transfer efficiencies of coating application equipment does not yet exist, the commenter supported the approach of specifying particular types of application equipment. The commenter believed, however, EPA should allow State and local agencies flexibility in approving alternative coating equipment.

Response: The Agency agrees that the change suggested by commenter IV-D-21 clarifies the Agency's intentions concerning the limitation on application equipment, and made this change in the final rule.

The Agency, as well as the State and environmental group representatives on the regulatory negotiation Committee, strongly believed that a limitation on the use of conventional air spray guns was needed. While data concerning the transfer efficiency of different types of application equipment show that there are many factors affecting transfer efficiency, most studies show that conventional air spray guns are less efficient than other types of application equipment. Many States already have regulations that limit the use of this equipment, and the majority of the national standards now being developed by the Agency for surface coatings industries also limit the use of conventional air spray equipment.

The Agency appreciates the support of commenter IV-D-43 for limiting the use of conventional air spray equipment. Because the rule only mandates that conventional air spray equipment cannot be used, the Agency believes that the rule already allows State and local agencies flexibility in approving alternative equipment. As the rule is written, a facility may use any other type of application equipment.

Comment: Two commenters (IV-D-32 and IV-D-37) stated that the restrictions on the use of spray guns should exclude adhesives since they are not "finishing materials." One commenter (IV-D-32) said that it is "well established that the spray application of solvent-borne adhesives has a very high transfer efficiency because of the rheology of these products,"

and suggested that restricting the use of spray gun application of adhesives would be "counter-productive."

Response: The restriction on air spray guns does not apply to adhesives. The language of the regulation indicates that the restriction only applies to finishing materials. Adhesives are not considered finishing materials.

2.6 REPORTING AND RECORDKEEPING REQUIREMENTS

Comment: One commenter (IV-D-03) stated that reporting and certification twice each year is too burdensome. The commenter maintained that the various reports and annual summaries that EPA already requires industry to submit stretch resources to their maximum. The commenter suggested that a system of providing reporting and certification twice during the first year and annually thereafter unless the source fell out of compliance, would meet the needs of the Agency and be less burdensome on the industry.

Another commenter (IV-D-08) also said that certification of compliance should be required on an annual, rather than semiannual, basis because many stationary sources of NO_x and VOC in nonattainment areas will submit emissions statements annually in accordance with Clean Air Act Section 182(a)(2)(C)(3)(B).

One commenter (IV-D-43) stated the rule should provide flexibility to States and local agencies to require alternative reporting frequencies that are equally effective in demonstrating compliance.

One commenter (IV-D-37) stated that the rule should not require more frequent compliance certifications than the Clean Air Act mandates. The proposed rule requires operators and owners to provide semiannual compliance certifications, but Section 503(b)(2) of the Act specifies that EPA must require periodic certifications at least annually. Therefore, the proposed rule requires more frequent certifications than Title V requires, but the Agency presents no rationale to justify this increased burden. This commenter suggested annual compliance certifications.

Response: The majority of the facilities in this industry are expected to meet the emission limits through the use of compliant coatings. Compliance with the emission limits is demonstrated through recordkeeping. Because recordkeeping is the primary method of demonstrating compliance with the regulation, the Agency believes that facilities should have to submit compliance status reports at least twice a year. Moreover, Section 504(a) of the Act requires Title V permittees to submit the results of any conditions that are necessary to demonstrate compliance on at least a semi-annual basis. While the Agency recognizes the concern expressed by commenter IV-D-03 that the Agency already requires a number of other annual reports, the Agency believes that this concern will be alleviated somewhat by the Title V permit program, which will allow facilities to include most of the information in one report. The Agency encourages States to allow facilities the flexibility of including all the information they need from the facility in these semiannual reports so that additional reports will not be needed.

Comment: Three commenters (IV-D-13, IV-D-20, and IV-D-21) stated that the proposed requirement to maintain records of pieces washed off is not necessary. One commenter (IV-D-13) stated that a facility does not typically wash off furniture unless it is required, and an explanation for washing off a particular piece seems an imposition on day-to-day operations. According to this commenter, the only possible value for recording the number of pieces washed off is if the facility would need to calculate a per piece use of washoff solvent, a calculation that would provide no value to the facility in complying with the proposed standards. One commenter (IV-D-21) stated that the air permitting authorities should not force companies to track information for which the authority has no use. One commenter (IV-D-20) proposed that facilities track their solvent usage instead.

Response: This work practice standard was suggested by a wood furniture manufacturer who found that when their facility

implemented this practice, they were able to substantially reduce the number of pieces that were washed off. By tracking the number and types of pieces that are washed off, a facility will be able to identify operators that have a relatively high number of pieces that need to be washed off, which may be an indicator that the operator needs additional training. The facility also may identify particular pieces that need to be washed off more than others because they are particularly difficult to finish correctly. The facility then may work with the operators to develop better application methods for those particular pieces. Finally, the facility found that some pieces did not really need to be washed off. In some cases, repairs could be made by sanding the piece, or part of the piece, and refinishing it.

Comment: Two commenters (IV-D-18 and IV-D-22) suggested that records required to document an area source's commitment to the 250/3,000 gallon usage rate should be maintained for 5 years, stating that this requirement would be consistent with Title V requirements. Two commenters (IV-D-38 and IV-D-43) stated sources should be required to either keep all records for only 2 years. Another commenter (IV-D-16), however, stated that area sources should be required to keep records documenting the owner's commitment to the usage cap for the life of the source, or submit an annual report containing the usage rates during each year.

Response: The Agency agrees that purchase records or usage records demonstrating a facility's exempt status should be maintained for 5 years. As commenters IV-D-18 and IV-D-22 suggest, this is consistent with Title V requirements and with the requirements of this rule.

Comment: One commenter (IV-D-38) stated that Mojave Desert AQMD's rules require a source to report all upsets or breakdowns that cause an emission exceedance or violate any rule within 1 hour, and all continuous monitoring system emission exceedances within 72 hours.

Response: Due to the nature of this industry, the Agency does not expect there to be many facilities that exceed the

emission limits due to an upset or breakdown. This should only occur if the facility is using an add-on control device to reduce emissions. Facilities using an add-on control device must prepare a startup, shutdown, and malfunction plan consistent with the General Provision requirements specified in Section 63.803(e)(3). Section 63.10(d)(5)(i) of the General Provisions states that as long as a facility's actions during such an upset or breakdown are consistent with the actions presented in their startup, shutdown, and malfunction plan, the facility is only required to submit a report of the upset or breakdown semiannually. If, however, a facility's actions are not consistent with the procedures established in the startup, shutdown, and malfunction plan, the owner or operator must report the action taken for that event within 2 working days after commencing actions inconsistent with the plan followed by a letter within 7 working days after the end of the event. The Agency believes that the guidance provided in the General Provisions is sufficient for this rule.

Comment: One commenter (IV-D-06) stated that details such as reporting and process requirements should be left to the State to describe in specific operating permit requirements.

Response: The States have the authority to require additional reporting if they believe it is necessary. The regulation prescribes the minimum reporting requirements that the Agency believes are necessary to ensure sources are complying with the rule.

Comment: One commenter (IV-D-06) stated that the rolling 12-month period for coating usage may create recordkeeping concerns and that monthly limits and records would be easier to maintain. The commenter said that the EPA's draft Profile for Furnitures and Fixtures states that 88 percent of the companies in SIC code 25 have less than 100 employees. These smaller businesses most likely do not have adequate personnel to develop and maintain numerous records and documents.

Response: The Agency agrees that the rolling 12-month period does require additional recordkeeping, but it also

provides more flexibility because it allows facilities that have an increased demand in production for a month or two to exceed the 250 gallon per month limit. It is up to the facility to determine if this flexibility is worth the additional recordkeeping burden. The rule allows facilities the option of meeting one limit or the other.

Comment: Two commenters (IV-D-08 and IV-D-21) stated that the level of reporting required to document area source status should be limited to a semiannual or annual certification of usage, based on certified monthly usage records. The commenters maintained that this is an adequate demonstration of area source status. One commenter (IV-D-34) stated that "certain readily available and understandable records, such as the CPDS, in conjunction with purchase and use records for coatings, obviously suggest themselves as records which could appropriately and verifiable document compliance with a restriction of PTE."

Response: Maintaining purchase or usage records that demonstrate that the facility's coating usage is less than the 250/3,000 gallon limit is sufficient to exempt the facility from the regulation if the exemption is based on the material usage limitation. If the facility chooses to establish that they are exempt from the regulation by demonstrating that they use materials containing no more than 5/12.5 tons of HAP, then the facility will have to maintain purchase or usage records and certified product data sheets for their coatings and thinners. These records are to be maintained at the facility and made available upon the request of the Administrator.

Comment: One commenter (IV-D-08) stated that the recordkeeping requirements in Section 63.806(d) of the proposed rule are unreasonably burdensome and practically infeasible for military installations. The commenter stated that the records required (solvent and coating additions to the continuous coating reservoir, viscosity measurements, and data establishing that viscosity is an appropriate parameter for demonstrating compliance) are targeted at conventional wood furniture manufacturing operations. The commenter also pointed out that

the average user of regulated materials at a military base wood hobby shop would be unable to perform the complex calculations required.

The commenter suggested that sources using compliant materials should be able to demonstrate compliance by maintaining certified product data sheets for each regulated material and records of monthly usage, and that all other recordkeeping requirements should be eliminated.

