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Public Data Sources for the LCA Practitioner

LIFE-CYCLE ASSESSMENT: PUBLIC DATA SOURCES FOR THE LCA PRACTITIONER

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RISK REDUCTION ENGINEERING LABORATORY
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NOTICE

The reader should be aware that the inclusion of a data base in this document does not guarantee the quality of the data contained in the listed data bases. Although some limited information on data quality is provided for individual data bases, the decision on whether the data quality is sufficient for a particular LCA application is the responsibility of the LCA practitioner.

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ABSTRACT

The purpose of this document is to provide the life-cycle assessment (LCA) practitioner with potentially useful public data sources for preparing LCAs. This document may be particularly useful to beginning LCA practitioners and organizations without access to proprietary industry data. Established LCA practitioners may benefit from the identification and assessment of the wide variety of data bases presented in this report for potential use in preparing LCAs.

LCA is a systematic method for identifying, evaluating, and minimizing the environmental consequences of resource usage and environmental releases associated with a product, process, or package. The primary emphasis of this document is to present publicly available non-bibliographic data bases which may be of use during the conduct of LCAs. Other types of data sources, evaluated in less detail, include: bibliographic data bases, data base clearinghouses, on-going studies, and foreign data bases. The identification of data sources in this report is limited to electronic data bases.

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CHAPTER 1
INTRODUCTION

The purpose of this document is to present the life-cycle assessment (LCA) practitioner with potentially useful public data sources for preparing LCAs. This document may be particularly useful to beginning LCA practitioners and organizations without access to proprietary industry data. Established LCA practitioners may also benefit from the identification and assessment of the wide variety of data bases presented in this report for potential use in preparing LCAs.

The public data sources described in this document include non-bibliographic data bases (data are directly accessible on-line), bibliographic data bases (data must be extracted off-line from bibliographic references), data base clearinghouses, on-going studies, and foreign data bases. Of these potential LCA data sources, the greatest emphasis was placed on identifying and creating LCA data base profiles of the non-bibliographic databases. These profiles contain a brief assessment of the potential relevance of the data base to LCA, a description of the information contained in the data base, and basic data base system information. General criteria for the electronic data bases identified in this report include potential applicability of the data sources to either life-cycle inventory analysis or impact assessment and the availability of the data to the public at low or no cost. See Appendix A for a list of acronyms, including all data bases discussed.

1.1 Life-cycle Assessment

LCA is a systematic method for identifying, evaluating, and minimizing the environmental consequences of resource usage and environmental releases associated with a product, process, or package. LCA takes a comprehensive approach by analyzing the entire life cycle, which includes the following four stages: raw materials acquisition, manufacturing, use/reuse/maintenance, and recycle/waste management (EPA, 1993). LCA has traditionally been used by industry to guide internal decision-making on product and process changes. Recently, there has been an increase in the number of groups conducting life-cycle assessment. Potential future applications include increased use of LCA by regulatory agencies as a guide in policy-making, use of LCA as a decision support tool in corporate

policy-making, use by public interest groups, and increased use of LCA in environmental marketing.

A complete LCA consists of three components:

1) **Inventory Analysis** - a technical, data-based process of quantifying energy and raw material requirements, atmospheric emissions, and solid waste for the entire life cycle of a product, process, or package. The four stages of the inventory analysis are raw materials acquisition, manufacturing, use/reuse/maintenance, and recycle/waste management.

2) **Impact Assessment** - a technical, quantitative, and/or qualitative process of characterizing and assessing the effects of the resource requirements and environmental loadings identified in the inventory component. The assessment should address ecological impacts, human health impacts, and resource depletion.

3) **Improvement Assessment** - a systematic evaluation of the needs and opportunities to reduce environmental burdens associated with energy, raw materials use, and waste emissions throughout the life cycle of a product, process, or package (Fava et al., 1991; U.S. EPA, 1993).

LCAs can provide valuable information to effect environmental improvements. Identification of opportunities to reduce burdens to the environment can occur during any of the three components of LCA. For example, the inventory component alone may be used to show where an input or output is highest in a given process and, therefore, direct opportunities for reducing emissions, energy consumption, and material use. The impact assessment attempts to use information on environmental effects, moving beyond the numerical quantification of inputs and outputs of the inventory data. Improvement analysis, though not well-developed from a methodological standpoint, provides information which helps ensure that environmental benefits are optimized and adverse impacts to human health and the environment are not created as improvement opportunities are implemented.

LCA is a dynamic tool to aid environmental decision-making; and methods for conducting LCAs are still under development. Of the three LCA components, methods for performing the life-cycle inventory (LCI) analysis are the best developed. LCIs are generally performed prior

to either of the other two LCA components, because LCIs identify and define the inputs, operations, and outputs of a system under study. EPA (1993) has published a document, "Life-Cycle Assessment: Inventory Guidelines and Principles," which provides a set of guidelines and principles for implementation of a product life-cycle assessment, including defining goals and system boundaries, gathering and developing data, presenting and reviewing data, and interpreting and communicating results. The Society of Environmental Toxicology and Chemistry (SETAC) has also been active in the field of LCA, publishing technical and conceptual reports on life-cycle inventory analysis (Fava et. al., 1991) and impact assessment (Fava et. al., 1993).

1.2 Data Considerations

Each component of the LCA relies heavily on adequate and relevant data. At the most basic level, LCA data can be categorized as primary data or secondary data. Primary data are plant-specific or process-specific data which the LCA practitioner can directly access or influence the data collection process. Secondary data, which is the category of data sources addressed in this report, are publicly available data which have not been collected specifically for the purpose of conducting LCAs and for which the LCA practitioner has no input into the data collection process (EPA, 1994).

LCA is a very data-intensive undertaking which can involve the collection and processing of hundreds or thousands of data points. Although the specific data needs of the LCA practitioner vary from one LCA to another, certain types of data are generally needed to perform LCAs. Data needs for the LCA components discussed earlier typically include:

- Facility-, industry-, process-, and/or product-specific information on:
  - Energy Use
  - Raw materials acquisition or use/requirements for manufacturing, processing, and formulation
  - Regulated environmental releases (e.g., waterborne emissions, airborne emissions, solid waste)
  - Transportation and distribution
  - Post-consumer use/reuse/maintenance and recycle/waste management
- Information to evaluate environmental effects for an impact analysis:
  - Biological or toxicological effects
  - Chemical properties or chemical effects modeling to predict potential biological effects
  - Ambient or background level information

Public data sources are typically used by LCA practitioners to fill primary data gaps and to create data sets which are representative of aggregate or national average figures. For example, a public data source containing aggregated information on a commodity material may better reflect the mix of facilities or processes for the material than plant-specific manufacturing data for a particular facility.

1.3 Public Data Sources Addressed in this Report

The focus of this report is on secondary data sources that are publicly available and readily accessible by any LCA practitioner. Five types of data sources are discussed:

- Non-bibliographic data bases containing on-line information covering resource use; energy consumption; environmental emissions; chemical, biological, or toxicological effects; etc. The data are directly accessible to any LCA practitioner.

- Data base clearinghouses, which are on-line services, both government and private, that facilitate the retrieval of information from a variety of data bases and bibliographies.

- Bibliographic data bases (i.e., on-line, computer data bases containing bibliographic information). The data contained in these data bases are not directly accessible, but must be extracted from bibliographic references.

- On-going studies; several U.S. LCI data base projects were identified which may provide valuable information in the future.

- Foreign data bases, a limited number of non-bibliographic data bases (primarily from Western Europe) were identified which are publicly available and are being used by LCA practitioners in Europe.

1.4 Limitations and Constraints

This section describes the limitations and constraints on the information contained in this document. LCAs rely on a multitude of data sources. The focus of this document is on secondary data sources which are publicly available and readily accessible by any LCA practitioner. Given that secondary data sources are those data sources which have been developed for purposes other than LCA, the data sources described in this document are all likely to contain substantial data gaps in regard to any particular LCA. There are no comprehensive data bases currently available which provide all of the needed information for conducting LCAs. Specific examples of data gaps include a lack of information on energy used for transportation in the non-bibliographic data bases, and the fact that few data bases contain detailed information on manufacturing processes or product formulations. This level of detail is often necessary for conducting reliable LCAs. Most manufacturers typically have detailed information on their manufacturing processes and formulations. However, this type of primary data is rarely made available publicly because the data are considered confidential business information and are proprietary. Although government data bases that contain information on manufacturing, processing, or formulations have the potential to be useful, confidentiality clauses often require the public release of only aggregated data. Reducing the level of detail by aggregating data tends to increase the variability and reduce the reliability of

results. However, in many instances, the use of aggregated data is acceptable. Confidentiality considerations and the resultant aggregation of data are common barriers confronting the LCA practitioner.

Listing of data bases in this document does not constitute endorsement for their use in LCAs. In addition, the reader should be aware that the inclusion of a data base in this document does not guarantee the quality of the data contained in the data base. Although individual data bases are profiled and descriptions of data and system information are provided, the decision of whether data quality is sufficient for a particular LCA application is the responsibility of the LCA practitioner. EPA has developed a document providing guidelines for assessing LCI data quality. This document, "Guidelines for Assessing the Quality of Life-Cycle Inventory Data," describes a general, systematic approach for assessing LCI data quality based on data quality goals, data quality indicators, and documentation of practitioner judgements (EPA, 1994).

There are potential sources of LCA data in data bases that will be available in the near future from trade associations and government agencies. For example, the American Plastics Council is currently developing a data base containing LCI data on eight thermoplastic resins. This data base and others were not yet available at the time this document was written, and are discussed in Section 4.1, On-going Studies.

This document provides an overview of potential sources of publicly available LCA data. However, because many of these data bases have not been tested in LCA application, the of the data base for application to LCA is somewhat uncertain. Practitioners may need to review a number of different data bases to identify which would be most useful for their purposes. To better identify the usefulness of data bases for specific LCA applications, an LCA data base user response form is provided in Appendix C of this document. The intent of this form is to provide a mechanism for gathering useful information on the applicability of specific data bases to LCA. Practitioners are encouraged to copy this form as needed and use it to evaluate data bases after review or use, so that the information can be compiled and disseminated.

CHAPTER 2

NON-BIBLIOGRAPHIC DATA BASES AND DATA BASE CLEARINGHOUSES

A total of eighty-five non-bibliographic data bases were evaluated for their potential use in LCAs. Of this number, 39 data bases are profiled in this report. All of the data bases were evaluated first for applicability to life-cycle inventory or impact assessment, availability to the public, and probable ease of use. Those data bases which looked promising were analyzed further on availability and consistency of the data collection methodology, representativeness of current technology, age of the data, completeness, and ability to sort data geographically. For a more detailed discussion of the screening criteria for the non-bibliographic data bases, refer to Appendix B.

Each data base profile begins with a summary description and point of contact for the data base followed by three sections describing the 1) potential relevance of the data base to LCAs, 2) a ten-point description of the data, and 3) basic system information for the data base. The non-bibliographic data bases profiled in this report are referenced by their potential applicability to LCAs and data specificity in Table 1. Using this table, the LCA practitioner can get a quick sense of the variety of data contained in each data base. For example, Table 1 indicates that the Biennial Reporting System (BRS) data base may contain useful facility-specific data for each stage of a life-cycle inventory analysis. The BRS data base does not appear to contain useful information for the conduct of impact assessment.

The non-bibliographic data bases profiled in this document are available from a variety of sources at a variety of costs. Table 2 provides dial-in access/contact numbers and cost information for each of the non-bibliographic data bases included in this document. The cost for on-line data bases are generally based on a flat-fee plus a user connect-time for clearinghouses. The convenience of accessing the data bases through a clearinghouse is generally reflected in their higher costs. It should be noted that the contact numbers and fees listed in Table 2 are subject to change.

TABLE 1. CATEGORIES OF LCA INFORMATION AVAILABLE FROM SELECTED NON-BIBLIOGRAPHIC DATA BASES (CONTINUED)

Database[a]	Page No.	LCA Application[b]	Media Covered[c]	Data Specificity[d]	Data Age[e]	Update Frequency
304(l)	18	Inventory (2)	W	na	current	biannually
AIRS	20	Inventory (2,3,4) Impact (10)	A	F	1957-date	daily
AQUIRE	23	Impact (5,7,8)	W	C	1972-date	quarterly
ARIP	26	Inventory (2) Impact (5)	A,W	I	1988-date	monthly
ASHDISPOS	28	Inventory (4) Impact (10)	W,L,SW	F	1989 only	na
BLIS	30	Inventory (2,4)	A	F	current	monthly
BRS	33	Inventory (1,2,3,4)	A,W,L,SW	F	1981-date	biannually
CAIR	36	Inventory (1,2) Impact (5,7,8)	A,W,L,SW	PC,I,F	1991-date	na
CCRIS	39	Impact (5)	A,L,W	C	current	monthly
CESARS	42	Inventory (2) Impact (5,7)	A,W	C	1992	na
CHEM-INTELL	44	Inventory (1,2)	na	PD,C	1973-date	monthly
CUS	47	Inventory (1,2)	A,W,L,SW	C	1990	every 4 years
"DSOSS"	50	Impact (5,7)	L	PD,C	na	biannually
EDB	53	Inventory (1,3)	A,W,L,SW	PC	1992	continually
EFDB	56	Impact (5,7)	W,SW	C	na	periodically
EFG	59	Inventory (1,2) Impact (10)	W	F	current	na
"GTOM/YR"	62	Inventory (1,2)	NA	PC	current	annually
HSDB	64	Inventory (2) Impact (5,7,10)	A,W,L,SW	C	current	monthly
IRIS	67	Impact (5,7,8)	A,W	C	current	monthly
IRPTC	70	Inventory (1,2,3,4) Impact (5,6,7,8)	A,W,L,SW	C	1989-date	na
"MCDB"	73	Inventory (1,2)	L,SW	PD,PC,I,F	current	continually

CONTINUED...