Response: The records referred to by the commenter, those specified in Section 63.806(d), are only required for sources that are using continuous coaters and choose to use this option for demonstrating compliance. Facilities that do not have continuous coaters are not required to maintain these records. Facilities that do have continuous coaters are also given another option to comply with the regulation that will not require this additional recordkeeping. If the records for a coating used in a continuous coater demonstrate that the coating is compliant and a sample of the coating demonstrates that the coating is compliant, then the facility only has to maintain certified product data sheets for the coating and records of the as applied VHAP content of the coating.

Comment: One commenter (IV-D-23) stated that EPA should not require sources to keep a copy of reports they have submitted to EPA because this is an unreasonable recordkeeping burden. The commenter stated that the only reason EPA would require anyone to keep these reports would be as "insurance" in case EPA loses their copy. The commenter stated that if a regulated source happened to misplace its copy of a properly submitted report, no harm would be done to the environment, but EPA would be free to assess a penalty of up to \$25,000 per violation, per day, which is unreasonable.

Response: Section 63.10(b) of the General Provisions requires facilities to maintain all records, including all reports and notifications, for at least 5 years.

Comment: One commenter (IV-D-40) stated that the final rule should provide de minimis levels below which the reporting of

trace amounts of HAP's in non-HAP materials would not be required. Like virtually all solvents, the solvents used in wood furniture manufacturing operations contain trace amounts of other substances, including some substances that are listed as HAP's. The commenter stated that because the levels of these impurities are typically very low and present no appreciable risk to human health or the environment, other regulatory programs that require the reporting of regulated substances include de minimis thresholds below which reporting is not required. The commenter stated that the final rule should clarify that CPDS's do not need to include information about any HAP that comprises less than 0.1 percent, for defined carcinogens, or 1.0 percent, for other HAP's, of a solvent used in a finishing material. Otherwise, the rule will be inconsistent with other reporting requirements and impose substantial costs for analyzing finishing materials for very low levels of impurities that have no significance from a health or environmental perspective.

The commenter stated that unless the final rule establishes de minimis levels, it will also impose an unnecessary burden on distributors and facility operators. Under the proposed approach, they would be forced to keep track of small variations in different batches of chemicals and finishing materials as they proceed through the formulation and finishing process. The commenter maintained that the additional cost to distributors, facility operators, and producers simply cannot be justified in light of the trivial amounts of HAP's that are found in non-HAP finishing materials.

Response: The definition of certified product data sheet (CPDS) has been changed in the final rule to clarify that only HAP present at concentrations greater than or equal to 1.0 percent, 0.1 percent for carcinogens, must be reported on the CPDS.

2.7 MONITORING REQUIREMENTS

Comment: One commenter (IV-D-03) stated that the monitoring requirements are too burdensome. The commenter said the monitoring requirements in Section 63.804 satisfy the

requirements of enhanced monitoring, but do not target the highest emitting points. The commenter stated that requiring monitoring for all emitting points is overly burdensome. However, one commenter (IV-D-34) stated that "industry supports EPA's approach in this NESHAP for meeting the enhanced monitoring and compliance certifications requirements of § 114 and believes that the monitoring requirements contained in this regulation are appropriate to satisfy those monitoring and certification requirements."

Response: The Agency appreciates the support from commenter IV-D-34 concerning the monitoring requirements included in the regulation. The Agency believes that the monitoring requirements included in this regulation allow sufficient mechanisms for demonstrating the compliance status of a source without imposing too great a burden on the source. It is not practical to establish monitoring requirements based on the magnitude of emissions from a particular source for this industry, because the largest source of emissions will vary by facility. At some facilities, gluing operations may be the largest source of emissions while at other facilities finishing or cleaning operations may be the largest source of emissions.

Comment: One commenter (IV-D-21) stated that monthly pressure drop readings are not adequate. A pressure drop reading is not a difficult measurement to perform, and having the source read it only once per month may allow an entire month of noncompliance before a problem is discovered. The commenter stated the Minnesota Pollution Control Agency requires daily pressure drop recording in many permits. The commenter also questioned why the requirement for gluing operations controlled with a fluidized bed catalytic oxidizer is different than the requirement for control of finishing operations with the same device. Finishing operations must measure the pressure drop monthly and maintain a constant pressure drop. The commenter requested guidance on what is "constant." For gluing operations, the facility is required to measure the pressure drop monthly, but there are no specific provisions for how this parameter shall

be maintained. The only provision addressing this issue states that the facility cannot operate at a daily average value greater or less than the operating parameter value. The rule further states that daily average values shall be calculated for all parameters monitored during the operating day. The commenter questioned whether this means a daily average pressure drop will be calculated on the day the pressure drop is measured? If the measurement is only taken once, what is being averaged? The commenter requested more specific language on these items.

Response: The Agency agrees that the language concerning the pressure drop reading needs to be clarified and has done so in the final rule. There is currently only one facility in the industry using a fluidized bed catalytic incinerator to reduce emissions from finishing operations. None are currently being used to reduce emissions from gluing operations. The monitoring parameters for this facility were developed after several discussions with the facility concerning their current monitoring practices. Because of the limited use of this type of add-on control device in this industry, the Agency believes that the monitoring requirements for this type of add-on control are sufficient for this regulation. However, as the preamble states, the Agency does not endorse the use of these monitoring requirements for other regulations.

2.8 FORMAT OF THE STANDARD

Comment: Two commenters (IV-D-04 and IV-D-09) stated they support the rule as proposed because it identifies a broad range of control devices as alternatives to low-VOC coatings, and they would oppose a standard that required reformulation only. One commenter stated that allowing manufacturers flexibility in complying with the rule ensures that the most practical and cost effective options are available to the manufacturers when they select a compliance strategy and agreed with the identification of catalytic oxidation as a viable control strategy. The other commenter stated that a standard that required reformulation only would result in higher compliance costs than a flexible rule allowing capture and control. The commenter pointed out that

thermal and catalytic oxidizers have been used to control emissions from a number of furniture manufacturing operations, notably kitchen cabinet manufacture, and typically have obtained a 98 percent level of control or greater, easily meeting an emission limit of 1 lb HAP/lb applied solids.

Response: The Agency appreciates the comments in support of the format of the standard in this rule. The final rule provides industry even more flexibility by allowing sources to use a combination of an averaging approach and an add-on control device to meet the emission limits for finishing materials.

Comment: Five commenters (IV-D-11, IV-D-20, IV-D-22, IV-D-43 and IV-D-47) stated that the lb HAP/lb solids emission limit format is inconsistent with other Federal regulations and EPA should not propose a different emission limit format for a single industry. The commenters favored retaining a lb HAP/gallon format for the standard. One commenter (IV-D-11) stated that the MACT standards for all sealers, topcoats, basecoats, enamels, adhesives, and high solids stains should be expressed in g/L (lb/gal) less water and exempt solvents, and for low solid stains, washcoats, and toners, the format should be g/L (lb/gal) of material including water and exempt solvents. This commenter maintained that a new format will make it more difficult to enforce the limit, more difficult to determine equivalency of existing regulations, and may lead to confusion for all affected parties. The commenter also pointed out that for the same mass VHAP/mass solids ratio, the VHAP content in g/L less water may vary significantly; therefore, a coating complying with the MACT limit may violate the VOC limit, and vice versa. The commenter stated that the proposed HAP limit for stains penalizes low-solid waterborne materials containing small amounts of VHAP's and that the proposed limit for low solid stains is stricter than the proposed standards for thinners.

The commenters realized that the justification for the new format is that the old format does not credit sources that switch to higher solids, lower emitting finishes. However, one commenter pointed out that assuming the dry film thickness

remains the same, the facility will use less high solids coatings to process the same amount of furniture and therefore, VOC emissions will be lower. The commenters pointed out that a new format would result in major sources having to comply with two sets of limits, expressed in two different formats: VOC limits in g/L less water and VHAP limits in kg/kg solids.

Response: The traditional measurement method for coatings of g/L less water is not appropriate for HAP's because there is not always a direct relationship between the HAP content of a coating and the solids content of a coating. A facility using a 40 percent solids coating with a HAP content of 359 g/L (3 lb/gal) will emit less HAP's than a facility using a 20 percent solids coating with a HAP content of 240 g/L (2 lb/gal). The Agency developed a Control Techniques Guideline (CTG) to address VOC emissions from this industry concurrently with the NESHAP. In order to avoid facilities having to track limits expressed in two formats, the emission limits for coatings in the CTG are based on kg VOC/kg solids (lb VOC/lb solids).

2.9 COMPLIANCE PROVISIONS AND DATES

Comment: One commenter (IV-D-23) stated that it is unclear what "commit to using" means, in regard to the 250 gallon limit in Section 63.800(b)(1). The commenter questioned whether compliance consisted of making a verbal or written commitment, even if actual usage exceeded 250 gallons per month. The commenter questioned if the commitment was to be in the form of a report, and if so, when that report was due, or if the provision simply meant facilities were exempt if they actually use less than 250 gallons per month. The commenter suggested that EPA eliminate any reference to "commitment."

Response: The Agency agrees that the reference "commit to using" is unclear. In the final rule, facilities are exempt from the regulation if they use no more than 250 gallons per month or 3,000 gallons per year and maintain purchase or usage records that demonstrate their usage is no more than 250 gallons per month or 3,000 gallons per year. Facilities also must maintain the records for 5 years. However, the facility does not have to

report that their usage is below the required levels; they only have to maintain records that must be made available to the Administrator upon request.

Comment: Three commenters (IV-D-22, IV-D-34, and IV-D-40) agreed that the flexibility that averaging provisions afford is warranted, particularly for the larger facilities that have the resources to maintain the necessary records. One commenter (IV-D-22) stated that while averaging provisions increase the difficulty of determining compliance, they also provide increased flexibility for facilities. Certain stains and specialty finishes may require difficult reformulations to meet the limits, but emissions averaging provides a mechanism for the continued use of these materials, provided that other "over-complying" coatings are also used.

Two commenters (IV-D-34 and IV-D-40) supported the averaging provisions, but noted that the rule does not appear to permit full averaging of controlled and uncontrolled emissions (i.e., between those emissions from a source which is controlled by a pollution abatement device and those which are not so controlled.) One commenter (IV-D-34) pointed out that the framework document outlining the regulatory negotiation committee's agreement states that "a source should be able to comply with the allowable emissions level set forth above by not exceeding 1.0 pound of VHAP's per pound of solids for the weighted average of all the finishing steps applied in the facility." Therefore, industry believes the regulation should "make clear that emissions from a source which are controlled by a pollution abatement device can be averaged with those which are not so controlled, whether compliant or noncompliant."

However, two commenters (IV-D-35 and IV-D-41) recommended that EPA delete the averaging option for demonstrating compliance for finishing operations. One commenter (IV-D-35) stated that "to allow a source to average HAP emissions without regard for varying toxicity is not sufficiently protective of public health, especially since it appears that some of the wood furniture VHAP's may also be considered VHAP's of potential concern under

Section 112(g)." Both commenters stated that although EPA may believe an averaging approach is simpler and cost effective for industry, past experience has proven this to be the opposite for States, due to the difficulty in enforcing the provisions and the significant reporting and recordkeeping requirements.

One commenter (IV-D-41) stated that EPA needs to allow States to adopt the final regulation without the emissions averaging option. The commenter said that their State agency may seek the authority to do so under Section 112(l) if EPA does not provide for adoption by States without emissions averaging, but it is difficult for them to go beyond the Federal program without specific State authority.

The commenter recommended that EPA not allow emissions averaging in future NESHAP since the provisions do not allow for the relative toxicity of the HAP's being emitted and there are no limitations on usage. The commenter supported the requirement of the formulation assessment plan, but stated that "this measure will not prevent the potential for increased risks by use of emissions averaging under the proposed rule."

One commenter (IV-D-43) stated that sources who elect to use averaging should be required to demonstrate, to the satisfaction of the implementing agency, that compliance through averaging will not result in greater hazard or risk than compliance without averaging. The commenter also stated that if sources choose to use averaging, emissions should be reduced by 10 percent from what the emissions would have been if only complying coatings were used. The commenter also suggested that EPA allow the implementing agency to limit the number of emission points or coatings that may be used for averaging to decrease the burden and cost of overseeing and enforcing the rule. The commenter also said that State and local agencies should be granted the discretion to preclude sources from using emission averaging to comply with the NESHAP without having to make a Section 112(l) rule approval request. According to this commenter, giving States discretion in the NESHAP will reduce paperwork burdens on

States, expedite delegation of the rule to the State, and remove a potential source of uncertainty for affected sources.

One commenter (IV-D-11) stated that the averaging option provided in the proposed rule is inconsistent with the one provided in the proposed NESHAP for aerospace manufacturing and reworking facilities. The commenter pointed out that the aerospace NESHAP only allows averaging within the same coating category. The commenter also stated that the averaging option allowed in the proposed wood furniture NESHAP contradicts the EPA emission trading policy (51 FR 43815, 1986) for ozone precursors in ozone nonattainment areas. That document requires that sources using an averaging approach provide a 20 percent emission reduction below the baseline emissions, defined as the least of actual or allowable emissions. The commenter said that if this requirement is still in place for criteria pollutants it should also be applicable to toxic air contaminants, but if EPA has revised its policy toward all air pollutants it should be clarified in all NESHAP's and revisions to EPA's emission trading policy.

Response: The Agency appreciates the comments (IV-D-22, IV-D-34, and IV-D-40) supporting the inclusion of averaging in the rule. The Agency agrees that facilities should be able to average among controlled and uncontrolled emissions when using an add-on control device and has included this compliance option in the final rule.

While the Agency appreciates the comment from commenter IV-D-35 concerning averaging HAP emissions without regard to the toxicity of the different HAP's, the Agency does not believe this is a significant issue with this industry. During the regulatory negotiation, the Committee requested that the Agency's Pollutant Assessment Branch (PAB) evaluate the toxicity of the primary HAP's used by this industry to determine if there were significant differences in toxicity. This evaluation concluded that significant differences did not exist between the major HAP's used by the industry. The HAP's that are of greater concern are used only in small quantities by the industry, not as

primary solvents in coatings. The EPA believes that the formulation assessment plan effectively addresses the issue of the more toxic HAP's used by the industry, particularly since these HAP's are typically used in relatively small quantities. In addition, the Agency does not believe the toxicity of the different HAP's is any more of an issue for sources using an averaging approach than it is for sources using a compliant coatings approach. The compliant coatings approach limits the total VHAP content of a coating; it does not include individual limits for each HAP. The only way to address the commenter's concern would be to limit the toluene content of each coating, the xylene content of each coating, the methanol content of each coating, etc. Because as many as 25 of the 189 HAP's may be used in wood furniture coatings, such an approach is impractical for this industry.

Two commenters indicated that sources using an averaging approach should reduce their emissions by either 10 percent (IV-D-43) or 20 percent (IV-D-11) more than sources using a compliant coatings approach. The Agency is aware that the Hazardous Organic NESHAP (HON) requires an additional 10 percent reduction in some cases and that EPA's emission trading policy requires sources using an averaging approach provide a 20 percent reduction below the baseline emissions. However, the Agency does not believe that these provisions are applicable for this regulation. In the HON, credits generated using pollution prevention measures do not have to be discounted. Sources using an averaging approach to meet the requirements of the wood furniture NESHAP will be using low-HAP coatings, which is considered a pollution prevention measure. Therefore, under the HON approach the 10 percent reduction would not be applicable. In addition, the emissions trading policy is not applicable to standards promulgated under Section 112. The additional 20 percent reduction is required for sources using an averaging approach to meet the wood furniture CTG emission limits, but the Agency does not believe that it is appropriate for the MACT standard. In addition, one of the reasons for both the 10 and

20 percent reduction requirements in the HON and the emissions trading policy is that sources typically realize a cost savings when using an averaging approach, and the feeling is that the environment should benefit from the source's cost savings. However, the Agency does not believe this is the case with the wood furniture industry. There is no real cost savings associated with averaging in the wood furniture industry. Because of the substantial additional recordkeeping requirements, averaging is likely to be less cost effective than using compliant coatings. Sources are expected to use an averaging approach because they cannot meet product performance specifications using compliant coatings. For these reasons, the Agency does not believe that sources using an averaging approach should be required to achieve an emission reduction beyond that required for sources using a compliant coatings approach to comply with the regulation.

Two commenters requested that EPA include language in the rule that would allow them to adopt the regulation without the averaging options. These commenters indicated that unless language was included in the rule, they would have to seek authority to do so under Section 112(1). The agreement to allow averaging in this rule was a significant part of the regulatory negotiation. The MACT floor was based on the average VHAP content for all coatings used at each source. Because averaging was the basis for the MACT floor, the Agency does not believe that it is appropriate to include language that would allow States the option of not including the averaging option. The Agency appreciates the concerns that averaging imposes a greater recordkeeping burden on the States, but the Agency does not believe that is the case for this regulation. Each facility using an averaging approach must demonstrate compliance by using a straightforward calculation that is included in the rule. They include the results of this monthly calculation in their semiannual reports. The source must maintain records that document the data used in the averaging calculation are correct. If the value resulting from the calculation is greater than 1.0

(0.8 for new sources), the source is out of compliance. The State does not have to perform any calculations. As with the compliant coatings approach, the State or local agency may take a sample of any coating to determine if the measured VHAP content of the coating is the same as the VHAP content reported by the source.

The Agency does not intend to preclude State or local agencies from excluding the averaging option in their regulations. However, because of the importance of the averaging provisions to the industry and because the Agency does not believe the provisions impose any additional burden on the State or local agencies, the Agency has decided not to include language in the rule that will allow State or local agencies to exclude the averaging provisions automatically. If a State or local agency chooses to exclude the averaging option, they must seek authority to do so under Section 112(1).

Comment: One commenter (IV-D-21) stated that there appears to be a problem with Equation 1 in § 63.804(a)(1). The values for C_{cn} are defined as being "as applied," which indicates that it must include any solvents used to thin the material. However, it appears that the later S_n and W_n terms also account for solvent used for thinning. The commenter suggested that EPA make it clear that the values for C_{cn} for this equation are "as purchased."

Response: The Agency appreciates the commenter pointing out this error. The final rule reflects that the values for C_{cn} in the equation represent the as purchased value.