TABLE 1. CATEGORIES OF LCA INFORMATION AVAILABLE FROM SELECTED NON-BIBLIOGRAPHIC DATA BASES (CONTINUED)

Database[a]	Page No.	LCA Application[b]	Media Covered[c]	Data Specificity[d]	Data Age[e]	Update Frequency
MINES	75	Inventory (1) Impact (9)	A,W,L	PD,I	na	na
NATICH	77	Inventory (2) Impact (5,10)	A	PD,I,F	1984-date	annually
ODES	80	Inventory (2,3,4) Impact (6,7,8,10)	W	F	current	biweekly
PADS	83	Inventory (4)	SW	F	current	weekly
PCS	85	Inventory (2,4) Impact (5)	W	PC,F	current	biweekly
PHYTOTOX	88	Impact (5)	L,SW	C	1986	periodically
PISCES	91	Inventory (2) Impact (7,8)	A,W,L,SW	PC,F	current	regularly
PPIS	93	Inventory (2)	A,W,L,SW	PD	current	regularly
RCRIS	95	Inventory (3,4) Impact (10)	A,W,L,SW	F	current	quarterly
REPROTOX	97	Impact (5)	NA	C	current	weekly
RTECS	99	Impact (5,7)	A,W,L	C	current	quarterly
SimaPro	101	Inventory (1,2,4)	A,W,SW	PD,PC,I,F	current	annually
STORET	104	Inventory (4) Impact (10)	W	F	1980-date	weekly
TERRE-TOX	107	Impact (5)	L	C	1989	na
TRI	110	Inventory (2,4)	A,W,L,SW	PD,I,F	1987-date	continually
WATSTORE	113	Impact (10)	W	F	current	na
WBS	115	Impact (10)	W	C	current	biannually
WHOWMO	117	Impact (6,10)	A,W	na	1972-date	weekly

[a]Data base acronyms are defined in Appendix A.
[b]Key to LCA application is as follows:

Inventory:
1—raw materials acquisition
2—manufacturing
3—use/reuse/maintenance
4—recycle/waste management

Impact:
5—biological effects
6—ecosystem effects
7—chemical properties
8—chemical modeling
9—resource depletion
10—background concentration

[c]A=air, W=water, L=land, SW=solid waste.
[d]PD=product , PC=process, I=industry, F=facility , C=chemical.
[e]Current data includes that equal to or less that one year old.

TABLE 2. NON-BIBLIOGRAPHIC DATA BASE DIAL-IN CONTACT AND COST INFORMATION

Database	Contact/Dial-in Number	Cost*
304(l)	• Deborah Clovis (202) 260-9519	• No Cost for hardcopy - no electronic access
AIRS	• AIRS User Support (919) 541-7862 • NTIS: Contact Subscription Department (703) 487-4630 to receive subscription information. • National Computer Center (NCC): non-EPA users must complete an interagency agreement. May be easier to obtain data through NTIS.	• Need EPA/AIRS id number to access. • NTIS: $15/month plus connect time • NCC cost varies by type of computer and type of information requested
AQUIRE	On-Line/VAX: • Chemical Information Systems (CIS): Contact (800) 247-8737 to receive subscription information. • Technical Database Services (212) 245-0044 • NTIS: Contact Subscription Department (703) 487-4630 to receive subscription information. Database Retrieval: • JSF Environmental Software (508) 369-1002 • Spectrum Research (218) 525-5322	 • CIS: $300/yr. flat rate plus connect time ($1 to $2 per minute) • TDS: $700 subscription fee plus $120 per connect hour • NTIS: $15/month flat rate plus connect time • JSF: $940 flat fee plus $400 per yearly updates • Spectrum: Not available
ARIP	• Contact David Chung (202)260-8942 at EPA Office of Solid Waste and Emergency Response for information.	• No cost
ASHDISPOS	• Contact Victor Lambou (904) 644-5516 at EPA Office of Research and Development, Florida State University for information.	• Not available
BLIS	• Contact the EPA Technology Transfer Network (TTN) Bulletin Board at (919) 541-5742.	• No cost
BRS	On-Line/VAX: • National Computer Center (NCC): non-EPA users must complete an interagency agreement. May be easier to obtain data through NTIS. Data Retrieval: • State Agencies • EPA Office of Solid Waste	 • NCC cost varies by type of computer and type of information requested • No cost • No cost

CONTINUED

TABLE 2. NON-BIBLIOGRAPHIC DATA BASE DIAL-IN CONTACT AND COST INFORMATION (CONTINUED)

Database	Contact/Dial-in Number	Cost*
CAIR	• Must prepare FOIA request to EPA Office of Toxic Substances (OTS). Contact Joanne Martin (202) 260-0431 for information.	• No cost
CCRIS	• Through TOXNET: contact the National Library of Medicine (NLM) (800) 638-8480 to obtain a user ID application. • Chemical Information Systems (CIS): Contact (800) 247-8737 to receive subscription information. • COMPUSERVE	• All NLM data bases (including TOXNET) are roughly $18/hour. No start-up or monthly fee. • CIS: $300/yr. flat rate plus connect time ($1 to $2 per minute)
CESARS	• Chemical Information Systems (CIS): Contact (800) 247-8737 to receive subscription information. • NTIS: Contact Subscription Department (703) 487-4630 to receive subscription information. • CCINFO	• CIS: $300/yr. flat rate plus connect time ($1 to $2 per minute) • NTIS: $15/month plus connect time • CCINFO: Not available
CHEM-INTELL	• Contact Julie Chatterjee 44-34-233-5885 at Chemical Intelligence Services, England for information.	• Not available
CUS	• Must prepare FOIA request to EPA Office of Toxic Substances (OTS). Contact Joanne Martin (202) 260-0431 for information.	• No cost
"DSOSS"	• Contact Tamar Gund (201) 596-3669 at the Emission Reduction Research Center for information.	• Won't be available to public until mid-1994; cost not yet established
EDB	• Contact Michael Lazarus for purchasing EBD diskette	• Free for developing countries; $1000 for public institutions; $5000 for private institutions.
EFDB	• Contact Phil Howard (315) 426-3350 for subscription application to on-line services *or* to purchase EFDB diskettes.	• On-line: $25 subscription and $150 per connect-hour. • Diskettes: $4000

CONTINUED

TABLE 2. NON-BIBLIOGRAPHIC DATA BASE DIAL-IN CONTACT AND COST INFORMATION (CONTINUED)

Database	Contact/Dial-in Number	Cost*
EFG	• Contact Eric Strassler (202) 260-7120; will forward user to appropriate industry representative (grouped by Clean Water Act class)	• Cost would vary by the type of data and level of manipulation needed. Can estimate if user Contacts with detailed request.
"GTOM/YR"	• Contact the Utility Data Institute (800) 486-3660 to receive hard copy report and/or diskette.	• Report alone: $225; report and diskette: $500
HSDB	• Through TOXNET: contact the National Library of Medicine (NLM) (800) 638-8480 to obtain a user ID application.	• All NLM data bases (including TOXNET) are roughly $18/hour. No start-up or monthly fee.
IRIS	• Through TOXNET: contact the National Library of Medicine (NLM) (800) 638-8480 to obtain a user ID application.	• All NLM data bases (including TOXNET) are roughly $18/hour. No start-up or monthly fee.
IRPTC	• Contact Emma McNamara (202) 260-1522 at EPA Office of Information Resources Management for information.	• No cost (for reasonable requests)
"MCDB"	• Contact Abby Scheiner (800) 743-1060 at the Plastics Technology Magazine to receive data (hardcopy or diskette).	• Prices range from $2 to $24 for data on a per facility basis.
MINES	• Contact MINES Bulletin Board (202) 501-0373 for on-line access information.	• No cost
NATICH	• Contact the EPA Technology Transfer Network (TTN) Bulletin Board (919) 541-5742 / Telnet: TTNBBS.RTP.NC.EPA.GOV for access information.	• No cost
ODES	• Contact Bob King (202)260-7028 at EPA Office of Wetlands, Oceans, and Watersheds for information.	• No cost
PADS	• Contact Jeraldine Hilton (202) 260-3967 for hard copy of data.	• No cost
PCS	• Submit FOIA request to EPA regional office or headquarters. • NTIS: Contact Subscription Department (703) 487-4630 to receive subscription information.	• Cost varies by amount of information requested ($25-1000s) • NTIS: $15/month plus connect time

CONTINUED

TABLE 2. NON-BIBLIOGRAPHIC DATA BASE DIAL-IN CONTACT AND COST INFORMATION (CONTINUED)

Database	Contact/Dial-in Number	Cost*
PHYTOTOX	• CIS: Contact (800) 247-8737 to receive subscription information. • NTIS: Contact Subscription Department (703) 487-4630 to receive subscription information.	• CIS: $300/yr. flat rate plus connect time ($1 to $2 per minute) • NTIS: $15/month plus connect time
PISCES	• Send fax to (415) 855-2002 at the Electric Power Research Institute (EPRI) with a detailed description of the information needed. EPRI will send licensing agreement form for user to complete. Contact Barbara Toole-O'Neil at (415) 855-1005 for additional information.	• No cost
PPIS	• Contact Cherly Bradley (703) 305-5981 or Jim Beech (703) 305-5439 at EPA Office of Pollution Prevention for information. • CERIS	• No cost • CERIS: Not available
RCRIS	• Contact Lisa Herns (202) 260-4697 at EPA Office of Solid Waste and Emergency Response for information.	• No cost
REPROTOX	• Contact Kay Padgett (202) 293-5137 at the Reproductive Toxicology Center, Columbia Hospital for Women Medical Center to receive on-line subscription information.	• Individual $200/yr • Individual/group associated with hospital, education, or government $400/yr • Individual/group associated with for profit organization $850/yr **$350/yr for quarterly update diskette
RTECS	• DIALOG • Through TOXNET: contact the National Library of Medicine (NLM) (800) 638-8480 to obtain a user ID application. • CIS): Contact (800) 247-8737 to receive subscription information. • CCINFOLINC	• DIALOG: Not available • All NLM data bases (including TOXNET) are roughly $18/hour. No start-up or monthly fee. • CIS: $300/yr. flat rate plus connect time ($1 to $2 per minute) • CCINFOLINC: Not available

CONTINUED

TABLE 2. NON-BIBLIOGRAPHIC DATA BASE DIAL-IN CONTACT AND COST INFORMATION (CONTINUED)

Database	Contact/Dial-in Number	Cost*
SimaPro	• Contact Pre' Consultants 31/(0) 71-277486 at the Center for Environmental Sciences, Leiden University, The Netherlands for information.	• Not available
STORET	• NTIS: Contact Subscription Department (703) 487-4630 to receive subscription information.	• NTIS: $15/month plus connect time
TERRE-TOX	• NTIS: Contact Subscription Department (703) 487-4630 to receive subscription information.	• NTIS: $15/month plus connect time
TRI	• Through TOXNET: contact the National Library of Medicine (NLM) (800) 638-8480 to obtain a user ID application. • NTIS: Contact Subscription Department (703) 487-4630 to receive subscription information. • GPO	• All NLM data bases (including TOXNET) are roughly $18/hour. No start-up or monthly fee. • NTIS: $15/month plus connect time
WATSTORE	• Contact Jim Burton (703) 648-5684 at the U.S. Geological Survey to set up on-line account.	• Cost based on connect-hours.
WBS	• Contact State Agencies • National Computer Center (NCC): non-EPA users must complete an interagency agreement. May be easier to obtain data through NTIS.	• Not available • NCC cost varies by type of computer and type of information requested
WHOWMO	• Contact Gardner Evans (919) 541-3887 at EPA Office of Research and Development for information.	• No cost

*NOTE: Cost information is subject to change.

2.1 Clearinghouse Descriptions

Several data base clearinghouses also available to the public. Clearinghouses are extremely useful for obtaining substantial amounts of information from one source, to use for conducting life-cycle inventory analyses and impact assessments. Clearinghouses enable access to a number of data bases with broad subject ranges. Information can be obtained from non-bibliographic and bibliographic data bases from one computer terminal. Access to clearinghouses may reduce costs and time involved in data collection activities required for LCAs by providing access to more than one data base from a central location. Several data base clearinghouses are available both through Federal government agencies and commercial means. Only the clearinghouses which access data bases that qualified for profiling are included in this section. Table 3 provides a listing of the non-bibliographic data bases available through several of the clearinghouses determined to contain information relevant for conducting LCAs.

Chemical Information System (CIS)

The CIS clearinghouse provides on-line access to a series of data bases containing chemical information on specific chemical substances including toxicological and/or carcinogenic research data, hazardous materials handling information, regulatory information, spectroscopic data, chemical/physical property information, safety and health effects information, and pharmaceutical information. Each component of the CIS is essentially a "stand-alone" system dealing with a particular aspect of chemistry, toxicology, and environmental pollution. Nearly all CIS data bases contain quantitative data, in addition to bibliographic references. Some contain the full text of the source material. Specific chemical substances can be located in the CIS data bases by chemical name or CAS Registry Number. Both full and partial structure searches may also be used to identify chemicals of interest. All components are prepared according to a standard set of CIS guidelines so that they can share utility software and communicate with each other. Standard data base cross-reference procedures allow the user to conduct composite searches dealing with various subjects, and, similarly, to display information on those subjects from the various data bases in which it is found. Additional information can be obtained from Chemical Information Systems, Inc., 7215 York Road, Baltimore, MD 21212, (410) 321-8440 or (800) CIS-USER.

TABLE 3. NON-BIBLIOGRAPHIC DATA BASES AVAILABLE THROUGH CLEARINGHOUSES

Data Base Acronym[a]		Contains Data For:		Data Base Clearinghouses			
	Page No.	Inventory	Impact	CIS	MEDLARS/TOXNET	RBLC	DIALOG
AIRS	14	X	X			X	
AQUIRE	18		X	X			
BLIS	27	X				X	
CCRIS	36		X	X	X		
CESARS	39		X	X			
CHEM-INTELL	42	X					X
HSDB	63	X	X		X		
IRIS	66		X	X	X		
NATICH	77	X	X			X	
PHYTOTOX	90		X	X			
RTECS	103		X	X	X		X
TRI	115	X			X		X

[a]See Appendix A for acronym definitions.

DIALOG Information Retrieval Service (DIALOG)

The DIALOG clearinghouse was established in 1972 with over 380 data bases from a broad scope of disciplines. The data bases on the DIALOG system contain in excess of 260 million records including non-bibliographic and bibliographic data bases. Subject coverage includes science, business, technology, chemistry, law, medicine, engineering, social sciences, and economics. The data bases are regularly updated with the most recent information available. The majority of databases include menu-driven search capabilities through the PC-based, 24-hour accessibility system. Additional information can be obtained from DIALOG Information Services Inc., 3460 Hillview Ave., Palo Alto, CA 94304, (800) 334-2564.

Medical Literature Analysis and Retrieval System (MEDLARS)

The National Library of Medicines computer-based MEDLARS clearinghouse was established to achieve quick bibliographic access to the NLM's vast store of biomedical information. Among the databases developed by the NLM's Toxicology Information Program (TIP) are the Toxicology Information On-line (TOXLINE), CHEMLINE, and CHEMID. The latter two are chemical directory files. TIP also implemented the Toxicology Data Network (TOXNET) system of 12 toxicologically oriented data banks. As part of the MEDLARS System, TOXNET is a computerized collection of non-bibliographic and bibliographic data bases on toxicology, hazardous chemicals and related areas. Quantitative data are available through TOXNET. Additional information can be obtained from the National Library of Medicine, Specialized Information Services, 8600 Rockville Pike, Bethesda, MD 20894, (800) 638-8480.