Comment: One commenter (IV-D-21) said that Section 63.804(a)(3) is not the appropriate place to state that R should be calculated using the performance test results. The commenter maintained that the value for R would only be calculated using the performance test results when checking to ensure that the facility was in compliance with the required R value. The value of R , for purposes of this item, is calculated by substituting one for E_{ac} , the known values for E_{bc} , and solving for R . According to the commenter, the rule tries to

combine two different actions in one section--determining the required R and showing compliance with this required value-- and the result is very confusing. The commenter also stated that the equation in Section 63.804(c)(2) should be $R = ((G_{bc} - G_{ac}) / G_{bc}) (100)$.

Response: The Agency agrees with the comments concerning the calculation of "R" for both finishing and gluing operations. The final rule reflects these changes.

Comment: One commenter (IV-D-21) said that EPA should clearly state that for initial compliance, when performing the averaging calculation for the first month, data from before the compliance date should be used so that the value reflects an entire month's worth of information.

Response: The Agency agrees with the commenter. The EPA has included in the final rule language that specifically requires that the first month's averaging calculation include an entire month's worth of data. Because an entire month's data must be used, the facility will have to include data from before the compliance dates when performing the averaging calculation.

Comment: One commenter (IV-D-21) noted that in Section 63.805(c) there is a reference that Section 63.805(b) requires a compliance demonstration. The commenter stated that although Section 63.805(b) does discuss demonstrating compliance, it does not require a compliance demonstration. The commenter said that if the intention of Section 63.805(b) is to require compliance demonstrations, it needs to be reworded to clarify this; otherwise, the reference appears to be incorrect.

Response: The commenter is correct. The EPA changed the reference to Section 63.804(f)(4).

Comment: One commenter (IV-D-22) stated that it does not appear that the alternative compliance requirements for sources that use a control device ensure that emissions will be reduced to levels that are equivalent to the use of compliant coatings. The commenter pointed out that under Section 63.803(h)(ii)(4), conventional spray guns may be used to apply finishing materials if emissions are directed to a control device, but the

calculations used to establish the required control device efficiency do not take into account the larger quantities of finishing materials that are used with air-atomized guns. The commenter suggested that EPA could correct the problem by incorporating in the final rule an additional term in the equivalency equation, establishing a minimum abatement device efficiency in the rule that would clearly be equivalent, or by eliminating the exemption.

Response: The commenter does have a point; however, there are many factors influencing the transfer efficiency of spray equipment. The Agency does not believe that selecting an arbitrary control device efficiency would be appropriate, nor is eliminating the exemption a feasible option, because some low-VOC coatings can only be applied using conventional air spray guns.

Comment: One commenter (IV-D-21) discussed setting minimum combustion temperatures for thermal and catalytic oxidizers in the rule. The commenter stated that in Minnesota, minimum temperatures are set in permits, but sources are required to operate at the temperature at which they demonstrated compliance (which are generally higher) rather than the minimum temperatures established in their permits.

Response: The State or local agency has the option of setting minimum combustion temperatures in a facility's permit. The language in the rule does not preclude a State from including these temperatures in a facility's permit.

Comment: One commenter (IV-D-16) stated that the compliance date for all major sources should be 3 years after the promulgation date and the compliance date for area sources should be one year after promulgation. The commenter suggested that this will eliminate confusion regarding which sources emit greater or less than 50 tons per year and will allow larger sources to design and construct control systems if necessary. One commenter (IV-D-37) requested that EPA provide the statutory three year compliance deadline for all sources, to give sources the maximum amount of latitude available under the Clean Air Act.

Response: The regulatory negotiation Committee discussed requiring all facilities to comply within 2 years, because most facilities are expected to comply through the use of reformulated coatings rather than adding abatement devices. However, the coating suppliers to the industry were concerned that they could not supply all facilities with reformulated coatings that met their performance demands within the two year time frame. Therefore, the Committee recommended that EPA adopt a tiered approach to allow the coating suppliers to work with their largest customers first, and then meet the needs of their smaller customers within the following year. The EPA retained this recommendation in the final rule.

Concerning the comment that the compliance date for area sources be 1 year after promulgation, the only requirement for area sources is documentation of their area source status. That is, they must keep records that document that their coating usage is less than 250 gallons per month or 3,000 gallons per year.

Comment: One commenter (IV-D-47) stated that it is unclear whether the reporting threshold for yearly emissions is based on potential to emit or actual emissions. If it is based on actual emissions and since the compliance date for a source with emissions of 50 tons per year or more is November 21, 1997, the source would not have the yearly emissions for 1997 by November of the same year.

Response: The compliance dates are based on whether or not a source actually emits 50 tons per year of HAP. The language of the rule has been modified to state that the compliance date is determined by a source's actual emissions for the year 1996.

Comment: Two commenters (IV-D-22 and IV-D-38) recommended that the time frame for initial notification be extended to no sooner than 270 days after the effective date from the final rule's effective date. One commenter (IV-D-38) stated the period should be 270 or 365 days to allow for the local agency to prepare an equivalent rule and submit the needed documents to EPA. This commenter also suggested that the time period should be the same for new or modified MACT or NESHAP and that all

NESHAP should contain an example initial notification form. One commenter (IV-D-22) also stated that it would be helpful if EPA would establish an automatic extension of this deadline where the State or local authority is seeking rule equivalency under 40 CFR Subpart E. However, two commenters (IV-D-41 and IV-D-43) requested that the time frame be extended to only 180 days.

Response: The time frame for initial notification has been extended to 270 days in the final rule. The Agency is planning to prepare a guidance document for this industry that will include an initial notification form.

Comment: One commenter (IV-D-06) stated that the regulations need to provide latitude for case by case operating restrictions for minor sources. The commenter stated that although the language may provide the mechanism, details such as reporting and process requirements should be left to the State to describe in specific operating permit requirements.

Response: The Agency has provided three options for facilities to use to demonstrate that they are area sources for the purposes of this rule and should be exempt from the regulation. Each of these options has specific recordkeeping and reporting requirements. If a source does not qualify for an exemption under any of these options, they can either work with their State or local agency to include additional mechanisms for qualifying as a minor source in their operating permit or obtain a Federally-enforceable limit on their potential to emit.

Comment: One commenter (IV-D-21) stated that there is no language which clearly explains what constitutes the change from area to major source in the discussion of compliance time frames when an area source becomes a major source. The commenter asked the following questions: (1) does the source become major the month they first exceed either of the area source cutoff thresholds in Section 63.800(b)? (2) does a source need a year's worth of data before it is considered a major source? and (3) does the source become major when their emissions actually exceed the 10/25 ton/yr major source level, regardless of their usage?

Response: Exceeding the thresholds presented in Section 63.800(b) does not automatically make a source a major source. A source becomes a major source when their potential or actual emissions exceed the major source designation of 10 tons of any HAP or 25 tons of a combination of HAP's. The Agency agrees that this is unclear in the proposed rule and has clarified it in the final rule. In the final rule, the source's status is based on their emissions over a rolling 12-month period. If an existing source's potential to emit exceeds the 10/25 ton limitation for any 12-month period, then they must comply with the regulation within 1 year of exceeding the 10/25 ton limitation.

Comment: One commenter (IV-D-16) stated that the applicability determination for area sources should be on the date of promulgation of the final rule. The commenter suggested that sources be required to send an initial notification to the Administrator within 120 days after promulgation of the rule stating whether they wish to commit to the 250/3,000 gallon usage limits.

Response: Area sources are required to keep purchase or usage records documenting that their coating usage is below the 250/3,000 gallon limits. These records will be made available to the Administrator upon request. No initial notification is necessary for area sources.

Comment: One commenter (IV-D-20) stated that the EPA's proposal to assess a penalty for every day of the month that a facility exceeds the HAP limit is not practical. The commenter maintained that the only way for industry to avoid the potential for a 30-day fine is to keep daily records. This would create unnecessary recordkeeping and is inconsistent with the Paperwork Reduction Act of 1980. The commenter suggested that a single penalty for the first offense, with increasing rates for the second and third offenses, would be more reasonable.

Response: The Agency believes that it is appropriate that facilities using an averaging approach be subject to a 30-day fine unless they can demonstrate the violation is due to

activities from a particular day or days. Facilities using a compliant coatings approach are subject to a fine for every day they use a noncompliant coating. Facilities using an averaging approach should not be able to reduce the potential penalties for noncompliance just because they are averaging. Averaging allows facilities great flexibility. However, there are additional recordkeeping requirements and additional risks associated with this flexibility.

Comment: One commenter (IV-D-43) stated that several districts in California have existing rules that address surface coating of wood furniture and they may wish to demonstrate equivalency. If the final compliance date for a Section 112(l) equivalent standard is not the effective date of the equivalent standard, sources will have to comply with dual regulations. The commenter stated that the final compliance date should be 30 days after final action by EPA on the Section 112(l) equivalency request, provided the State or local agency submits a request for Section 112(l) equivalency prior to the final compliance date.

Response: In general, the Part 63 Subpart E rule provides flexibility with regard to source compliance with a newly approved State rule. States may grant additional time for sources to come into compliance; however, in the interim, sources must be in compliance with the underlying Federal Requirement. The regulations require State standards to have the source in compliance no later than required in the comparable Federal standard (40 CFR Secs. 63.92(b)(2)(iv), 62.93(b)(3), and 63.94(b)(2)(ii)(E)).

This requirement becomes problematic in the case where (1) a State standard becomes effective at about the same time as the comparable Federal standard, (2) the State submits its standard for approval under Section 112(l) after the Federal standard is promulgated, and (3) approval comes shortly before the compliance deadline in the comparable Federal rule. In these cases, sources have very little time to comply with the newly approved State rule and may be subject to enforcement action and citizen suits.

The EPA is currently reviewing this issue and plans to address it in the revisions to the Part 63, Subpart E rule at a later date.

2.10 TEST METHODS

2.10.1 Proposed Method 311

Comment: Three commenters (IV-D-02, IV-D-23, and IV-D-31) stated that the technology of Method 311 is outdated in that it is over 10 years old. The commenters claimed that there are analytical equipment and procedures much better than those specified in the method. One commenter (IV-D-23) stated that his company "might have to spend large amounts of money to reequip their labs with old, outdated equipment" that "they threw away years ago."

Response: The specific details provided in Method 311 are not intended to limit the analyst to a single analytical system. The method clearly states that "all systems that employ this principle (viz. gas chromatography), but differ only in details of equipment and operation, may be used as alternative methods, provided that the prescribed quality control, calibration, and method performance requirements are met." If a laboratory's existing equipment could meet the necessary performance requirements, there would not be any need to buy any other equipment.

Comment: One commenter (IV-D-23) stated that EPA should withdraw proposed Method 311 and should not repropose until several major concerns are resolved. The commenter's concerns regarded whether the method will actually work and the fact that the method will probably be borrowed by other rules, so it is important to "get it right" the first time. The EPA has proposed Method 311 for analysis of a wide variety of HAP's in thousands of different products that include solvents, glues, coatings, and washoff materials. The commenter stated that EPA does not possess data to demonstrate the accuracy, reproducibility, or precision of analysis of this method across the broad range of VHAP's and products; in other words, EPA does not yet know this method will work. The commenter stated that EPA should withdraw the method and consult with analytical experts to develop an

up-to-date method that will actually work. One commenter (IV-D-31) suggested a round robin, including a minimum of ten laboratories analyzing at least seven types of paints and coatings, should be completed to determine intra-laboratory precision and accuracy. Paints and coatings should be of known composition and analyzed at least in triplicate.

Response: Method 311 requires the analyst to analyze a quality control check sample, containing all of the analytes of interest in a mixture, to demonstrate that the method can generate results with acceptable accuracy and precision. Thus, the method must be evaluated by the analyst as it is applied to different types of coatings. The Agency believes that the method will be applicable to most types of coatings. Materials for which the method will not work may require the development of alternative methods.

Comment: Three commenters (IV-D-02, IV-D-14, and IV-D-22) stated that the method was much too time consuming, especially the calibration procedure. One commenter (IV-D-02) stated that the way the method is written, it would take hours just to run one sample. Another commenter (IV-D-22) remarked that if the calibration procedure is followed faithfully, "the analyst will not be able to do anything during the day but perform calibration."

Response: The Agency agrees that the original calibration procedure is too time consuming and revised the method to simplify the calibration procedure and reduce the time devoted to calibration.

Comment: Four commenters (IV-D-02, IV-D-22, IV-D-31, and IV-D-43) noted that experimental parameters must be spelled out in the method, such as injection port temperature, column temperature, etc. These parameters will serve as a guide for every analyst using the method; otherwise, there will be hundreds of methods developed with different test parameters. One commenter (IV-D-43) recommended the method recognize guidelines for gas chromatography, such as ASTM E260-91.

Response: Method 311 does allow different methods. Each analyst must set the operating parameters to fit the sample being analyzed. Consistency is ensured by requiring that all analysts calibrate their system with all HAP's of interest and meet the performance specifications of the method.

Comment: One commenter (IV-D-02) pointed out that one is basing the recognition of the unknowns on elution time only. The commenter has found that the only way to identify the peaks and verify their purity is by using the mass spectrometer (MS). The commenter had run the headspace gas chromatograph/mass spectrometer (GC/MS) on products which were reported as zero VOC according to Method 24 and found HAP's present. In heating the specimen to 110°C (to simulate Reference Method 24) the commenter found degradation products, isomers, products not listed in the MSDS sheet, etc., which could not be identified with a GC alone.

Response: Method 311 is not designed to measure unknowns. It presumes that the analyst knows the HAP constituents of the coating. The Agency is developing a procedure which would be capable of measuring HAP's produced during the curing of a coating, but this procedure will not be required by this regulation.

Comment: Four commenters (IV-D-14, IV-D-22, IV-D-23, and IV-D-31) requested the inclusion of megabore and capillary columns. One commenter (IV-D-14) suggested the inclusion of wording to emphasize that the analyst may select an appropriate column, such as a fused-silica capillary column as the primary and a polyethylene glycol wax capillary column for confirmation. One commenter (IV-D-31) suggested the use of capillary columns with bonded phases and a mass selective detector to eliminate column bleed and the need for alternate column confirmation. All commenters asserted that better resolutions are achieved with these columns than with the packed column. Packed columns lack sensitivity for separation of multiple HAP's in a coating and higher boiling HAP's would elute too slowly or not at all. One commenter (IV-D-24) further requested that the phrase "stationary phase" be used to replace "packing material" since a packed

column may not always be the optimal choice. This commenter also recommended that if a porous polymer column is used, that the column be baked prior to each use, because it is not unreasonable to expect excessive bleed at the upper temperature limit of a packed column.

Response: The method never limited the analyst to the particular packed column that was cited as an example system. The ability to choose a column specifically suited to the sample that is being analyzed is an integral part of the test method. The EPA revised the method to suggest a megabore capillary column as an example and to emphasize that other columns that meet the necessary performance requirements are acceptable alternatives.

Comment: Three commenters (IV-D-14, IV-D-22, and IV-D-31) suggested the use of a flame ionization detector (FID) instead of a thermal conductivity detector (TCD). The commenters pointed out that the TCD does not have the sensitivity to detect all the compounds designated by EPA as HAP's, especially those with low concentrations. It was also noted that the use of a TCD would prohibit the use of a more suitable column, such as a capillary column. One commenter (IV-D-14) noted that if FID was used, other carrier gases would need to be added to the list of required gases, such as zero air, hydrocarbon free. One commenter (IV-D-31) also suggested the use of a mass selective detector (MSD). The main advantage of MSD is that compound identification does not rely solely on retention time and second column confirmation. Also, unknown compounds can be identified with a high degree of certainty using an MSD.

Response: The method suggested the TCD as part of an example system, but other detectors would be allowed provided that they could meet the performance requirements of the method. The EPA revised the method to suggest using the FID as part of the example system, but this does not preclude the use of an MSD.

Comment: Two commenters (IV-D-14, IV-D-22) stated that the use of a precolumn is not necessary. All GC instruments come with glass sleeves in the injection port. The glass sleeve retains solid materials from the sample and can be cleaned and

reused. The commenters also stated that preparation of precolumn is time consuming.

Response: The precolumn is only a part of the example system included in Method 311, not a requirement of the method itself. Any column system that meets the performance requirements of the method is an acceptable column system.

Comment: Four commenters (IV-D-14, IV-D-22, IV-D-31, IV-D-47) suggested the use of electronic data stations instead of strip chart recorders. One commenter (IV-D-22) suggested changing to a recording integrator or other data-handling device. Data stations can provide peak area and peak height data. One commenter (IV-D-31) stated that most modern integrators can also compensate for minor baseline drift.

Response: The EPA revised Method 311 to clarify that recording integrators are acceptable alternatives to strip chart recorders.

Comment: One commenter (IV-D-22) stated that digital flow meters should be used instead of soap film bubble meters. Digital flow meters are more accurate and the cost is very reasonable.

Response: The EPA revised Method 311 to clarify that digital flow meters are acceptable alternatives to soap film bubble meters.

Comment: Two commenters (IV-D-14, IV-D-22) stated that EPA should add to Section 7.3 the phrase, "... or other suitable solvent ...". The commenters said that there may be cases where DMF is not compatible with the sample, such as adhesive materials.

Response: The EPA revised Method 311 to allow other suitable solvents as necessary.

Comment: One commenter (IV-D-22) stated that EPA should narrow the percent accuracy range to ± 5 percent and the range of percent relative standard deviation (RSD) to ± 10 percent, because the range of 90 to 110 percent is too wide. Another commenter (IV-D-14) stated that the recommended 30 percent for RSD is too broad to meet the required 20 percent for recoveries and EPA

should change the percent RSD window to 15 percent, recognizing that the deviation will be analyte dependent.

Response: The Agency believes that the performance specifications are appropriate and consistent with each other.

Comment: Three commenters (IV-D-14, IV-D-22, and IV-D-47) stated that an analytical balance capable of weighing to 0.0001 grams is sufficient for this method. A balance capable of weighing to 0.00001 g costs much more, and a 0.0001 g balance will allow calculation to 0.01 percent. Section 9.7 specifies that all weights be recorded to within 1.0 mg, so it is not clear why a balance that is capable of weighing to 0.00001 g is required. The commenters also suggested that all weights be recorded to the nearest 0.1 mg to be consistent with the balance recommendation.

Response: The Agency revised Method 311 to require only that balances be capable of weighing to the nearest 0.0001 g and to require recording all weights to the nearest 0.1 mg.

Comment: Two commenters (IV-D-14, IV-D-22) stated that calibrating the GC with a minimum of five concentration levels is a waste of time. They noted that most GC's have a wide range of linearity and that two or three concentration levels are sufficient for calibration. When an internal standard is properly used, excessive internal calibrations are not necessary. One commenter (IV-D-22) suggested preparing a control chart and performing a two-point calibration every day. One commenter (IV-D-49) stated that Section 10 be revised to require this type of calibration only for labs that are not accredited or do not have a standard calibration procedure established.