RACT/BACT/LAER Clearinghouse (RBLC)

EPA established the RBLC to assist State and local air pollution control personnel in making control technology determinations and in sharing technology information. The RBLC also summarizes recent determinations for sources of similar size and nature, and provides data on specific emission limits imposed on existing, new or modified sources across the country. The RBLC serves as a reference or starting point for State and local agencies when making Reasonable Available Control Technology (RACT), Best Available Control Technology (BACT), or Lowest Achievable Emissions Rate (LAER) determinations. The RBLC allows for rapid updating of RACT/BACT/LAER determinations, rapid production of clearinghouse reports, and allows Regional offices and State and local agency representatives to have a more direct computer access to data. The RBLC data base is a PC-based system with menu-driven and advanced search capabilities. The information in the clearinghouse contains downloadable information. Additional information can be obtained from the U.S. Environmental Protection Agency, Control Technology Center, Emission Standards Division, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711, (919) 541-5432.

2.2 Data Base Profiles

The following pages provide the data base profiles developed through the screening process.

304(L)

System Name: ***304(l) Progress Tracking System ("The National 304 (L) Short List Data Base")*** **Acronym: 304(L)**

Lead Organization Name: *U.S. EPA*
Office of Water Enforcement and Permits
401 M Street, S.W.
Washington, DC 20460

Contact Person or Office: *Debora Clovis*
(202) 260-9519

Summary Description: *The "National 304(l) Short List Data Base" was created and is maintained by EPA's Office of Water Enforcement and Permits to track progress of implementation of 304(l) of the Clean Water Act. This data base includes information on point sources discharging into those waters on the short list (e.g., the 307(a) pollutants the point source was listed for and the status of the individual control strategy required). The information is provided by the EPA Regional Offices and is updated 2 to 3 times a year.*

RELEVANCE TO LCAS

Applicability to LCA Component: *Inventory analysis*

Specific LCA Category: *Manufacturing*

Comments: *This data base provides useful information on certain point source water emissions. The data are waterbody-specific and would be useful for localized LCAs for industries regulated by 304(l).*

DATA DESCRIPTION

Data Source: *Industries required to comply with 304(l) of the Clean Water Act.*

Data Specificity: *The data are waterbody-specific*

Data Collection Purpose: *Environmental compliance and compliance tracking*

Environmental Media: *Water*

How Data Are Obtained: *Data are collected through the EPA Regional offices and letters submitted by state agencies.*

304(L)

Data Collection Methodology: *Data collection methods use standardized formats but are not included in the data base, and may require further inquiry through the applicable state. The number of various data collection methodologies varies by state depending on each states requirements. The data represent current technology. The data are measured and reported in single values.*

Data Age: *The data base was established in 1989 and was updated quarterly until 1991. Since 1991, updates began to occur periodically.*

Geographic Specificity: *The data can be sorted by state, facility location, city, and waterbody*

Indicators of Data Quality: *The data base is independently audited for data quality. 85% of all data fields are complete and represent current technology.*

Confidentiality: *The data are available to the public; however, some sanitized facility-specific data may be available.*

SYSTEM INFORMATION

Accessibility: *304(l) is menu-driven.*

System Type: *This data base operates on IBM-compatible PC equipment*

Size of Data Base: *Approximately 686 records*

Number of Fields: *Approximately 10 fields*

Data Sortability: *The data fields and data within the fields are sorted by the user.*

Related Systems: *None*

Other Access: *None*

Key Words:

Biological
Compliance
Discharge points
Environmental releases
Monitoring
Point source
Monitoring
Geographic coordinates
Site characteristics
Surface water

AIRS

System Name: ***Aerometric Information Retrieval System*** **Acronym: AIRS**

Lead Organization Name:

U.S. EPA
Office of Air Quality Planning and Standards
National Air Data Branch
Mail Drop 13
Research Triangle Park, NC 27711

Contact Person or Office:

Virginia Ambrose
(919) 541-5454
FAX (919) 541-5663
Tom Link (Non-EPA contact)
(919) 541-5456
Chuck Isbell (EPA contact)
(919) 541-5448

Summary Description:

AIRS stores air quality, point source emissions, and area/mobile source data required by Federal regulations from the 50 states. Monitoring is required for the criteria pollutants based on population, pollutant sources, geographical area, etc. Point sources emitting more than 100 tons per year of any criteria pollutant (except 5 tons per year for lead and 1,000 tons per year for CO) must report actual or estimated annual emissions data.

AIRS is comprised of three subsystems; The Air Quality Subsystem (AQS) which has data on ambient air quality; The AIRS Facility Subsystem (AFS), which is used to track emissions and compliance data from industrial plants; and the Geo-Common Subsystem (GCS) which stores reference information for all AIRS subsystems. A fourth subsystem, the AIRS Area/Mobile Source Subsystem (AMS) is presently under development and will eventually contain estimates of area-wide emissions from mobile sources, forest fires, fugitive transport, and other area-wide emissions sources.

RELEVANCE TO LCAS

Applicability to LCA Component: *Inventory analysis, impact assessment*

AIRS

Specific LCA Category: *Manufacture, use/reuse/maintenance, recycle/waste management, ambient air background chemical concentration*

Comments: *This data base contains emissions data specific to CO, NO_2, O_3, Pb, SO_2, particulates (PM10), ozone, and Volatile Organic Compounds (VOC). The data base contains source emissions and compliance information, area source emissions information, and reference information that are used with air quality and facility data. The combination of this type of data would be useful in conducting LCAs, but are limited to emission output data. The quality assurance procedures for data collection and data entry ensure the data are accurate. Information on the types of air monitors used is also available.*

DATA DESCRIPTION

Data Source: *Industry-required reporting and other government agencies including state agencies*

Data Specificity: *The data are facility-specific and point source*

Data Collection Purpose: *Regulations and standards, environmental compliance, and trend monitoring*

Environmental Media: *Air*

How Data Are Obtained: *Data are collected through the state and Local Air Monitoring System (SLAMS) and the National, Air Monitoring System (NAMS)*

Data Collection Methodology: *The data collection methodology is included in the data base, but may require further inquiry through the applicable state. The number of various data collection methodologies varies by state depending on each states' requirements. The data represent current technology. The data are measured and reported as single values. Averages of time-scale measurements are also included.*

Data Age: *The data base is an upgrade of several data bases going back to 1957. Only the last 5 years of data are currently on the system, but older data can be requested and loaded back into the system. The data base is updated daily.*

AIRS

Geographic Specificity: *The data can be sorted by state, facility location, latitude/longitude, county, etc.*

Indicators of Data Quality: *The data base is independently audited for data quality. All of the data are run through the Precision and Accuracy Reporting System (PARS) before being loaded into AIRS. Summaries of the precision and accuracy of data from groups of monitors are also available.*

Confidentiality: *Only select data categories are available to the public. Users are profiled and determinations are made as to the data the user will be permitted to access. Only certain users, determined by the system manager, may access confidential air pollution data. Non-EPA users can request AIRS data through the FOIA process from the National Air Data Branch (NADB) staff.*

SYSTEM INFORMATION

Accessibility: *AIRS is menu-driven and is accessible with a dial-up modem*

System Type: *This data base operates on IBM-compatible PC equipment with the modem, but can be used on various data networks or mainframes.*

Size of Data Base: *Over 200,000 records*

Number of Fields: *Approximately 7,000 fields*

Data Sortability: *The data fields and data within the fields are sorted by the user.*

Related Systems: *This system uses the SLAMS and NAMS data systems for its data.*

Other Access: *The system can be accessed through the National Computer Center in Research Triangle Park, NC and from the RACT/BACT/LAER Clearinghouse (RBLC).*

Key Words:

Chemical
Discharge points
Environmental compliance
Environmental releases
Geographic codes
Geographic coordinates
Manufacturing

AQUIRE

System Name: ***Aquatic Toxicity Information Retrieval*** **Acronym: AQUIRE**

Lead Organization Name:

U.S. EPA
Office of Research and Development
Office of Environmental Processes and Effects Research
Environmental Research Laboratory
6201 Congdon Boulevard
Duluth, MI 55804

Contact Person or Office:

Robert Spehar
(218) 720-5564
Chris Russom
(218) 720-5709

Summary Description:

AQUIRE was established in 1981 and is updated and maintained by EPA-Duluth. Aquire provides quick access to a comprehensive, systematic, computerized compilation of aquatic toxic effects data. AQUIRE contains information on the toxicity of chemicals (except oils) to over 2,400 species of fresh and saltwater organisms (not including bacteria, birds, and aquatic mammals). Acute, chronic, bioaccumulation, and sublethal effects are included. Published papers and final reports are reviewed and information on test conditions and results are entered into the data base. Data items included are chemical substance information, test organism details, study protocol, and test results. As of August 1992, AQUIRE consists of over 99,710 individual test results from 5,500 chemicals and 2,361 organisms, extracted from 6,650 publications. All AQUIRE data entries have been subjected to established QA procedures.

Plans have been made by EPA-Duluth, EPA-Corvallis, the Office of Technology Transfer and Regulatory Support, Office of Water, and Office of Solid Waste and Superfund to combine three data bases (PHYTOTOX, TERRE-TOX, and AQUIRE) into a single data base called ECOTOX. A discussion of ECOTOX is included in the section titled "On-going Studies."

RELEVANCE TO LCAS

Applicability to LCA Component: *Impact assessment*

AQUIRE

Specific LCA Category: *Biological effects and toxicological effects, chemical properties related to environmental fate or effects, chemical modeling related to environmental fate or effects*

Comments: *This data system is useful for impact assessment only and the data are especially useful in evaluating the effects of chemicals on aquatic systems.*

DATA DESCRIPTION

Data Source: *Data on toxic effects are primarily from journal articles and other published documents.*

Data Specificity: *The data are chemical-specific*

Data Collection Purpose: *Compile aquatic toxicity data on chemicals for research and setting of regulations and standards.*

Environmental Media: *Water*

How Data Are Obtained: *Reviewed published journals, and other literature sources.*

Data Collection Methodology: *The references describe the data collection methodology and the test conditions are stated in the data base.*

Data Age: *The data base is updated quarterly and represents current technology. The data have been collected since 1972.*

Geographic Specificity: *Most of the data are laboratory values that are not specific to any geographic area.*

Indicators of Data Quality: *The data are from peer-reviewed journal articles.*

Confidentiality: *All of the data are available to the public.*

SYSTEM INFORMATION

Accessibility: *The data are menu-driven and accessible through a dial-up modem from several private vendors (e.g., CIS), but not directly available to the general public from EPA.*

System Type: *This data base operates on IBM-compatible PC equipment, and network*

Size of Data Base: *Over 99,710 records*

AQUIRE

Number of Fields: *Approximately 5,500 fields*

Data Sortability: *The data fields and data within the fields are sortable by request.*

Related Systems: *AQUIRE is combined with QSAR as the ASTER data base, but ASTER can only be accessed by government employees.*

Other Access: *CIS on-line, NTIS (VAX, VMS data tapes), Spectrum Research, Co., Inc, (ASCII and microcomputer files), AScI Corporation (microcomputer format), and Daylight Chemical Information Systems, Inc. (VAX, VMS, and UNIX-based software for on-site use).*

Key Words:

Aquatic toxicity
Biological effects
Chemical
Environmental effects
Population, human
Toxic effects

ARIP

System Name: ***Accidental Release Information Program*** **Acronym: ARIP**

Lead Organization Name: *U. S. EPA*
Office of Solid Waste and Emergency Response
Chemical Emergency Preparedness and Prevention Office
Chemical Accident Prevention Branch
401 M Street, SW
Washington, DC 20460

Contact Person or Office: *Vanessa Rodriguez*
(202) 260-7913

Summary Description: *This program is a non-regulatory approach to foster improvements in overall chemical process safety. Information collected through ARIP is used to establish a national data base and clearinghouse about causes of accidental chemical releases and ways to prevent them from recurring. This data base is used to study and develop program initiatives, to focus attention on releases, and to foster the use of accidental release prevention activities and technologies. Data analyses findings are disseminated and shared among all those with responsibility to prevent accidental releases.*

RELEVANCE TO LCAS

Applicability to LCA Component: *Inventory analysis, impact assessment*

Specific LCA Category: *Manufacture, biological effects and toxicological effects*

Comments: *This data base is more useful for conducting the impact assessment portion. It provides data on accident frequency and magnitude for several industries. It also contains some limited environmental release and accident information which may be useful for inventory analysis.*

DATA DESCRIPTION

Data Source: *Data are provided by industries on questionnaires.*

Data Specificity: *The data are industry-specific.*

Data Collection Purpose: *Trend monitoring, accident prevention promotion*

Environmental Media: *Air, water*

ARIP

How Data Are Obtained: *Questionnaires are provided to industries to document their accident prevention programs and accident reports.*

Data Collection Methodology: *The data collection methodologies are available for review within the system. There are a several data collection methodologies used for data collection. About 85 to 90% of the data fields are complete.*

Data Age: *The data have been collected since 1988, are updated monthly, and represent current technology.*

Geographic Specificity: *The data can be sorted by state or zip code.*

Indicators of Data Quality: *The data are not independently audited for data quality, however, the data are traceable. Data accuracy depends on how well the industries are tracking their accident information.*

Confidentiality: *All of the data are available to the public.*

SYSTEM INFORMATION

Accessibility: *The data base is menu-driven and uses the dBase computer language.*

System Type: *This data base operates on IBM-compatible PC equipment*

Size of Data Base: *Over 4,000 records*

Number of Fields: *Approximately 22 fields*

Data Sortability: *The data fields and the data within the fields are sortable.*

Related Systems: *Emergency Response Notification System*

Other Access: *None*

Key Words:

CERCLA/SARA support
Chemical hazards
Compliance
Environmental releases
Exposure
Health effects
Monitoring
Program planning
Toxicological effects

ASHDISPOS

System Name: ***Municipal Waste Combustion-Ash Disposal Facilities Data Base*** **Acronym: ASHDISPOS**

Lead Organization Name: *U.S. EPA*
Office of Research and Development/
Florida State University
Environmental Monitoring and Wet Environments Research Program, Center for Biomedical and Toxicological Research and Hazardous Waste Management
CBTR/R-51
Tallahassee, Florida, 32306

Contact Person or Office: *Victor Lambou*
(904) 644-5516

Summary Description: *This data base contains the results of a survey of municipal-waste-combustion-ash (MWCA) disposal facilities and documents the characteristics of 109 MWCA facilities and the waste disposal practices used. The data base also contains limited monitoring data from some facilities.*

RELEVANCE TO LCAS

Applicability to LCA Component: *Inventory analysis, impact assessment*

Specific LCA Category: *Recycle/waste management, background or ambient chemical concentration data*

Comments: *This data base contains information that involves disposal practices for MWCA facilities. The information in the data base is useful for industry level LCAs and is confined to a limited portion of a LCA.*

DATA DESCRIPTION

Data Source: *Municipal-Waste-Combustion-Ash Disposal Facilities*

Data Specificity: *The data are facility-specific to the MWCA facilities.*

Data Collection Purpose: *Trend assessment, regulations/standards,*

Environmental Media: *Water, land, solid waste*

ASHDISPOS

How Data Are Obtained: *Survey of MCWA disposal facilities*

Data Collection Methodology: *The data collection methodology is not available for review within the data base. There are many data collection methods used by each facility.*

Data Age: *The data were collected in 1989 and are not updated.*

Geographic Specificity: *The data base can be sorted by state or facility.*

Indicators of Data Quality: *The data set has been independently audited; the data were collected from nearly 100% of the facilities and are believed to be accurate.*

Confidentiality: *All of the data are available to the public.*

SYSTEM INFORMATION

Accessibility: *The data base is menu-driven but can be used as a command-driven system in the dBase format.*

System Type: *This data base operates on IBM-compatible PC equipment*

Size of Data Base: *Over 10,000 records*

Number of Fields: *Approximately 95 fields*

Data Sortability: *The data fields and the data within the fields are sortable.*

Related Systems: *None*

Other Access: *None*

Key Words: *CERCLA/SARA support*, *Groundwater*, *Landfills*, *RCRA/HWSA support*, *Treatment/disposal*

BLIS

System Name: ***Best Available Control Technology/Lowest Achievable Emission Rate Information System*** **Acronym: BLIS**

Lead Organization Name: *U.S. EPA*
Office of Air Quality Planning and Standards
Mail Drop 13
Research Triangle Park, NC 27711

Contact Person or Office: *Bob Blaszczak*
(919) 541-5432
(FAX) (919) 541-0072
System operator (919) 541-5384

Summary Description: *The BLIS data base contains selected parameters including Reasonable Available Control Technology (RACT), in summary form, from new source permits. The parameters consist of both types and actual amounts of pollutants emitted, control technology and efficiencies, and location of people making the determination. As states submit new determinations, they will be entered onto the BLIS system as well.*

RELEVANCE TO LCAS

Applicability to LCA Component: *Inventory analysis*

Specific LCA Category: *Air emissions from manufacture, use/reuse/maintenance, recycle/waste management.*

Comments: *The information in the data base may be useful to determine limits for new manufacturing sources. The emissions permit level may vary due to the location and the ambient pollution present compared to EPA limits for all industries in that area. The data base is available through the Bulletin Board of the Technical Transfer Network.*

DATA DESCRIPTION

Data Source: *The data are obtained from other government agencies, mainly individual states.*

Data Specificity: *The data are facility-specific.*

BLIS

Data Collection Purpose: *The data are collected for technology development and environmental compliance permitting.*

Environmental Media: *Air*

How Data Are Obtained: *Data are submitted by individual states using the application submitted by permit applicants.*

Data Collection Methodology: *The data collection methodology is not available for review, however, the questionnaire used to obtain the data is publicly available. The number of methods used to collect the data varies by state requirements.*

Data Age: *The data base is currently updated monthly, but there is a several month backlog of data.*

Geographic Specificity: *The data can be sorted by state.*

Indicators of Data Quality: *There is no independent audit for data quality. The states are responsible for verifying the quality of the data used in the permit applications.*

Confidentiality: *All of the data are available to the public.*

SYSTEM INFORMATION

Accessibility: *The data base is menu-driven and accessible with a dial-up modem.*

System Type: *This data base operates on IBM-compatible PC equipment*

Size of Data Base: *Approximately 2,500 records*

Number of Fields: *Approximately 50 fields*

Data Sortability: *The data fields and data within the fields are sortable.*

Related Systems: *None*

Other Access: *The data base may be accessed through the bulletin board feature of the Technology Transfer Network from the RBLC Clearinghouse.*

BLIS

Key Words:

Air emissions
Chemical use
Environmental releases
Exposure
Discharge points
Geographic codes
Manufacturing
Point source

BRS

System Name: ***Biennial Reporting System*** **Acronym: BRS**

Lead Organization Name:
U.S. EPA
Office of Solid Waste
Communications, Analysis, and Budget Division
Information Management Branch
401 M street, SW
Washington, DC 20460

Contact Person or Office:
John Fogarty
(202) 260-7922
FAX (202) 260-0284

Summary Description:
Biennial reports are submitted by the RCRA regulated community on hazardous waste generated, transported, treated, etc. Data are from over 18,000 RCRA hazardous waste sites with the majority from generators. The system also includes waste minimization practices from generators in 37 states. The data are collected from sites that generate 1,000 kg or more of RCRA hazardous waste in any single month, generate 1,000 kg of RCRA acute hazardous waste in a single month or accumulate in any given time, or any site that generates or accumulates at any time more than 100 kg of spill cleanup material contaminated with RCRA acute hazardous waste.

RELEVANCE TO LCAS

Applicability to LCA Component: *Inventory analysis*

Specific LCA Category:
Raw material extraction including imported, manufacture, use/reuse/maintenance, recycle/waste management

Comments:
This data system is useful for LCAs that involve products/processes that produce RCRA hazardous wastes. RCRA wastes managed only in units exempt from RCRA permitting requirements were not consistently collected (More accurate information on these types of facilities are in the National Survey of Hazardous Waste Generators and TSDR Facilities). States used at least three different sets of codes to describe the methods used to treat, store, dispose, or recycle RCRA hazardous wastes. Most states, however, collected the data on individual waste streams at each site, but several states reported only summary format data. Waste is only

reported as a final disposition, there are no storage data. Some states did not include RCRA hazardous wastewaters, because of confusion of the correct interpretation relating to wastewaters. Variations in state requirements also led to conservative estimates of the number of generators.

DATA DESCRIPTION

Data Source: *The data are collected from the states, which in turn collect the data from the qualifying RCRA hazardous waste generating and TSD facilities.*

Data Specificity: *The data are facility-specific.*

Data Collection Purpose: *Program evaluation and analysis, trend monitoring*

Environmental Media: *Air, water, land, solid waste*

How Data Are Obtained: *The data are collected by the states and reported to EPA*

Data Collection Methodology: *The collection methodology is available for review but the methods vary from state to state. The data represent current technology.*

Data Age: *The data have been collected since 1981 and are updated biennially.*

Geographic Specificity: *The data can be sorted geographically by state and sites.*

Indicators of Data Quality: *A systematic quality assurance process is conducted to evaluate state submissions. The data are checked for completeness and internal consistency. The data also underwent evaluation for the largest sites or the top five sites in each state using historical comparison of consistency in the types and quantities of wastes generated and managed and the management methods.*

Confidentiality: *Aggregated data are available in summary reports at site and waste stream levels. Other data may be available upon request.*

BRS

SYSTEM INFORMATION

Accessibility: *The data base is menu-driven and available with a dial-up modem.*

System Type: *This data base operates on IBM-compatible PC equipment and available through a network.*

Size of Data Base: *Over 20,000 records*

Number of Fields: *Over 200 fields*

Data Sortability: *The data fields and the data within the fields are sortable by the user.*

Related Systems: *HWDMS/RCRIS*

Other Access: *None*

Key Words:

Treatment/disposal
Environmental releases
Manufacturing
Point source
Production volume
Transportation

CAIR

System Name: ***Comprehensive Assessment Information Rule Data Base*** **Acronym: CAIR**

Lead Organization Name: *U.S. EPA*
Office of Toxic Substances
Information Management Division
401 M Street, SW
Washington, DC 20460

Contact Person or Office: *Joanne Martin*
(202) 260-0431

Summary Description: *CAIR is intended to reduce or eliminate duplicative industry reporting to EPA. The CAIR data system contains data from the reporting form in 10 physical data files, one file for each reporting section. The data include information on plant site, chemical identification, production processing, production volume, importation volume, physical/chemical properties, environmental fate data, financial information, manufacturing and processing information, waste generation and management, worker exposure, and environmental releases.*

RELEVANCE TO LCAS

Applicability to LCA Component: *Inventory analysis, impact assessment*

Specific LCA Category: *Raw material extraction, manufacture, biological effects and toxicological effects, chemical properties related to environmental fate or effects, chemical modeling related to environmental fate or effects*

Comments: *This data system contains very useful information to conduct LCAs, but much of the information is confidential business information. There are two sets of data available, one is unsanitized and the other is sanitized for public use. However, due to the large number of confidential business information claims, it can take months to obtain sanitized output, thus rendering sanitized data much less usefull. The data are not currently independently audited, and steps are in place to make the next update more standardized. Conversions may be needed to determine the accuracy of the data.*

CAIR

DATA DESCRIPTION

Data Source:	*The data are from industry and manufactures that are required to report their data under 40 CFR Part 704.*
Data Specificity:	*The data are process-specific, industry-specific, and facility-specific.*
Data Collection Purpose:	*The data are collected for risk assessment, compliance, enforcement, and analysis purposes.*
Environmental Media:	*Air, water, land, solid waste*
How Data Are Obtained:	*Data are obtained using a variety of standard methods and estimates and other calculations are provided in the reporting form instructions.*
Data Collection Methodology:	*Data collection methods are not provided in the data base.*
Data Age:	*The data base is currently being updated and new data are being entered. The data represent current technology and have only been collected for the past two years.*
Geographic Specificity:	*The data can be sorted geographically by state, county, facility, and latitude/longitude.*
Indicators of Data Quality:	*The data are not currently independently audited, and steps are in place to make the next update more standardized. Conversions may be needed to determine the accuracy of the data.*
Confidentiality:	*The data are available to the public. There are two versions of data, one is the unsanitized data that contains confidential business information. Selected categories of this data are available publicly by special request. The second version is the sanitized version which contains no confidential business information and is available by request.*

SYSTEM INFORMATION

Accessibility:	*The system is command-driven and is used in a stand-alone system.*
System Type:	*Mainframe*

CAIR

Size of Data Base: *Approximately 1,000 records*

Number of Fields: *Approximately 1,500 fields*

Data Sortability: *The data are sortable by special request.*

Related Systems: *None*

Other Access: *None*

Key Words:

Chemical properties
Chemical use
Economic
Environmental effects
Environmental releases
Exposure
Physical properties
Risk assessment
Soils

CCRIS

System Name: ***Chemical Carcinogenesis Research Information System*** **Acronym: CCRIS**

Lead Organization Name: *CCRIS Representative*
Specialized Information Services
National Library of Medicine
8600 Rockville Pike
Bethesda, MD 20894

Contact Person or Office: *Phillip Wexler*
(301) 496-6531

Summary Description: *CCRIS is a scientifically evaluated and fully referenced data bank, developed and maintained by the National Cancer Institute (NCI), containing carcinogenicity, mutagenicity, tumor promotion, and tumor inhibition test results. Data are derived from studies located via the scanning of primary journals, current awareness tools, and a special core set of sources including a wide range of NCI reports. Each record is based on one chemical and may include data from more than one study. The data fields within each chemical record are arranged by substance identification/use and carcinogenicity/mutagenicity.*

RELEVANCE TO LCAS

Applicability to LCA Component: *Impact assessment*

Specific LCA Category: *Biological and toxicological effects*

Comments: *This data base provides useful information for impact assessment including carcinogenicity, mutagenicity, tumor promotion, and tumor inhibition data.*

DATA DESCRIPTION

Data Source: *Data are derived from studies located via the scanning of primary journals, current awareness tools, and a special core set of sources including a wide range of NCI reports.*

Data Specificity: *The data are chemical-specific.*

CCRIS

Data Collection Purpose: *The data are provided to make the information more easily accessible to the public.*

Environmental Media: *Air, water, land*

How Data Are Obtained: *The data are obtained from studies using widely accepted scientific protocols.*

Data Collection Methodology: *The data collection methodologies are available for review in the data base though bibliographic references. The number of data collection methods vary among the studies. Most of the data are single value measurements.*

Data Age: *The data are updated approximately monthly.*

Geographic Specificity: *The data base cannot be sorted geographically.*

Indicators of Data Quality: *The data are peer-reviewed in the literature, and after the studies are completed by the study sponsor. Information on the data quality is available in the original literature. Approximately 50% of the data fields are complete.*

Confidentiality: *All of the data are available to the public.*

SYSTEM INFORMATION

Accessibility: *The system is menu-driven and available through a dial-up modem.*

System Type: *This data base operates on IBM-compatible PC equipment.*

Size of Data Base: *Approximately 4,300 chemical-specific records*

Number of Fields: *Approximately 55 fields*

Data Sortability: *The data fields can be sorted by the user; however, the data within the fields may not be sortable.*

Related Systems: *None*

Other Access: *CIS, COMPUSERVE, TOXNET,*

CCRIS

Key Words:

Biological
Carcinogenicity
Chemical use
Exposure
Health effects
Mutagenicity

CESARS

System Name: ***Chemical Evaluation Search and Retrieval System*** **Acronym: CESARS**

Lead Organization Name: *Michigan State Department of Natural Resources*
Surface Water Quality Division
Great Lakes and Environmental Assessment Section
Knapp's Office Center
P.O. Box 30028
Lansing, MI 48909

Contact Person or Office: *Bob Sills*
(517) 335-3308

Summary Description: *The Chemical Evaluation Search and Retrieval System provides detailed information and evaluations on a group of chemicals of importance in the Great Lakes Basin. CESARS contains information on toxicity, physical and chemical properties, carcinogenicity, environmental fate, and domestic production with references to the original source of the data.*

RELEVANCE TO LCAS

Applicability to LCA Component: *Impact assessment, and to a limited extent, inventory analysis*

Specific LCA Category: *Biological and toxicological effects, chemical properties related to environmental fate effects, and manufacture.*

Comments: *This data base provides useful information for impact assessment and inventory analysis associated with chemicals of particular importance in the Great Lakes Basin of the U.S.*

DATA DESCRIPTION

Data Source: *Data are derived from a collection of studies in the Great Lakes Basin*

Data Specificity: *The data are chemical-specific.*

Data Collection Purpose: *The data are provided to make the information more easily accessible to the public.*

Environmental Media: *Air, water*

CESARS

How Data Are Obtained: *The data are obtained from literature sources.*

Data Collection Methodology: *The data collection methodologies are available for review in the data base, but the number of methods used for each data point varies from source to source. Most of the data are single value measurements.*

Data Age: *The data are updated on an irregular basis and were last updated in 1992.*

Geographic Specificity: *The data base is geographically specific to the Great Lakes Basin.*

Indicators of Data Quality: *The data are peer-reviewed in the literature, but not by the data base operator. Information on the data quality is available in the original literature.*

Confidentiality: *All of the data are available to the public.*

SYSTEM INFORMATION

Accessibility: *The system is menu-driven.*

System Type: *This data base operates on IBM-compatible PC equipment*

Size of Data Base: *Approximately 194 chemical-specific records*

Number of Fields: *Approximately 185 fields*

Data Sortability: *The data fields can be sorted by the user; however, the data within the fields may not be sortable.*

Related Systems: *None*

Other Access: *CIS, NTIS, CCINFO*

Key Words:

Biological
Chemical properties
Chemical use
Environmental effects
Exposure
Health effects
Physical properties

CHEM-INTELL

System Name: ***Chemical Intelligence Services*** **Acronym: CHEM-INTELL**

Lead Organization Name: Chemical Intelligence Services,
Windsor Court
East Grinstead House
East Grinstead
West Suffix RH 1 1XA
England