Response: The Agency revised Method 311 to reduce the number of calibration concentration levels to three and significantly reduce the amount of daily calibration required.

Comment: One commenter (IV-D-22) stated that it is not clear how the retention times of the internal standard are calculated. The commenter suggested that an electronic integrator or data station could provide these data.

Response: Method 311 contains explicit instructions for determining the retention time of the internal standard, but output from an electronic integrator or data station are acceptable alternatives.

Comment: One commenter (IV-D-22) stated that Section 10.2.2.4 is time consuming and unnecessary. "If the purpose of this section is to confirm the identity of the compound, then why not recommend the use of a GC/MS analytical system?"

Response: The purpose of Section 10.2.2.4 is to ensure accurate quantitation of the various HAP's in the sample, not to confirm the identity of the HAP's.

Comment: One commenter (IV-D-22) stated that the volume of sample injected in the GC should be kept constant. If a prepared sample results in a response outside the limits of a calibration curve, a less dilute solution should be prepared and the same volume of sample injected into the GC. Varying the volume of sample injected into the GC will affect the area response of the analyte. Another commenter (IV-D-14) suggested that language be inserted which allows the use of an automated sample injection system.

Response: The Agency revised Method 311 to require all samples and standards injected into the GC to be of the same volume. Method 311 does not prohibit the use of an automated sample injection system.

Comment: One commenter (IV-D-22) stated that centrifuging of the sample should be performed only as a last resort. The commenter stated that in most cases, the solid portion of the paint settles at the bottom of the vial if allowed to stand undisturbed for about 5 to 10 minutes, and centrifuging may result in a stratification problem, especially when the solvent components of the coating have a wide range of densities.

Response: The Agency agrees and has revised Method 311 to emphasize that centrifuging the sample is a last resort.

Comment: Three commenters (IV-D-14, IV-D-23, and IV-D-43) stated that the applicability of the method is too vague. One

commenter (IV-D-14) requested that the method include an actual list of HAP's for which the method is and is not analytically feasible. For example, acrylic acid, formaldehyde, MDI, and inorganic HAP's cannot be analyzed using this methodology. One commenter (IV-D-23) stated that Section 63.805(a) of the proposed rule should also allow "an equivalent or alternative method" instead of always requiring Method 311, due to this limitation. One commenter (IV-D-43) stated Method 311 will not measure the coating cures (reaction products or cure volatiles).

Response: Again, the Agency believes that the method will be applicable to most types of coatings. The method does require analysis of a quality control check sample to demonstrate that the method can generate results with acceptable accuracy and precision. The Agency is currently developing a test method to measure HAP's produced during the curing of a coating, but that method will not be required by this rule.

Comment: One commenter (IV-D-14) stated that Method 311 should not be used for unknown coatings. The commenter suggested that language be added to the method as follows: "Method 311 should not be used for analysis of unknown coating systems and should only be performed when MSDS information is available for the sample, because this method's dependence on using retention time for identifying each HAP is only appropriate when a known list of the product's expected HAP constituents and their retention times is available."

Response: Method 311 is designed to be used in conjunction with MSDS information. The EPA revised the regulation to clarify the role of MSDS in Method 311 measurements.

Comment: One commenter (IV-D-14) requested the deletion of the word "calibrated" and replacement with "graduated" in regard to the 1, 5, and 10 μ l syringes mentioned in Section 6.2.9.

Response: The Agency revised Method 311 to change the word "calibrated" to "graduated."

Comment: One commenter (IV-D-14) requested the deletion of wording implying that vendor specific "Mininert®" vials are recommended. The commenter suggested replacement with wording

such as "open-top caps fitted with Teflon-faced septum" to allow selection of similar materials from other vendors.

Response: Method 311 does not require the use of "Mininert®" vials. It simply suggests that they are satisfactory containers that meet the requirements of the method. Other inert vials of appropriate size would be equally acceptable.

Comment: One commenter (IV-D-14) requested that language be added to Section 7.3 that requires the use of either chromatography or spectrophotometric grade diluent. The commenter, however, disagreed with the requirement to use spectrophotometric quality 1-propanol for the internal standards, stating that the quality should be reagent grade or higher.

Response: The Agency believes that reagent grade diluent is sufficient and that chromatographic grade or spectrophotometric grade is not required. Because all calibration standards and samples are prepared with approximately the same amount of diluent, any effects from contaminants in the diluent would be minimized. The Agency believes that the purity of the internal standard is more critical because the response of every analyte is related to that of the internal standard. Therefore the Agency is retaining the requirement for spectrophotometric grade internal standard.

Comment: One commenter (IV-D-14) suggested that language be added as follows to improve the efficiency of the standard preparation process: "The stock reference standard may contain more than one analyte, provided they are chemically compatible and do not coelute."

Response: The EPA revised Method 311 to allow the use of stock standard solutions that contain more than one analyte.

Comment: One commenter (IV-D-14) suggested that instead of specifying a stoppered ground glass volumetric flask in Section 7.6.1, the use of any suitable glass container be allowed. The commenter pointed out that the standards are prepared by weight rather than volume.

Response: The EPA revised Method 311 to allow the use of containers other than volumetric flasks because the standards are prepared by weight rather than volume.

Comment: One commenter (IV-D-14) stated that the method should allow flexibility in the preparation of the stock solution. For example, "stock reference standards should be in the range of 1 to 30 percent by weight in a suitable diluent," rather than specifying a fixed and unnecessarily high range for all analyses. The commenter also suggested that instead of transferring the stock reference into one bottle, the stock reference standard solution should be transferred into several smaller Teflon-sealed screw-cap bottles to minimize reopening any one container and exposing the stock repeatedly to air. Two commenters (IV-D-14 and IV-D-47) disagreed with the requirement of storing the stock standards at -10° to -20°C . One commenter stated that storage at 0°C would be adequate.

Response: The Agency revised Method 311 to allow the requested modifications in preparing and storing the stock standard solution.

Comment: One commenter (IV-D-14) maintained that matrix spikes for coatings, as proposed, have a very limited benefit. The commenter suggested the following: (1) delete the requirement to run matrix spikes for all samples and instead require establishing matrix recoveries for each coating formulation on a periodic basis and (2) require collection and analysis of duplicate samples for each coating formulation, reporting an average of the two results. If these requirements are modified, sample collection and quality control requirements will have to be modified as appropriate.

Response: The Agency revised Method 311 to eliminate the requirement for a matrix spike sample and add a requirement to analyze all samples in duplicate and report the average.

Comment: Two commenters (IV-D-14 and IV-D-47) suggested modifying the storage temperature requirements in the sections regarding chain of custody and sample integrity. One commenter (IV-D-14) stated the sample should be maintained at the coating's

recommended storage temperature specified on the MSDS, or if no temperature is specified, then the sample should be maintained at 5° to 38°C.

Response: The EPA revised Method 311 to allow samples to be stored at temperatures between 5° and 38°C.

Comment: One commenter (IV-D-14) stated that since the quality control check standard (QCCS) materials are not likely to be available as purchased certified solutions, the reference to purchasing certified solutions should be deleted in Section 9.4.1.

Response: The Agency is retaining the option to purchase a QCCS to encourage the development of commercial quality control samples.

Comment: One commenter (IV-D-14) stated that instead of requiring the analysis of four aliquots in Section 9.4.2, "a minimum of three aliquots should be required."

Response: The EPA revised Method 311 to require analysis of only three aliquots of the quality control check sample instead of four as previously required.

Comment: One commenter (IV-D-14) stated that the matrix recovery range should be broadened or a specific list of allowable recoveries for individual analytes should be included. The commenter stated that requiring matrix spike recoveries of 80 to 120 percent seems to be arbitrary at this time, since no analytical performance data are yet available for the proposed method. Based on past experience, it is possible that precisions of ± 50 percent are possible for some analytes.

Response: The EPA eliminated the requirement for analyzing a matrix spike sample.

Comment: One commenter (IV-D-14) stated that the specification for response factors of -50 to 100 percent in Section 10.3.2 is too broad. The commenter stated it is more reasonable to perform a system performance check if response factors change by more than ± 20 percent.

Response: The EPA revised Method 311 to require a performance check if response factors change by more than ± 20 percent.

Comment: One commenter (IV-D-14) requested that the method allow flexibility in using smaller sample sizes and proportionally smaller quantities of diluent to minimize waste and cost.

Response: The Agency would consider alternatives that use smaller sample sizes provided the alternative procedure was sensitive enough to determine compliance with the regulation.

Comment: One commenter (IV-D-14) requested that in the "NOTE" to Section 11.0, EPA add a statement to require that an appropriate internal standard and diluent be established.

Response: Method 311 allows the user flexibility to choose a more appropriate internal standard and diluent than the ones recommended in the method. This option is discussed in Sections 7.3 and 7.4. The Agency does believe that it also needs to be discussed in Section 11.