Contact Person or Office: *Julie Chatterjee*
44-34-233-5885

Summary Description: *Chem-Intell provides information on manufacturing plants, as well as trade and production figures for over 100 organic and inorganic chemicals. It includes information on manufacturer capacities, processes, feedstocks, quantities and value of import/export chemicals, as well as press releases, company reports, market and industrial surveys.*

RELEVANCE TO LCAS

Applicability to LCA Component: *Inventory analysis*

Specific LCA Category: *Raw material acquisition, manufacture*

Comments: *Output information for the manufacture stage is restricted to production quantities and does not include information on emissions.*

DATA DESCRIPTION

Data Source: *Chemical manufacturers, government agencies*

Data Specificity: *The data are chemical-specific, product-specific, process-specific.*

Data Collection Purpose: *To provide information to industrial clients for marketing or trend monitoring purpose.*

Environmental Media: *Not applicable*

CHEM-INTELL

How Data Are Obtained: *Data are collected from direct correspondence with producers, plant contractors licensors, company reports, press releases, market and industry surveys and a comprehensive range of publications. Information is also obtained directly by customs authorities, international statistical office publications, trade associations, and selected periodicals and reports.*

Data Collection Methodology: *The data collection methodologies are available for review in the data base, but the number of methods used for each data point varies from source to source.*

Data Age: *The data are updated monthly. Trade information is available from 1973 and production data are available from 1981.*

Geographic Specificity: *The data base is geographically specific by country.*

Indicators of Data Quality: *The data are audited for accuracy by the collectors depending on the data source. The parent company is contacted to verify precision of the data to be included in the data base. The data fields are approximately 75% complete.*

Confidentiality: *All of the data are publicly available.*

SYSTEM INFORMATION

Accessibility: *The system is command-driven on a dial-up modem*

System Type: *Mainframe*

Size of Data Base: *Approximately 40,000 records*

Number of Fields: *Approximately 25 fields*

Data Sortability: *The data fields are sortable by special request and the data within the fields can be sorted by the user.*

Related Systems: *None*

Other Access: *DIALOG, DataStar*

CHEM-INTELL

Key Words:

Chemical properties
Chemical use
Economic
Geographic codes
Manufacturing
Physical properties
Processing
Production volume

CUS

System Name: ***Chemical Update System*** **Acronym: CUS**

Lead Organization Name: *U.S. EPA*
Office of Toxic Substances
401 M Street, SW
Washington, DC 20460

Contact Person or Office: *Joanne Martin*
(202) 260-0431

Summary Description: *The Chemical Update System contains confidential data reported by industry as a partial update of the TSCA Inventory. Manufacturers and importers are required to report company information (plant site name, address, DUNS number) and chemical information (CAS number, PMN/Bonafide/TMEA or CCID Assession Number, and production volume) for chemicals that are manufactured or imported in excess of 10,000 pounds in the immediately preceding fiscal year. Polymers, naturally occurring substances, and UVCB's are exempt from reporting requirements. Reporting takes place every four years. Production volumes on the CUS Data base are discrete amounts, rather than ranges found on CICIS.*

RELEVANCE TO LCAS

Applicability to LCA Component: *Inventory analysis*

Specific LCA Category: *Raw material acquisition, manufacture, ,*

Comments: *This data base is chemical specific for amounts manufactured or imported in excess of 10,000 pounds. However only select data categories are available to the public.*

DATA DESCRIPTION

Data Source: *Chemical industries*

Data Specificity: *The data are chemical-specific.*

Data Collection Purpose: *The data are used for regulatory purposes.*

CUS

Environmental Media: *Air, water, land, solid waste*

How Data Are Obtained: *Collected from chemical industries by required reporting forms.*

Data Collection Methodology: *The data collection is based on estimates provided by the reporting entity, but the estimation method is not specified.*

Data Age: *The data are updated every four years. Data from 1990 are currently available.*

Geographic Specificity: *The data base is geographically specific through sorting by city or zip code.*

Indicators of Data Quality: *The data are independently audited for accuracy prior to data entry.*

Confidentiality: *35% of the data fields involving production are removed to retain confidentiality and 20% of the plant site identifications are also removed. Only select data categories are available to the public.*

SYSTEM INFORMATION

Accessibility: *The system is menu-driven on a stand-alone system. Sanitized data are more readily obtained by special request*

System Type: *Mainframe*

Size of Data Base: *Approximately 8,000 to 9,000 chemical records*

Number of Fields: *Approximately 35 fields*

Data Sortability: *The data fields and the data within the fields can be sorted by the user.*

Related Systems: *None*

Other Access: *A sanitized version will be available from RTP (Research Triangle Park) in the near future.*

CUS

Key Words:

Chemical properties
Chemical use
Geographic codes
Manufacturing
Physical properties
Processing
Production properties

"DSOSS"

System Name: ***Data Base and Systems for Optimal Solvent Selection*** **Acronym: "DSOSS"**

Lead Organization Name: *Emission Reduction Research Center*
New Jersey Institute of Technology
138 Warren Street
Newark NJ 07102

Contact Person or Office: *Professor T. Gund*
(201) 596-3669

Summary Description: *"DSOSS" is a comprehensive data base that is under development for about 50 solvents. The data include structures, and physical properties, such as melting point, boiling point, vapor pressure, molecular weight, solubility, etc. Safety and regulatory data including flammability, toxicity, explosive limit, etc. have also been included, as well as handling data, environmental effects, and health data related to humans. The information was compiled from the published literature, from sources available within ERRC member companies, or by computing or extrapolating solvent properties from known thermodynamic data. Data fields will be defined to properly handle such variables. The data base sources include compilations and on-line systems such as STN, Chemical Handbooks, Solvent Guides, and other software programs and books. The STN software on-line system has data bases to search physical, chemical, and toxic properties of solvents.*

RELEVANCE TO LCAS

Applicability to LCA Component: *Impact assessment*

Specific LCA Category: *Biological effects and toxicological effects, chemical properties related to fate and effects*

Comments: *This data base is anticipated to become available to the public late in 1993. The data base may be useful for LCAs that involve solvent use, or disposal.*

"DSOSS"

DATA DESCRIPTION

Data Source: *STN, Chemical Handbooks, Solvent Guides, and other software programs and books.*

Data Specificity: *The data are product-specific (solvents).*

Data Collection Purpose: *Under development for optimum solvent selection in industry applications and for access by information management systems being developed jointly at MIT and NJIT.*

Environmental Media: *Water, land, solid waste, solvent properties*

How Data Are Obtained: *Collected from handbooks, literature, on-line systems*

Data Collection Methodology: *The data collection methodologies are not available for review in the data base. The number of methods used varies for each source in the data base.*

Data Age: *This data base is under development but will be updated semi-annually upon completion.*

Geographic Specificity: *The data may not be sorted geographically.*

Indicators of Data Quality: *The data will be independently audited for accuracy. The data sources are peer-reviewed. The data fields will be 100% complete when the data base becomes publicly available.*

Confidentiality: *All of the data will be publicly available in mid-1994.*

SYSTEM INFORMATION

Accessibility: *The system will be menu-driven.*

System Type: *This data base operates on IBM-compatible PC equipment, and will provide information that can be used with a variety of commercial data base programs (dBase, etc.)*

Size of Data Base: *Approximately 50 records*

Number of Fields: *Approximately 20 to 30 fields*

Data Sortability: *The data fields and the data within the fields can be*

sorted depending on the particular users data base program.

Related Systems: *None*

Other Access: *None*

Key Words: *Biological* *Health effects* *Environmental effects* *Physical/chemical properties*

EDB

System Name: ***Environmental Data Base*** **Acronym: EDB**

Lead Organization Name: *Stockholm Environment Institute*
Tellus Institute - Boston Center
11 Arlington Street
Boston, MA 02116

Contact Person or Office: *Michael Lazarus*
(617) 266-8090

Summary Description: *EDB is an interactive data base of environmental emissions and direct impacts (e.g. emission quantities) resulting from energy production and consumption activities. EDB is a stand-alone data base, but can also be incorporated into an energy planning system (LEAP), enabling users of the combined software to link environmental data with energy scenarios to generate accounts and projections of emissions. EDB contains data gathered from an extensive review of literature and from other sources of compiled emission data.*

RELEVANCE TO LCAS

Applicability to LCA Component: *Inventory analysis*

Specific LCA Category: *Raw material acquisition, use/reuse/maintenance*

Comments: *This data base contains information on the emissions resulting from energy extraction processes (e.g., coal mining) and emissions of household devices (e.g., stoves, oil furnaces, etc.) The data may be useful for estimating emissions associated with energy production or consumption.*

DATA DESCRIPTION

Data Source: *Peer-reviewed literature, results of several U.S. EPA studies, and other data compilations.*

Data Specificity: *The data on energy production or consumption are process-specific.*

EDB

Data Collection Purpose:	*To better incorporate environmental concerns into planning methods.*
Environmental Media:	*Air, water, land, solid waste*
How Data Are Obtained:	*Collected from peer-reviewed literature*
Data Collection Methodology:	*The data collection methodologies are available for review in EDB and also the data source and conversions. EDB also includes the calculation methods.*
Data Age:	*The data files are continuously updated. The latest data is 1993.*
Geographic Specificity:	*EDB data can not be sorted geographically.*
Indicators of Data Quality:	*The data are from open literature, most of which are peer-reviewed. Some of the data are from other sources that have undergone quality assurance reviews. Approximately 25% of the data fields are complete.*
Confidentiality:	*All of the data are publicly available.*

SYSTEM INFORMATION

Accessibility:	*The system is menu-driven on a stand-alone system and must be purchased.*
System Type:	*IBM-compatible PC*
Size of Data Base:	*Approximately 2,000 records.*
Number of Fields:	*Approximately 2,000 to 3,000 data fields (e.g., pointers and coefficients).*
Data Sortability:	*The data fields and the data within the fields can be sorted by the user. However, some of the data may need to be sorted manually to obtain certain details.*
Related Systems:	*EDB is self-contained however it can be incorporated into the Long-range Energy Alternatives Planning System (LEAP) for the prediction of emissions from energy scenarios.*
Other Access:	*None*

EDB

Key Words:

Energy demand
Environmental releases
Health/Safety impacts
Point source
Processing

EFDB

System Name: ***Environmental Fate Data Bases*** **Acronym: EFDB**

Lead Organization Name: *U.S. EPA*
Office of Pollution Prevention and Toxics
Economics, Exposure, and Technology Division
401 M Street, SW, TS779
Washington, DC 20460

Contact Person or Office: *Bob Boething (EPA)*
(202) 260-3910
Phil Howard (Syracuse Research Corporation)
(315) 426-3350

Summary Description: *EFDB consists of four major files with appropriate references, and each of them are available separately. The DATALOG contains about 200,000 records on about 13,000 chemicals. This file indicates where environmental fate and exposure data can be found using 18 different indexing terms (e.g., water solubility, Henry's Law constant, hydrolysis, and ambient monitoring). CHEMFATE contains actual physical property values, rate constants, and monitoring concentrations for approximately 1,700 commercially significant chemicals, including SARA Section 313 TRI Chemicals. BIOLOG, which contains about 44,000 records, indicates sources of microbial toxicity and biodegradation data on approximately 6,500 chemicals. Indexing and searching is allowed on toxicity or biodegradation data; aerobic or anaerobic conditions; pure enzyme, cell free extract, pure culture or mixed culture; source of microorganisms; and whether the metabolism pathway has been studied. BIODEG contains actual experimental results on biodegradation studies for approximately 700 chemicals. Experimental details, such as chemical concentration and rate of degradation, are included.*

RELEVANCE TO LCAS

Applicability to LCA Component: *Impact assessment*

EFDB

Specific LCA Category: *Biological effects and toxicological effects, chemical properties related to environmental fate and effects, chemical modeling related to environmental fate and effects*

Comments: *This data base is comprehensive in its scope and contains useful data for LCAs. The data base will be extremely valuable for determining the environmental fate of chemicals, which is typically the second step of an impact assessment. CIS purchased the CHEMFATE file which is included in their clearinghouse. Syracuse Research Corporation (EFDB developer) handles public access to all of the EFDB files.*

DATA DESCRIPTION

Data Source: *Peer-reviewed literature*

Data Specificity: *The data are chemical-specific.*

Data Collection Purpose: *Environmental assessment under TSCA for risk assessment*

Environmental Media: *Air, water, land, solid waste*

How Data Are Obtained: *Collected from peer-reviewed literature*

Data Collection Methodology: *The data collection methodologies are available for review in the CHEMFATE and BIODEG files but are not available for the others. Data collection methodology varies among the files.*

Data Age: *The data files are updated periodically and the references are updated constantly.*

Geographic Specificity: *CHEMFATE file monitoring data can be sorted geographically and some of the BIODEG file data can be sorted geographically.*

Indicators of Data Quality: *The data are from open literature, most of which are peer-reviewed. The data fields are more than 50% complete.*

Confidentiality: *All of the data are publicly available.*

EFDB

SYSTEM INFORMATION

Accessibility: *The system is menu-driven on a dial-up modem system or purchased as diskettes.*

System Type: *IBM-compatible PC, Mainframe, VAX*

Size of Data Base: *Varies with each file*

Number of Fields: *Varies with each file*

Data Sortability: *The data fields and the data within the fields can be sorted by the user.*

Related Systems: *None*

Other Access: *CIS (CHEMFATE only)*

Key Words: *Biodegradation*, *Environmental fate*, *Environmental transformation rates*, *Physical/chemical properties*

EFG

System Name: *Effluent Guidelines Studies* **Acronym: EFG**

Lead Organization Name: *U.S. EPA*
Office of Water, Office of Science and Technology
Engineering and Analysis Division
401 M Street, SW
Washington, DC 20460

Contact Person or Office: *Eric Strassler*
(202) 260-7120

Summary Description: *EFG studies are a collection of information obtained by OST on an industry-by-industry basis to support the development of technology-based effluent guidelines. The guidelines are designed to control discharges into waterways as a result of industrial processes. Regulations are set forth for both direct and indirect dischargers based on a determination of which pollutants can be removed through current technology. Information includes engineering and economic information of individual plants, supplemented by sampling and analysis of wastewater discharge points and secondary engineering and economic information.*

RELEVANCE TO LCAS

Applicability to LCA Component: *Inventory analysis, impact assessment*

Specific LCA Category: *Raw material extraction, manufacture, background or ambient chemical concentration data.*

Comments: *This data base is comprehensive in its scope and contains useful data for LCAs. Data are currently, or have been, collected on 62 industry groups. However, finished studies for which regulations have been published are not being updated. The data are collected by surveys of industries and/or actual effluent analysis.*

DATA DESCRIPTION

Data Source: *EPA-requested survey of industries and occasionally actual effluent analysis.*