Comment: Two commenters (IV-D-14 and IV-D-31) stated that a significant problem with the proposed Method 311 is that for thermally unstable coatings, it does not provide a means of detecting only HAP's that are intentionally added to a product versus HAP's that may be generated upon injection into the GC due to high injection port temperatures. For example, coatings with melamine-formaldehyde resins liberate methanol at high temperatures. One commenter (IV-D-14) requested that EPA add a section to the method recognizing this potential interference and include in the method a step for optimizing port injection temperature. This optimization is accomplished by conducting the sample analysis at various port injection temperatures; if results indicate that detected quantities of HAP's increase with increased injection port temperature, than the lowest analytically feasible temperature should be used. However, one commenter (IV-D-31) recommended the use of headspace sampling, as opposed to direct injection, due to this problem. A headspace

vial can be discarded after one use and only volatile materials would be introduced into the chromatograph.

Response: As it is currently written, Method 311 would measure only those HAP's that are listed on the MSDS. This would include only those HAP's that are added during formulation. The method would only measure HAP's that were generated by reactions, if those HAP's were already present in the coating as part of the formulation. In the example cited in the comment, methanol would not be measured in the melamine-formaldehyde coating unless it had been added to the coating as a solvent. The Agency believes that this would occur so infrequently that these cases could be handled on a case-by-case basis.

Comment: One commenter (IV-D-14) stated that Reference 4 should be replaced with "ASTM Designation D4827-93. Standard Test Method for Determining the Unreacted Monomer Content of Latexes Using Capillary Column Gas Chromatography." The commenter claimed that Method D4457-85 that is referenced in the proposed Method 311 is "not a good example of how gas chromatography is practiced in the coatings industry today."

Response: The EPA added ASTM Method D4827-85 to the bibliography.

Comment: One commenter (IV-D-14) stated that EPA should replace Reference 5 with Method 301, Field Validation of Pollutant Measurement Methods from Various Waste Media. In the proposed Method 311, Reference 5 contains stringent calibration requirements that are more suited to GC/MS than GC analysis.

Response: The option of developing an alternative method that could be validated by Method 301 is always available to anyone regardless of whether it is cited in the references.

Comment: One commenter (IV-D-49) stated that they supported the use of Method 311 to determine the HAP content of adhesives. The commenter's experience was that Method 24 tended to result in inaccurate VOC values, particularly for higher water content materials, and encouraged EPA to allow the use of Method 311 as an alternative to Method 24 in other Federally-approved rules involving adhesives. The commenter said that the text of the

method make clear that it is intended to apply to adhesives as well as paints and coatings.

Response: The Agency revised Method 311 to make it clear that it applies to coatings other than those in the wood furniture industry.

Comment: Two commenters (IV-D-48 and IV-D-50) stated that an industry group conducted an extensive technical evaluation of Method 311 during the comment period that included a round robin test of a variety of coatings and solvent blends. In general, the group concluded that the proposed method needed extensive modification to achieve the purpose intended. The conclusions were that one single method may not be optimum for all potential HAP's that might be present in coatings; in order to perform the analysis prescribed by Method 311, a testing laboratory must have prior knowledge of the volatile composition of the coating in order to choose the proper conditions for the analysis; high resolution chromatography is required to separate analytes of interest from the other volatiles present in the sample; MSDS will generally provide insufficient information to choose optimum analytical conditions; suggested conditions in the method were not detailed or specific enough to address the issue of thermal instability of the samples and/or analytes; the quality assurance requirements of Method 311 are too stringent, time consuming, and inappropriate for this type of analysis; the cost of analysis on a per sample basis can be expected to be inordinately high, both in terms of time and capital investment. The commenter stated that the problems with the method require extensive re-evaluation or modification of the method in order to make it sufficiently accurate, replicable, and cost effective, particularly in light of the extensive use that the Agency intends to make of it.

Response: Method 311 is not a single method. It is instead a framework which would allow many different methods as long as the method followed the principle of GC separation and met the required performance specifications. Method 311 does presume that the analyst has prior knowledge of the HAP's that have been added to the coating formula. This knowledge can be provided by

the MSDS for third party laboratories or from formulation information for the manufacturers. The Agency agrees that high resolution GC may be required to separate analytes from other volatiles, but Method 311 does not prohibit this. While MSDS may not always provide enough information to allow selection of optimum analytical conditions, they will provide a good starting point for third party laboratories that need to use them. Manufacturers can rely on their more comprehensive formulation information. Thermal instability of analytes should not be a concern because the GC conditions may be varied to fit the analytes of interest. One of the performance requirements of the method is that the instrument must be calibrated with every HAP added to the coating. If the GC operating conditions led to decomposition of the analyte, then the GC, is not properly calibrated. The Agency agrees that the quality assurance requirements in the proposed method were too stringent and has revised the requirements to make them less time consuming. The Agency believes that the cost of analysis by Method 311 will not be excessive and that as procedures are developed to automate the process, costs will decline.

Comment: One commenter (IV-D-48) stated that EPA should allow the use of formulation data to demonstrate compliance with the standards of the rule. The proposed rule itself makes it clear that "if a coating does not release VOC or HAP byproducts during the cure, for example, then batch formulation information shall be accepted." However, it is specifically acknowledged that Method 311 does not measure cure volatiles. The commenter asserted that under these circumstances, there is no reason for EPA to issue a final rule that requires the use of an unreliable and expensive test method.

Response: The proposed rule does allow the use of batch formulation information under some circumstances. When reporting the VHAP content of their coatings, the coating supplier and/or furniture manufacturer may use formulation data. However, the Agency must have some mechanism in place for ensuring that the reported VHAP content based on formulation data is correct.

Method 311 provides such a mechanism. Coating suppliers and/or wood furniture manufacturers do not have to perform a Method 311 analysis for every coating. If they rely on formulation data, however, they do run the risk that the permitting authority, who will use Method 311 to confirm the VHAP content, will find a coating to be noncompliant, even though it may be compliant based on formulation data.

Comment: One commenter (IV-D-50) stated that the proposed revision of Method 311 intended to measure HAP's emitted from the curing of paints and coatings is neither supported by the conclusions of the regulatory negotiation committee nor technically achievable. The VHAP emissions resulting from the curing process are highly sensitive to ambient conditions and conditions of use and may vary widely depending on these variables. Therefore, actual emissions of cure volatiles are highly unpredictable and use of a test method which purports to predict and quantify something as highly variable as actual emissions would introduce an extremely high level of regulatory uncertainty.

In developing this rule, the committee based the VHAP limits on the VHAP content of the coating formulations. The data which were used to calculate the MACT floor relied exclusively on calculations of the actual VHAP content of coatings used by the sources in the Agency's data base. Changing the underlying metric from a measurement of VHAP content of a coating to a measurement of cure volatiles would completely undermine this entire calculation and cast this process into question.

Response: The Agency is developing a test method to measure "cure volatiles," but that method will not be required by this regulation.

Comment: One commenter (IV-D-47) disagreed with several of the equations used in the test method. Equation 7, Section 12, does not calculate percent relative standard deviation. The stock standard is a concentration which would be diluted to make calibration standards. The analysis of the stock standard would produce a chromatogram which is off-scale and the retention time

would not compare favorably with those of calibration standards. Equation 4, Section 12, does not calculate comparative factors. Equations 5 and 6, Section 12, do not calculate response factors. Equation 8, Section 12, does not calculate percent difference in RRF.

Response: Equations 5, 6, 7, and 8 are correct, but the term "comparative retention factor" is being replaced with "relative retention factor" and Equation 4 has been revised to reflect this change.

Comment: One commenter (IV-D-47) stated that Section 12.2.2 specifies duplicate sample analysis, but the procedure does not specify the frequency or protocol for this analysis.

Response: The EPA revised Method 311 to require the analysis of all samples in duplicate and added a procedure for performing the duplicate analysis.

2.10.2 Other Test Methods

Comment: One commenter (IV-D-18) stated that requiring Method 18 to determine the HAP concentration of gaseous streams is burdensome for sources that emit several HAP's. The commenter suggested that a better procedure would be to identify a principal HAP constituent of the gaseous stream and use this compound to determine destruction efficiency. This approach is similar to that taken with hazardous waste incinerators under 40 CFR 264.342.

Response: The Agency does not believe this approach is feasible for the wood furniture industry. The exhaust streams from wood furniture finishing operations may contain as many as 10 different HAP's, particularly if the exhaust from multiple spray booths is directed to the same control device. These HAP's range from alcohols to straight chain hydrocarbons to aromatic compounds. Therefore, the Agency believes that Method 18 should be used to determine the destruction efficiency of the control device.

Comment: One commenter (IV-D-18) stated that the alternative procedures discussed in John Seitz's memo "Revised Capture Efficiency Guidance for Control of Volatile Organic

Compound Emissions," should be allowed without the requirement for Method 301 validation. The commenter pointed out that EPA developed the alternatives based on data acquired following Method 301 procedures.

Response: The Agency agrees with the commenter and incorporated these procedures into the final rule.

Comment: One commenter (IV-D-38) stated that a given source test method, such as Method 24 or Method 311, should not be modified differently for each MACT standard. If a method needs to be modified, it should be given a different number or sub-number.

Response: The Agency is not aware of modifications of these test methods for different MACT standards. The EPA Method 311 is being promulgated with this standard. It has not been incorporated into other MACT standards. The procedures in EPA Method 311 and EPA Method 24 should not be modified for any standard. They should be used as presented in Appendix A, 40 CFR Part 60.

Comment: One commenter (IV-D-43) stated their concern with the reliability and precision of Method 24 over the wide range of coatings used in the wood furniture industry. The commenter said EPA staff have recognized that for high moisture content samples, Method 24 suffers from problems of "poor accuracy and precision." The commenter also stated that the method has similar precision and bias problems when measuring exempt solvents.