Data Specificity: *The data are facility-specific.*

EFG

Data Collection Purpose: *Develop technology-based regulations.*

Environmental Media: *Water*

How Data Are Obtained: *Collected from various industrial sources*

Data Collection Methodology: *The data collection methodologies are available for review in the data base, but the number of methods used varies for each study in the data base.*

Data Age: *Only 12 current studies are being updated. Once a regulation has been published, the data base is not updated. Some of the projects and technology in the data base may have been superseded by later regulations and methods.*

Geographic Specificity: *The data cannot be sorted geographically.*

Indicators of Data Quality: *The data are independently audited for traceability and representativeness. Quality control procedures for chemical testing are also required. 75% of the data fields are complete.*

Confidentiality: *Most of the data are publicly available, but some is CBI and may only be available in aggregated form.*

SYSTEM INFORMATION

Accessibility: *The system is command-driven on a stand-alone system. Data are only obtained by request.*

System Type: *Mainframe*

Size of Data Base: *Varies with each study*

Number of Fields: *Varies with each study*

Data Sortability: *The data fields and the data within the fields can be sorted by special request.*

Related Systems: *None*

Other Access: *None*

EFG

Key Words:

Compliance
Discharge points
Environmental releases
Manufacturing
Monitoring
Point source
Treatment

"GTOM/YR"

System Name: ***U.S. Gas Turbine O&M Data Base*** **Acronym: "GTOM/YR"**

Lead Organization Name: *Utility Data Institute*
1700 K Street, NW, Suite 400
Washington, DC 20006

Contact Person or Office: *Kathy Brown*
1-(800) 486-3660
(202) 942-8789
FAX
UDI (202) 942-8788

Summary Description: *The GTOM/YR data base contains data from the gas turbine production cost reports from over 450 gas turbine power plants. The data includes operator and plant name, plant year-in-service, installed capacity, annual net generation, total fuel expenses, total non-fuel O&M expenses, number of employees, plant heat rate, total production costs, and current plant capitalization.*

RELEVANCE TO LCAS

Applicability to LCA Component: *Inventory analysis*

Specific LCA Category: *Raw material acquisition, manufacture, ,*

Comments: *This data base contains useful data for inventory analysis involving energy usage and production costs for utilities and gas turbine power plants of industry.*

DATA DESCRIPTION

Data Source: *Data are obtained from FERC Form 1, EIA Form 412, and REA Form 12.*

Data Specificity: *The data are process-specific.*

Data Collection Purpose: *Trend and market assessment*

Environmental Media: *Energy*

How Data Are Obtained: *Collected from various gas turbine power plants required to complete regulatory forms such as FERC Form 1, EIA Form 412, and REA Form 12. The information is obtained from these documents*

"GTOM/YR"

Data Collection Methodology: *The data collection methodologies are not available for review in the data base. There may be more than one data collection methodology used by power plants.*

Data Age: *The data are updated annually.*

Geographic Specificity: *The data can sorted geographically.*

Indicators of Data Quality: *All data are checked for accuracy during data entry. Data submittal is required by law. QA procedures are applied to the data at the time it is collected for submittal to the appropriate government agency. All of the data are reported values which may be estimated or single valued depending on the data field.*

Confidentiality: *All of the data are available by request.*

SYSTEM INFORMATION

Accessibility: *The system is command-driven and only available on diskette.*

System Type: *This data base operates on IBM-compatible PC equipment*

Size of Data Base: *Approximately 450 records*

Number of Fields: *Approximately 66 fields*

Data Sortability: *The data fields and the data within the fields can be sorted within the capabilities of dBase or Lotus formats.*

Related Systems: *U.S. Gas Turbine & Combined-Cycle Power Plants*

Other Access: *UDI*

Key Words: *Economic*, *Geographic codes*, *Manufacturing*, *Processing*, *Production volume*

HSDB

System Name: ***Hazardous Substance Data Bank*** **Acronym: HSDB**

Lead Organization Name: *National Library of Medicine*
Specialized Information Services
8600 Rockville Pike
Bethesda, MD 20894

Contact Person or Office: *Philip Wexler*
(301) 496-6531
(301) 496-1131

Summary Description: *HSDB is a factual, non-bibliographic data bank focusing upon the toxicology of potentially hazardous chemicals. It is enhanced with data from such related areas as emergency handling procedures, manufacturing use information (e.g. U.S. production), pharmacology, monitoring and analysis records, environmental fate, human exposure, detection methods, and regulatory requirements. Data are derived from a core set of standard texts and monographs, government documents, technical reports, and primary journals. HSDB contains complete references for all data sources utilized. HSDB is peer reviewed by the Scientific Review Panel, a committee of experts drawn from the major subject disciplines within the data bank's scope. HSDB is organized by chemical record with nearly 4,200 chemical substance records contained in the file.*

RELEVANCE TO LCAS

Applicability to LCA Component: *Inventory analysis, impact assessment*

Specific LCA Category: *Manufacture, biological effects and toxicological effects, chemical properties related to environmental fate or effects, background or ambient chemical concentration data*

Comments: *This data base contains useful data for inventory analysis and impact assessment. The data base goes through extensive QA and contains a substantial amount of information on topics directly related to LCAs.*

HSDB

DATA DESCRIPTION

Data Source: *Standard texts and monographs, government documents, technical reports, and primary journals.*

Data Specificity: *The data are generic.*

Data Collection Purpose: *Provides a central source of toxicological data.*

Environmental Media: *Air, water, land, solid waste*

How Data Are Obtained: *Collected from various reports, literature, and references.*

Data Collection Methodology: *The data collection methodologies are available for review in the data base through the references.*

Data Age: *The data are updated monthly.*

Geographic Specificity: *The data are not geographically specific.*

Indicators of Data Quality: *Most of the data are reviewed by work groups of scientists. However, a limited number of data statements provided by industry submissions are not reviewed, because they do not readily lend themselves to scientific review. All of the data can be traced to the original published article by references included in the data base. Each data statement has a "review tag" which displays the level of quality review. The data represent single value points.*

Confidentiality: *All of the data are publicly available.*

SYSTEM INFORMATION

Accessibility: *The system is menu-driven on a dial-up modem system.*

System Type: *This data base operates on IBM-compatible PC equipment*

Size of Data Base: *Approximately 4,200 records*

Number of Fields: *Approximately 150 fields*

Data Sortability: *The data fields and the data within the fields can be sorted by user.*

Related Systems: *None*

HSDB

Other Access: *TOXNET*

Key Words:

Emergency handling procedures
Manufacturing use
Pharmacology
Monitoring/analysis
Environmental fate
Human exposure
Detection methods
Regulatory requirements

IRIS

System Name: ***Integrated Risk Information System*** **Acronym: IRIS**

Lead Organization Name: *U.S. EPA*
Office of Research and Development
Office of Health and Environmental Assessment
401 M Street, SW
Washington, DC 20460

Contact Person or Office: *Linda Tuxen*
(202) 260-5949
Phillip Wexler
(301) 496-6531

Summary Description: *The IRIS data base contains summary information related to human health risk assessment. IRIS is the EPA's primary vehicle for communication of chronic health hazard information representing EPA consensus positions following comprehensive review by intra-agency reviews. IRIS is a useful tool for pointing the user to underlying human and/or animal data used to support EPA's opinion. The core of the system is a collection of files that contain hazard identification and dose-response risk information for approximately 643 chemicals. The data are broken into several categories: substance identification/use; Chemical and physical properties; noncarcinogenic assessment -lifetime exposure; carcinogenicity assessment - lifetime exposure; drinking water health advisories/acute toxicity; aquatic toxicity assessment; exposure standards and regulations; and references.*

RELEVANCE TO LCAS

Applicability to LCA Component: *Impact assessment*

Specific LCA Category: *Biological effects and toxicological effects, chemical properties related to environmental fate or effects, chemical modeling related to environmental fate or effects*

Comments: *This data base contains much useful data for impact assessment of human health risk; however, it contains information on only 643 chemicals (1993). All of the data are reviewed by work groups of scientists and represent a consensus of all members.*

IRIS

DATA DESCRIPTION

Data Source: *Government agencies, state agencies, private research institutions, literature*

Data Specificity: *The data are chemical-specific, animal-specific.*

Data Collection Purpose: *Human health risk assessment*

Environmental Media: *Air, water*

How Data Are Obtained: *Collected from various government agencies and published literature*

Data Collection Methodology: *The data collection methodologies are available for review in the data base. The oral and inhalation references doses are determined in a standard format for all chemicals.*

Data Age: *The data are updated monthly.*

Geographic Specificity: *The data are not geographically specific.*

Indicators of Data Quality: *All of the data are reviewed by work groups of scientists and represent a consensus of all members. All of the data can be traced to the original published article by references included in the data base. Telephone numbers of EPA Scientists involved in determining the reference doses are also included.*

Confidentiality: *All of the data are available by request.*

SYSTEM INFORMATION

Accessibility: *The system is command-driven on a dial-up modem system.*

System Type: *This data base operates on IBM-compatible PC equipment*

Size of Data Base: *Approximately 643 records*

Number of Fields: *Over 50 fields*

Data Sortability: *The data fields and the data within the fields can be sorted by special request.*

IRIS

Related Systems: *None*

Other Access: *TOXNET, MEDLARS*

Key Words:

Biological
Drinking Water
Environmental effects
Exposure standards
Exposure regulations
Health effects
Modeling
Physical-Chemical properties

IRPTC

System Name: ***International Register of Potentially Toxic Chemicals*** **Acronym: IRPTC**

Lead Organization Name: *U.S. EPA*
Office of Information Resources Management
Information Management and Service Division
Information Sharing Branch
401 M Street, SW
Washington, DC 20460

Contact Person or Office: *Andrew Battin*
(202) 260-5109

Summary Description: *The International Register of Potentially Toxic Chemicals (IRPTC) is a program activity of the United Nations Environment Program in Geneva. The main objective of the IRPTC is to facilitate access to existing data on the production, distribution, release and disposal of chemicals, and their effects on the environment. The core activity of the IRPTC to achieve this objective is the collection and dissemination of data on chemicals in the form of Chemical Data Profiles. Data profiles are integrated data sets covering a broad spectrum of subject areas related to hazard identification and risk assessment of chemicals. They contain the maximum of relevant information in a minimum of space.*

RELEVANCE TO LCAS

Applicability to LCA Component: *Inventory analysis, impact assessment*

Specific LCA Category: *Raw material extraction, manufacture, use/reuse/maintenance, recycle/waste management, biological effects and toxicological effects, ecosystem effects, chemical properties related to environmental fate or effects, chemical modeling related to environmental fate or effects*

Comments: *This data base is comprehensive in its scope and contains much useful data for LCAs, however, it does not contain any information on pharmaceuticals or radiation. The data are primarily chemical-specific, so facility-specific data are limited.*

IRPTC

DATA DESCRIPTION

Data Source: *Government agencies throughout the world and industry sources.*

Data Specificity: *The data are chemical-specific.*

Data Collection Purpose: *The main objective of the IRPTC is to facilitate access to existing data on the production, distribution, release and disposal of chemicals, and their effects on the environment.*

Environmental Media: *Air, water, land, solid waste*

How Data Are Obtained: *Collected from various government agencies and industrial sources*

Data Collection Methodology: *The data collection methodologies are available for review in the data base, but the number of methods used for each data point varies from source to source.*

Data Age: *The data are updated but not at any scheduled interval but frequently or whenever data are submitted. Data available from the U.S. sources dates back to 1989, and data in the Canadian/Geneva version are more recent.*

Geographic Specificity: *The data may be sorted by country.*

Indicators of Data Quality: *The data are all peer-reviewed, but this review is the responsibility of the submitting sources.*

Confidentiality: *All of the data are available by request.*

SYSTEM INFORMATION

Accessibility: *The system is menu-driven on a stand-alone system. Data are more readily obtained by request. The distribution system of the data base is limited within the U.S., but individual copies of the data may be obtained.*

System Type: *Mainframe*

Size of Data Base: *Approximately 40,000 records*

Number of Fields: *Approximately 28 fields*

IRPTC

Data Sortability: *The data fields and the data within the fields can be sorted by special request.*

Related Systems: *None*

Other Access: *None*

Key Words:

Biological
Chemical properties
Environmental effects
Environmental releases
Test/Analysis methods
Transformation rates

"MCDB"

System Name: ***Manufacturing Census Data Base*** **Acronym: "MCDB"**

Lead Organization Name: *Plastics Technology Magazine*
P.O. Box H
Yardley, PA 19067

Contact Person or Office: *Abby Scheiner*
(800) 743-1060

Summary Description: *This data base contains information from the plastics industries in the areas of injection molding, extrusion, and blow molding. The data are obtained on raw materials used in each process, some intermediate products, and the end product produced by each process. The data represent single value estimates from manufacturers. The data are continually updated through telephone interviews on a 12 to 18 month cycle.*

RELEVANCE TO LCAS

Applicability to LCA Component: *Inventory analysis*

Specific LCA Category: *Raw material acquisition, manufacture,*

Comments: *This data base could be useful in gathering data from the plastics market segment involving raw material acquisition and production rates.*

DATA DESCRIPTION

Data Source: *The data are obtained from telephone interviews with individual plastics manufacturers involved with injection molding, extrusion, and blow molding processes.*

Data Specificity: *The data are product-specific, process-specific, industry-specific, and processing equipment-specific.*

Data Collection Purpose: *To provide market definition for the Plastics Technology Magazine circulation.*

Environmental Media: *Land, Solid waste*

How Data Are Obtained: *Telephone interviews with individual manufacturing plants.*

Data Collection Methodology: *Telephone interviews with individual manufacturing plants.*

"MCDB"

Data Age: *The data base is updated continuously with no information older than 18 months.*

Geographic Specificity: *The data may be manipulated by geographic area.*

Indicators of Data Quality: *The data base is not independently audited to verify the data quality; however, the precision, representativeness, and accuracy may be adequate for the conduct of LCAs with sufficient traceability.*

Confidentiality: *All of the data are publicly available by requests to Plastics Technology Magazine.*

SYSTEM INFORMATION

Accessibility: *The data base is command-driven, but not accessible through a dial-up modem.*

System Type: *This data base operates on IBM-compatible PC equipment*

Size of Data Base: *Over 12,000 records*

Number of Fields: *Approximately 40 fields*

Data Sortability: *The data and the data fields are sortable, with 80% of the data available. Some information on total pounds or end use may not be available.*

Related Systems: *None*

Other Access: *None*

Key Words:

Chemical use
Geographic Codes
Raw materials
Manufacturing
Processing
Production Volume

MINES

System Name: *MINES - DATA* **Acronym: MINES**

Lead Organization Name: *U.S. Bureau of Mines,*
Division of Statistics and Information Services
8010 7th Street, NW
Washington, DC 20241

Contact Person or Office: *Mike McTootle*
(202) 501-9524

Summary Description: *This data base contains information related to mining and acquisition of minerals and metals. The information includes production rates, energy requirements, cost, and other miscellaneous information.*

RELEVANCE TO LCAS

Applicability to LCA Component: *Inventory analysis*

Specific LCA Category: *Raw material acquisition*

Comments: *This data base could be useful in gathering data associated with raw materials acquisition.*

DATA DESCRIPTION

Data Source: *The data are obtained from various industries, manufacturers, government agencies, and journals*

Data Specificity: *The data are product-specific, industry-specific, and metal-specific.*

Data Collection Purpose: *To provide information on mineral and metal production.*

Environmental Media: *Air, land, water*

How Data Are Obtained: *Manufacturers data are used in this system.*

Data Collection Methodology: *The data collection methodologies are available for review in the data base*

Data Age: *The data base is updated, but information on the frequency and age of the data needs to be obtained from the contact.*

MINES

Geographic Specificity: *The data may be manipulated by geographic area.*

Indicators of Data Quality: *The data base is not independently audited to verify the data quality, however, the precision, representativeness, and accuracy are adequate for the conduct of LCAs with sufficient traceability.*

Confidentiality: *All of the data are publicly available.*

SYSTEM INFORMATION

Accessibility: *The data base is menu-driven and accessible with a dial-up modem.*

System Type: *This data base operates on IBM-compatible PC equipment*

Size of Data Base: *Over 10,000 records*

Number of Fields: *Further information on the number of fields needs to be obtained from the contact.*

Data Sortability: *The data and the data fields are sortable with 60-65% of the data available.*

Related Systems: *None*

Other Access: *None*

Key Words:

Environmental releases
Metals
Minerals
Raw materials
Point Source
Processing
Production Volume
Soils

NATICH

System Name: ***National Air Toxics Information Clearinghouse*** **Acronym: NATICH**

Lead Organization Name: *U.S. EPA*
Office of Air Quality Planning and Standards
Emissions Standard Division
Pollutant Assessment Branch
Research Triangle Park, NC 27711

Contact Person or Office: *Vasu Kilaru*
(919) 541-5332

Summary Description: *The National Air Toxics Information Clearinghouse contains air toxics information gathered from EPA/state/local agencies, international, and other Federal agencies. Information is disseminated via the on-line, user-friendly NATICH, through hardcopy reports, and quarterly newsletters. The primary audience is state/local agencies and EPA officials involved with air toxics. Data include regulatory program information, acceptable ambient concentrations, permitting data, ambient air monitoring information, source test data, emissions inventory data, research and methods development data, preliminary EPA risk assessment results, and bibliographic data.*

RELEVANCE TO LCAS

Applicability to LCA Component: *Inventory analysis, impact assessment*

Specific LCA Category: *Manufacture, background or ambient chemical concentration data*, biological effects and toxicological effects

Comments: *This data base is considered useful for conducting LCAs, because of the emissions and ambient air concentration data that are provided. The data are collected from the various states, and the states are responsible for the quality of the data. Because regulations and procedures vary with each state, further investigation would need to accompany use of this data base to assure the quality and methods used are adequate for LCAs.*

NATICH

DATA DESCRIPTION

Data Source: *Data are collected from state agencies that monitor air toxics.*

Data Specificity: *The data are facility-specific, product-specific (SIC codes), and industry-specific.*

Data Collection Purpose: *state and local air toxics program evaluation, regulations and standards, and trend monitoring*

Environmental Media: *Air*

How Data Are Obtained: *Varies from state to state, but the information submitted by the states must meet the format of the data base.*

Data Collection Methodology: *The data collection methodology is available for review within the data base, there are also bibliographic references. The number of data collection methodologies varies by state. The data are listed as single values and are usually measured.*

Data Age: *The system is updated annually, but varies from state to state. The data go back to 1984, but the system has been upgraded several times since then retaining as much information as possible.*

Geographic Specificity: *The data base can be sorted geographically by state, facility, or SIC Code.*

Indicators of Data Quality: *The data are not independently audited for quality, however, the states are responsible for data quality and the requirements vary.*

Confidentiality: *All of the data are available to the public.*

SYSTEM INFORMATION

Accessibility: *NATICH is a menu-driven data base that is accessible with a dial-up modem.*

System Type: *This data base operates on IBM-compatible PC equipment*

Size of Data Base: *Approximately 5,000 records*

Number of Fields: *over 100 fields*

NATICH

Data Sortability: *The data fields and the data within the fields are sortable*

Related Systems: *None*

Other Access: *NTIS*

Key Words:

Biological
Discharge points
Environmental releases
Exposure
Health effects
Monitoring
Test/Analysis methods

ODES

System Name: ***Ocean Data Evaluation System*** **Acronym: ODES**

Lead Organization Name: *U.S. EPA, Office of Water,*
Office of Wetlands, Oceans, and Watersheds.
401 M Street, SW
Washington, DC 20460

Contact Person or Office: *Bob King*
(202) 260-7028
FAX (202) 260-7024
HOTLINE (206) 822-9596 (Tetra Tech, Inc.,)
HOTLINE (703) 841-6109 (American Management Systems)

Summary Description: *ODES was initially developed to provide managers and analysts with marine monitoring data to assist in meeting the 301(h) sewage discharge statutes. The system, which was expanded to house monitoring data for both marine and freshwater supplies, now contains information associated with the 301(h) sewage discharge program, NPDES, ocean dumping, the National Estuary Program, 403c industrial discharge program, Great Lakes Remedial Action Program, and the National Coastal Waters Program.*

RELEVANCE TO LCAS

Applicability to LCA Component: *Inventory analysis, impact assessment*

Specific LCA Category: *Manufacture, use/reuse/maintenance, recycle/waste management, ecosystem effects, chemical properties related to environmental fate or effects, chemical modeling related to environmental fate or effects, background or ambient chemical concentration data.*

Comments: *This data base is useful for conducting LCAs involving mostly marine and estuarine environments. ODES includes information pertaining to water quality, oceanographic descriptions, sediment pollutants, physical/chemical characteristics, biological characteristics, and estuary information. This is useful for select industries where contaminants can be traced to products.*

ODES

DATA DESCRIPTION

Data Source: *Facilities (POTWs) submit relevant information directly to EPA*

Data Specificity: *The data are facility-specific.*

Data Collection Purpose: *Environmental compliance, risk assessment, trend assessment*

Environmental Media: *Water*

How Data Are Obtained: *Facilities are required to report their compliance and status information by the 304(l) of the Clean Water Act.*

Data Collection Methodology: *The data collection methodology is available for review within the data base, including type and actual measurement values.*

Data Age: *The data base is updated biweekly and represents current technology.*

Geographic Specificity: *The data may be sorted by geographic location and monitoring stations.*

Indicators of Data Quality: *The data submitters have final review of data before entry into the system. QA/QC procedures range from intense review of data to statistical scanning depending on the program. Users can access QA/QC reports for all data. 90% of the data fields are complete.*

Confidentiality: *The data are available to the public with few access restrictions.*

SYSTEM INFORMATION

Accessibility: *The data base is menu-driven.*

System Type: *The data base operates on IBM-compatible PC equipment and is also on the EPA mainframe using dial-up modem.*

Size of Data Base: *Over 3 million records*

Number of Fields: *Over 200 fields*

Data Sortability: *The data fields and data within the fields are sortable by*

the user or by special request.

Related Systems: *None*

Other Access: *None*

Key Words:

Biological
Chemical
Compliance
Discharge points
Environmental releases
Environmental effects
Geographic codes
Point source
Sediment
Site characteristics
Surface water

PADS

System Name: *PCB Activity Data Base* **Acronym: PADS**

Lead Organization Name: *U.S. EPA*
Office of Toxic Substances
Chemical Regulation Branch
401 M Street, SW
Washington, DC 20460

Contact Person or Office: *Tony Baney*
(202) 260-3933
FAX (202) 260-1724

Summary Description: *PADS is a user friendly data base system, installed on personal computers at EPA headquarters and the regions. It allows 10 types of searches to quickly access data regarding specific PCB waste handlers. Approximately 4,000 facilities have reported their PCB waste handling activity to the Office of Toxic Substances using EPA Form 7710-53. The requirements for reporting under this system were promulgated by the PCB Notification and Manifesting for PCB Waste Activities Rule of 1989, published in the CFR.*

RELEVANCE TO LCAS

Applicability to LCA Component: *Inventory analysis*

Specific LCA Category: *Recycle/waste management*

Comments: *This data base is useful for conducting LCAs and includes important information on PCB waste handling and transportation activities. Although the information is in a data base, it is only available to the public in hardcopy.*

DATA DESCRIPTION

Data Source: *Various industries including generators, transporters, and disposal facilities*

Data Specificity: *The data are facility-specific.*

Data Collection Purpose: *Environmental compliance*

Environmental Media: *Solid waste*

PADS

How Data Are Obtained: *Facilities are required to report their compliance and status information by submitting EPA Form 7710-53 required by the PCB Notification and Manifesting for PCB Waste Activities Rule of 1989, published in the CFR.*

Data Collection Methodology: *The data collection methodology is available for review within the data base including type and actual measurement values.*

Data Age: *The data base is updated weekly and represents current technology.*

Geographic Specificity: *The data may be sorted by up to ten different categories including geographic.*

Indicators of Data Quality: *The data are not independently audited for traceability, quality, and precision. However, the data are current and use single value reporting. The data fields are 100% completed where applicable.*

Confidentiality: *The data are available to the public in hard copy.*

SYSTEM INFORMATION

Accessibility: *The data base is menu-driven at EPA headquarters and regions.*

System Type: *The data base operates on IBM-compatible PC equipment.*

Size of Data Base: *Over 5,000 records*

Number of Fields: *Over 40 fields*

Data Sortability: *The data fields and data within the fields are sortable by the user or by special request.*

Related Systems: *None*

Other Access: *None*

Key Words: *Compliance*, *Geographic codes*, *Manufacturing*, *Transportation*

PCS

System Name: ***Permit Compliance System*** **Acronym: PCS**

Lead Organization Name:
U.S. EPA
Office of Water Enforcement and Permits
Enforcement Division
Compliance Information and Evaluation Branch
401 M Street, SW
Washington, DC 20460

Contact Person or Office:
Della Ng
(202) 260-8313
FAX (202) 260-7282
Hotline (202) 260-8529

Summary Description:
PCS is a computerized management information system for tracking permit, compliance, and enforcement status for the NPDES program under the Clean Water Act. PCS contains information on more than 63,000 active waste water discharge permits issued to facilities throughout the nation. The Office of Water Enforcement and Permits is responsible for the operation and maintenance of PCS. EPA Regional offices and state users are responsible for entry and quality of the data entered into the system. PCS tracks information about wastewater treatment facilities discharging into navigable waters. Items tracked include facility characteristics, discharge characteristics, compliance schedules, permit conditions, inspections, and enforcement actions. PCS distinguishes between major and minor wastewater treatment facilities, based on the potential threat to human health or the environment. Factors determining a facilities classification status include the discharge amount per day, the wastewater sources, and the population affected by the discharge.

RELEVANCE TO LCAS

Applicability to LCA Component: *Inventory analysis, impact assessment*

Specific LCA Category: *Manufacture, recycle/waste management, biological effects and toxicological effects,*

PCS

Comments: *This data base is useful for conducting LCAs and includes important end-of-pipe discharge information for each facility, but may not be useful for multi-process facilities. Although all major and minor facilities must be permitted, only major facilities must provide complete records to PCS. These number around 7,100. There is substantial information on over 56,000 minor facilities in the US. The collection of latitude/longitude (end-of-pipe) location information is currently under way.*

DATA DESCRIPTION

Data Source: *Wastewater treatment facilities, state agencies and various industries that are required to have a NPDES permit.*

Data Specificity: *The data are facility-specific, process-specific.*

Data Collection Purpose: *Environmental compliance, enforcement, program evaluation, trend monitoring.*

Environmental Media: *Water*

How Data Are Obtained: *Facilities are required to report their compliance and status information by submitting Compliance Schedule Reports and Discharge Monitoring Reports to EPA Regions or delegated states, which enter the information into the system.*

Data Collection Methodology: *The data collection methodology is available for review within the data base including type and actual measurement values.*

Data Age: *The most relevant data would be over the past three years, with data available for the last five years. The data base is updated twice weekly and represents current technology.*

Geographic Specificity: *The data may be sorted by county, state, river basin, and EPA Region. Efforts are currently being undertaken to collect latitude/longitude information for the end-of-pipe locations.*

PCS

Indicators of Data Quality: *The data are independently audited for traceability, quality, and precision. The data are entered by each EPA Region, and quality assurance activities may vary among regions.*

Confidentiality: *The data are available to the public, but must be obtained through EPA. Private contractors or industry must request the information through the Freedom of Information Act (FOIA). Improved public access is in progress with plans to allow access through NTIS and NCC.*

SYSTEM INFORMATION

Accessibility: *The data base is partially menu-driven with some command driven components and is accessible with a dial-up modem.*

System Type: *The data base can be downloaded from the mainframe to IBM-compatible PC equipment.*

Size of Data Base: Approximately 14,000,000 records

Number of Fields: *Approximately 160 fields*

Data Sortability: *The data fields and data within the fields are sortable by the user or by special request.*

Related Systems: *None*

Other Access: *None, plans are currently underway to make the data base accessible through NTIS and NCC*

Key Words:

Biological effects
Chemical concentration
Compliance
Discharge points
Geographic codes
Manufacturing
Monitoring
NPDES permits
Point source
Surface water

PHYTOTOX

System Name: ***Terrestrial Plant Toxicity Data System*** **Acronym: PHYTOTOX**

Lead Organization Name: *U.S. EPA*
Environmental Research Laboratory - Corvallis,
200 SW 35th Street
Corvallis, OR 97333

Contact Person or Office: *Craig MacFarlane*
(503) 754-4670

Summary Description: *PHYTOTOX contains some 138,000 records relating to the biological effects of the application of organic chemicals to terrestrial plants. Both natural and synthetic organic compounds administered to native, crop, or weed plant species have been considered. The records in the data base include information about the effects observed in the experiment and bibliographic references to the source documents from which the data were drawn. PHYTOTOX contains data pertaining to 153 different plant responses to 5,000 different chemicals tested on at least one of 1,500 different plant species. Data were compiled in the University of Oklahoma Department of Botany and Microbiology on literature published between 1928 and 1986.*

RELEVANCE TO LCAS

Applicability to LCA Component: *Impact assessment*

Specific LCA Category: *Biological and toxicological effects*

Comments: *PHYTOTOX is useful for conducting impact assessments for any product that has chemicals emitted to the environment during its lifecycle. Plans have been made by EPA-Duluth, EPA-Corvallis, the Office of Technology Transfer and Regulatory Support, Office of Water, and Office of Solid Waste and Superfund to combine three data bases (PHYTOTOX, TERRETOX, and AQUIRE) into a single data base called ECOTOX. A discussion of ECOTOX is included in the section titled "On-going Studies."*