Response: The rule allows the use of an alternative or equivalent test method. If a supplier or manufacturer believes that Method 24 is not suitable for a particular coating type, they may use another method as long as the method meets the criteria designated for an alternative or equivalent method.

Comment: One commenter (IV-D-43) stated that it is unclear if State Implementation Plan (SIP) approved test methods or SIP approved modified EPA test methods for determining VOC content of coatings are acceptable alternatives to Method 24. The commenter believed several districts have made SIP approved modifications to Method 24. For example, Method 24 has been modified for

testing low solids coatings to allow the inclusion of water to determine the VOC content of the coating. The commenter stated that these SIP approved modified test methods should be allowed under the proposed rule without having to make a Section 112(l) approval request.

Response: The rule allows for the use of an alternative or equivalent test method in determining the VOC content, the VHAP content, and the solids content of coatings and adhesives. If the modification to the test method is included in an approved SIP, then it should qualify as an alternative or equivalent test method.

2.11 MISCELLANEOUS

Comment: One commenter (IV-D-01), writing on behalf of four organizations, requested an additional 60 days to prepare comments on the proposed NESHAP and Method 311. The commenter stated that the process of assembling comments had proven to be lengthy and complex and that the team of chemists that had been assembled needed further time to complete their analysis of Method 311.

Response: The comment period for the proposed rule was extended 30 days to March 23, 1995, and the comment period for the proposed Method 311 was extended 60 days to April 24, 1995.

Comment: One commenter (IV-D-23) stated that footnote reference "a" should be added to glycol ethers in Table 2 of the rule. Footnote "a" states which glycol ethers are VHAP's and without this reference, several facilities may assume every glycol ether will be regulated. However, another commenter (IV-D-29) stated EPA should delete any reference to any glycol ether as a VHAP of "potential concern" in the proposed rule and referenced test reports supporting their assertion. One commenter (IV-D-47) stated that Table 4 should be expanded to include ethylene glycol monobutyl ether (EGBE), because it is a common HAP found in waterborne coatings.

Response: Table 2 already includes a footnote denoting the structure of glycol ethers that are considered VHAP.

Several glycol ethers were included on the Section 112(g) lists from which the list of VHAP of potential concern were developed. The list of VHAP of potential concern was agreed to by all members of the regulatory negotiation Committee.

Comment: One commenter (IV-D-23) stated that the title of Table 4 is inaccurate and should be changed. Industry never identified the listed chemicals as being of "potential concern"; they identified which proposed Section 112(g) "high-concern," "nonthreshold," and "unrankable" chemicals were likely to be emitted from wood furniture manufacturing industry operations. The commenter stated that many members of industry would dispute EPA's proposed statement that some of these chemicals are "of potential concern." The commenter suggested the title be changed to "Table 4: Chemicals Subject to Formulation Assessment Plan."

Response: All members of the regulatory negotiation Committee, including industry representatives, agreed to the term "VHAP of Potential Concern." The EPA thus decided to retain the title proposed.

Comment: Three commenters (IV-D-23, IV-D-34, and IV-D-36) stated that EPA should publish the entire text of the rule in the Federal Register. One commenter (IV-D-23) stated equations and tables seldom download legibly from the bulletin board. One commenter (IV-D-34) stated that many of the small businesses affected by this rule do not have modems, or in some cases, computers. One commenter (IV-D-36) stated that the preamble provides a list of SIC codes for industries to which the rule would be applicable, but provides no additional detail on what sort of "wood furniture manufacturing" is covered by the rule, so it is appropriate to publish the final rule, as well as the preamble, in the Federal Register.

Response: The Agency appreciates the comments concerning inclusion of the rule in the Federal Register notice. This is current Agency policy, but it is being revisited at this time. In the notice for the final rule, the language of the rule will be included.

Comment: One commenter (IV-D-23) stated that unlike the other provisions around them, Sections 63.803(h)(3) and (4) begin with the word "if" and never say what will result if the specified condition is present.

Response: The Agency appreciates the comments concerning the wording of Sections 63.803(h)(3) and (4). The Agency agrees that "if" is an inappropriate choice for these provisions and revised the language in the final rule.

Comment: One commenter (IV-D-23) questioned why Section 63.803(h)(6)(ii) is limited to stains. The commenter asserted that "sagging or runs" could also occur with coatings and questioned if the limitation was inadvertent.

Response: The limitation was not inadvertent. While sagging or runs may occur with other coatings, the industry representatives on the Committee indicated that stains posed the most problem when using application equipment other than conventional air spray guns. They indicated that the problems with other coatings could be resolved. Therefore, EPA limited the provision only to the application of stains.

Comment: One commenter (IV-D-34) stated that EPA correctly concluded that this standard will not affect water quality and noted that there are many Agency programs addressing other media of pollution, such as RCRA, CWA, CERCLA, etc. The commenter said that "while EPA rightly considers impacts on these other program areas, the overall effect of this regulation will be to reduce the use and emission of certain substances which may be regulated under other programs."

Response: The Agency appreciates the comments supporting their position that the rule should not impact water quality.

Comment: One commenter (IV-D-34) stated that industry believes that the Agency's economic impact analysis severely underestimates the actual impact of the regulation. The commenter said that "one company alone (a major source representing approximately 1.7 percent of the industry-wide wood furniture and kitchen cabinet sales) has estimated that it will have to make a capital investment approaching or exceeding the

... Agency figure." The commenter suggested the industry-sponsored ENSR/NERA study of January 1992 might prove useful in terms of estimating industry-wide capital investment costs, annual compliance costs, and reductions in employment.

Response: The Agency appreciates the commenter's input on the economic impact analysis. However, the Agency does not believe that the ENSR/NERA study would be of benefit in assessing the impact of the NESHAP. The ENSR/NERA study focused on reducing VOC emissions, not HAP emissions. The Agency's cost estimate for the NESHAP is based on the industry reformulating to lower HAP coatings, which will require substitution of solvents, not lower VOC coatings, which would require complete reformulation of the coatings. If the NESHAP required the industry to move to lower VOC coatings, the cost to the industry would be greater.

In addition, many facilities will be subject to both the CTG and NESHAP. It is likely these facilities will have to comply with the CTG first. Therefore, the cost of many of the provisions of the rule, such as the application equipment costs and the operator training costs, were included in costs for meeting the CTG requirements for those facilities located in nonattainment areas.

Comment: One commenter (IV-D-35) suggested that Tables 4, 5, and 6 in the preamble be included in the regulation. The tables provide a simple, straightforward, valuable tool to understanding and applying the requirements of the Wood Furniture MACT. The commenter stated that "sources would be able to identify early on, without muddling through several pages, whether they must comply with the standard."

Response: Summary tables will be included only in the preamble to this rule. However, both the preamble and the final rule will be published in the Federal Register and the Agency is planning to publish a guidance document to assist businesses in understanding and complying with the rule.

Comment: One commenter (IV-D-43) recommended that EPA modify the list of VHAP's in Table 2 to identify each volatile

HAP substance that makes up compound groups, isomers, mixtures, salts, esters, glycol ethers, aroclors, and polycyclic matter, reduced to only those VHAP's that are contained or have a reasonable potential to be contained in wood furniture coatings, and reduced to VHAP's that can be analyzed and accurately quantified by the test methods prescribed in the NESHAP.

Response: The Agency does not believe they can anticipate all VHAP that are, or possibly could be, contained in wood furniture coatings. Because the VHAP content of the coatings to be reported on the certified product data sheet is based on Method 311 and any samples taken by a State or local agency will also be based on this test method, the list of VHAP that will be included in the emission limits is effectively reduced to those that can be quantified using Method 311 without the Agency including such a list in the rule.

TECHNICAL REPORT DATA

(Please read Instructions on reverse before completing)

1 REPORT NO EPA-453/R-95-018B		2	3 RECIPIENT'S ACCESSION NO	
4 TITLE AND SUBTITLE National Emission Standards for Hazardous Air Pollutants for Wood Furniture Manufactuirng Operations: Background Information for Final Standards; Summary of Public Comments and Responses			5 REPORT DATE 1994	
			6 PERFORMING ORGANIZATION CODE	
7 AUTHOR(S)			8 PERFORMING ORGANIZATION REPORT NO	
9 PERFORMING ORGANIZATION NAME AND ADDRESS U.S. Environmental Protection Agency Office of Air Quality Planning and Standards Research Triangle Park, NC 27711			10 PROGRAM ELEMENT NO	
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15 SUPPLEMENTARY NOTES EPA Project Manager: Paul A. Almodóvar (919) 541-0283				
16 ABSTRACT This document includes a summary of all public comments that were submitted on the proposed rule, along with responses to these comments. This summary of comments and responses serves as the basis for the revisions made to the standards between proposal and promulgation.				
17 KEY WORDS AND DOCUMENT ANALYSIS				
a DESCRIPTORS		b IDENTIFIERS/OPEN ENDED TERMS		c COSATI Field/Group
Air Pollution Wood Furniture Manufacturing Emission Limits Hazardous Air Pollutants National Emission Standards		Air Pollution control		
18 DISTRIBUTION STATEMENT Release Unlimited		19 SECURITY CLASS (Report) Unclassified		21 NO OF PAGES 112
		20 SECURITY CLASS (Page) Unclassified		22 PRICE