PHYTOTOX

DATA DESCRIPTION

Data Source: *Published literature*

Data Specificity: *The data are chemical-specific, plant species-specific.*

Data Collection Purpose: *Environmental risk assessment*

Environmental Media: *Land, solid waste*

How Data Are Obtained: *Extracted from published reports plant toxicity studies.*

Data Collection Methodology: *The data base includes a description of how each experiment was setup (stage and part of plants exposed), but not the chemical analysis method. The test methods vary with each study. Multiple records have been created on some plant species and chemical exposure methods.*

Data Age: *The data are updated periodically. The last update was in 1986, except for sulfonylurea added in 1993. The next update is planned as part of the ECOTOX development.*

Geographic Specificity: *The data are not sortable by specific geographic areas.*

Indicators of Data Quality: *The data are from peer-reviewed published literature and 100% of the data fields are complete. No attempt has been made to average data from several investigators on the same species/chemical/test method combination. All of the data are measured.*

Confidentiality: *All of the data are publicly available.*

SYSTEM INFORMATION

Accessibility: *Menu-driven and can be used with a dial-up modem.*

System Type: *Mainframe*

Size of Data Base: *Over 138,000 records*

Number of Fields: *Over 20 fields*

Data Sortability: *The data fields and the data within the fields are user-sortable*

PHYTOTOX

Related Systems: *Plans have been made to combine three data bases (PHYTOTOX, TERRETOX, and AQUIRE) into a single data base called ECOTOX. A discussion of ECOTOX is included in the section titled "On-going Studies."*

Other Access: *CIS, NTIS, University of Oklahoma (John Fletcher, University of Oklahoma, Norman OK 70319)*

Key Words:

Biological effects
Chemical toxicity
Environmental effects
Plant toxicity
Terrestrial plants

PISCES

System Name: ***Power Plant Integrated Chemical Emission Studies*** **Acronym: PISCES**

Lead Organization Name: *Electric Power Research Institute (EPRI)*
3412 Hillview Ave.
P.O. Box 10412
Palo Alto, CA 94303

Contact Person or Office: *Barbara Toole-O'Neil*
(415) 855-1005

Summary Description: *The PISCES data base provides an easily accessible source of data about power generating systems. The data include operational factors, process streams, reported quantities, methodologies used to generate the data, and applicable regulations and health/environmental concerns. The data base has been qualified for accuracy, precision, compatibility and representativeness.*

RELEVANCE TO LCAS

Applicability to LCA Component: *Inventory analysis, impact assessment*

Specific LCA Category: *Manufacture, production fabrication, , chemical properties and modeling related to environmental fate and effects*

Comments: *This data base provides valuable information on power generating systems. The data base will be available through EPRI by the end of calendar year 1993 or early 1994. The data will be available after the user receives permission or completes an application for access to the information from EPRI.*

DATA DESCRIPTION

Data Source: *Published literature*

Data Specificity: *The data are facility-specific and process-specific.*

Data Collection Purpose: *To assist operators of power systems to manage chemical substances at power generating facilities*

Environmental Media: *Air, water, soil, solid waste*

How Data Are Obtained: *Published literature.*

PISCES

Data Collection Methodology: *The data collection methodology is available in the data base and though references within the data base. A methodology table contains data, detailed descriptions of the methods and references is included in the data base. Many records contain multiple methods.*

Data Age: *This data are currently being collected and the data base is updated regularly.*

Geographic Specificity: *The data are sortable by specific geographic areas.*

Indicators of Data Quality: *The data are derived from peer-reviewed literature and are independently audited for precision, accuracy, and traceability. The data fields are 50% complete.*

Confidentiality: *The data base will be available through EPRI by the end of calendar year 1993. The data will be available after the user receives permission or completes an application for access to the information from EPRI.*

SYSTEM INFORMATION

Accessibility: *Menu-driven available through a dial-up modem.*

System Type: *IBM-compatible PC*

Size of Data Base: *Greater than 30,000 records*

Number of Fields: *Varies with data category*

Data Sortability: *The data fields and the data within the fields are sortable.*

Related Systems: *None*

Other Access: *This data base should be available after calendar year 1993.*

Key Words:

Chemical use
Environmental fate
Manufacturing
Power systems
Process streams
Regulations

PPIS

System Name: ***Pesticide Product Information System*** **Acronym: PPIS**

Lead Organization Name: *U.S. EPA*
Office of Pesticide Programs
Program Management and Support Division
Systems Branch
401 M Street, S.W.,
Washington, DC, 20460

Contact Person or Office: *Cheryl Bradley*
(703) 305-5981
Jim Beech
(703) 305-5439

Summary Description: *The PPIS contains information concerning all pesticide products registered in the U.S. It includes registrant name and address, chemical ingredients, toxicity category, brand name, etc. Data on inert ingredients are usually considered confidential and are not included in the data base. Access to the data base must be approved by OPP.*

RELEVANCE TO LCAS

Applicability to LCA Component: *Inventory analysis*

Specific LCA Category: *Manufacture*

Comments: *This data base provides valuable information on the manufacture of pesticide products.*

DATA DESCRIPTION

Data Source: *Pesticide industry*

Data Specificity: *The data are product-specific.*

Data Collection Purpose: *Regulatory compliance*

Environmental Media: *Air, water, soil, solid waste*

How Data Are Obtained: *The data are provided to OPP Information Systems Branch by the pesticide industries.*

Data Collection Methodology: *The data collection methodology is available for review*

PPIS

Data Age: *The data are continually being collected and the data base is updated regularly.*

Geographic Specificity: *The data are not sortable by specific geographic areas.*

Indicators of Data Quality: *The data are not independently audited for precision, accuracy, and traceability, however auditing procedures are used to ensure accurate data entry.*

Confidentiality: *Most of the data are available to the public with the exception of the data on inert ingredients.*

SYSTEM INFORMATION

Accessibility: *Menu-driven available through a dial-up modem.*

System Type: *Mainframe and network*

Size of Data Base: *Approximately 2,000 records*

Number of Fields: *Approximately 100 fields*

Data Sortability: *The data fields and the data within the fields are limited in their sorting capabilities.*

Related Systems: *None*

Other Access: *CERIS system at Purdue University*

Key Words:

Chemical use
Manufacturing
Pesticides
Physical/Chemical Properties
Processing
Product formulation

RCRIS

System Name: ***Resource Conservation and Recovery Information System*** **Acronym: RCRIS**

Lead Organization Name: *U.S. EPA*
Office of Solid Waste and Emergency Response
401 M Street, S.W.,
Washington, DC, 20460

Contact Person or Office: *Lisa Herns*
(202) 260-4697

Summary Description: *RCRIS is currently being implemented to replace the HWDMS as the major system supporting the RCRA Program. RCRIS accommodates new data required by the 1984 Hazardous and Solid Waste Amendments (HWSA). It provides interactive on-line data edit checking and offers additional facilities for processing and reporting. This systems is used to monitor hazardous waste management activities.*

RELEVANCE TO LCAS

Applicability to LCA Component: *Inventory analysis, impact assessment*

Specific LCA Category: *Use/reuse/maintenance, recycle/waste management, and background or ambient chemical concentration data*

Comments: *Compliance reporting of facility specific-data.*

DATA DESCRIPTION

Data Source: *Required reporting under RCRA.*

Data Specificity: *The data are facility-specific.*

Data Collection Purpose: *Environmental compliance and program evaluation*

Environmental Media: *Air, water, soil, solid waste*

How Data Are Obtained: *Extracted from reports on events and actual data. 50% of the data fields are complete.*

Data Collection Methodology: *Fairly standardized reporting format, but varies among event diversity and magnitude.*

RCRIS

Data Age: *The data are continually being collected and the data base is updated quarterly.*

Geographic Specificity: *The data are sortable by specific geographic areas.*

Indicators of Data Quality: *The data are independently audited for precision, accuracy, and traceability.*

Confidentiality: *Only a few select data categories are publicly available.*

SYSTEM INFORMATION

Accessibility: *Menu-driven*

System Type: *Mainframe*

Size of Data Base: *Over 1,000,000 records*

Number of Fields: *Over 50 fields*

Data Sortability: *The data fields and the data within the fields are user-sortable*

Related Systems: *HWDMS*

Other Access: *None*

Key Words:

Compliance
Discharge points
Environmental releases
Geographic codes
Manufacturing
Processing
Point source

REPROTOX

System Name: *Reproductive Toxicology Data Base*

Acronym: **REPROTOX**

Lead Organization Name: *Reproductive Toxicology Center*
Columbia Hospital for Women Medical Center
2425 L Street, N.W.,
Washington, DC, 20037-1485

Contact Person or Office: *Kay Padgett*
(202) 293-5137

Summary Description: *REPROTOX is an online data base that contains information on both developmental and reproductive toxicology in animal models and humans, and in vitro data. REPROTOX includes comprehensive information in textual form, with detailed descriptions of toxic effects of up to 4,000 chemicals, drugs, and agents, including references to primary literature.*

RELEVANCE TO LCAS

Applicability to LCA Component: *Impact assessment*

Specific LCA Category: *Biological effects and toxicological effects, chemical properties related to reproductive effects*

Comments: *This data base may be useful for determining biological or reproductive effects of chemicals. The data base is regularly updated, easily accessible, and includes references for primary data sources.*

DATA DESCRIPTION

Data Source: *Data are collected from government agencies and the chemical industries.*

Data Specificity: *The data are chemical-specific, some product-specific.*

Data Collection Purpose: *To provide information to public and private sector*

Environmental Media: *Not applicable*

How Data Are Obtained: *Extracted from various related books, journals, and reports.*

REPROTOX

Data Collection Methodology: *Methodology included is listed in the literature references and contains various data collection methodologies.*

Data Age: *The data are continually being collected and the data base is updated weekly.*

Geographic Specificity: *None*

Indicators of Data Quality: *The data base is checked for accuracy prior to data being entered on-line etc., however, the data are obtained from peer-reviewed sources and are considered to be adequate for LCA use. The data are generally in the form of measured values.*

Confidentiality: *All of the data are publicly available. Data sources are also referenced in the data base.*

SYSTEM INFORMATION

Accessibility: *REPROTOX is menu-driven and can be used on stand-alone, dial-up modem systems or written requests.*

System Type: *This data base operates on IBM-compatible PC equipment, mainframe*

Size of Data Base: *Approximately 4,000 records*

Number of Fields: *Approximately 5 fields*

Data Sortability: *The data fields and the data within the fields are user-sortable*

Related Systems: *None*

Other Access: *None*

Key Words:

Biological effects
Exposure
Toxicological effects
Human health effects
Laboratory animals
Population, human

RTECS

System Name: ***Registry of Toxic Effects of Chemical Substances*** **Acronym: RTECS**

Lead Organization Name: *U.S. Department of Health and Human Services, Center for Disease Control, National Institute for Occupational Safety and Health (NIOSH)*

Contact Person or Office: *Doris Sweet*
(513) 533-8358
(FAX) (513) 533-8588

Summary Description: *RTECS contains data on the toxic effects of approximately 120,000 chemicals. Each entry contains the CAS name, registry number, synonyms, molecular formula, and one or more toxicity measures. This chemical-specific data source gathers its information from various peer-reviewed journals, reports, and books.*

RELEVANCE TO LCAS

Applicability to LCA Component: *Impact assessment*

Specific LCA Category: *Biological effects and toxicological effects, chemical properties related to environmental fate or effects*

Comments: *This data base is useful for determining toxicity and environmental effects of various chemicals and chemical compounds. The data base is regularly updated and easily accessible, but is only chemical-specific with no geographic-specific capabilities.*

DATA DESCRIPTION

Data Source: *Data are collected from various books, journals, and reports on chemicals. The data are compiled by NIOSH*

Data Specificity: *Chemical-specific*

Data Collection Purpose: *Congressional mandate*

Environmental Media: *Air, water, land*

How Data Are Obtained: *Extracted from various related books, journals, and reports.*

RTECS

Data Collection Methodology: *Methodology included in the data base. The number of methodologies for all data categories are variable.*

Data Age: *The data are continually being collected and the data base is updated quarterly. The most recent update was July 1992.*

Geographic Specificity: *None*

Indicators of Data Quality: *The data base is not audited by a third party for data quality, e.g., accuracy, representativeness, etc., however the data are obtained from peer-reviewed sources and are considered to be adequate for LCA use. The data are generally single-value data and may have been measured or estimated depending upon the methodology.*

Confidentiality: *All of the data are publicly available. Data sources are also referenced in the data base.*

SYSTEM INFORMATION

Accessibility: *RTECS is menu-driven and can be used on stand-alone, dial-up modem or CD-ROM systems.*

System Type: *This data base operates on IBM-compatible PC equipment*

Size of Data Base: *Approximately 16,000 records*

Number of Fields: *Approximately 20 fields*

Data Sortability: *The data fields and the data within the fields are user-sortable*

Related Systems: *None*

Other Access: *DIALOG, TOXNET, CIS, CCINFOLINE, MIC/Karolinska Institute Library and information Center*

Key Words:

Biological effects
Environmental effects
Exposure
Toxicological effects
Human health effects
Physical-chemical properties
Laboratory animals
Population, human

SimaPro

System Name: *SimaPro* **Acronym: SimaPro**

Lead Organization Name: *Pre' Consultants*
Center for Environmental Sciences, Leiden University
Garenmarkt lb
P.O. Box 9518
2300 RA leiden
The Netherlands

Contact Person or Office: *31/(0) 71-277486*
(FAX) 31/(0) 71-277496

Summary Description: *SimaPro is a model used to perform environmental assessments of products and packages. It contains manufacture and production data. The data are collected from various locations in Germany, Sweden, and the Netherlands.*

RELEVANCE TO LCAS

Applicability to LCA Component: *Inventory analysis*

Specific LCA Category: *Raw material extraction, manufacture, recycle/waste management*

Comments: *The updated version of SimaPro (SimaPro 1.1) contains more data than the previous one. The data base was originally designed to be used with the SimaPro LCA modeling program. Further information should also be obtained about the modeling program to fully understand the adequacy of the data base. The data are collected solely from Europe and would be most applicable to European-based LCAs, but could be used to get an estimate of what the energy and emission data would be like for various processes. The limited number of data records (75) is a drawback for users in other industrial fields. Care should be taken when this data base is used for non-European industries.*

DATA DESCRIPTION

Data Source: *Data are collected from chemical, mining, steel, aluminum, plastics, glass, and paper industries; European power plants; and various literature sources.*

SimaPro

Data Specificity:	*The data are product-specific, process-specific, industry-specific, and facility-specific.*
Data Collection Purpose:	*To aid LCI performance using the SimaPro model.*
Environmental Media:	*Air, water, solid waste*
How Data Are Obtained:	*Collected from various industries and literature sources.*
Data Collection Methodology:	*Data collection methodology is not available in the data base. The number of methodologies for all data categories are variable.*
Data Age:	*The data are collected continually and are updated annually.*
Geographic Specificity:	*Limited to the country where the data were collected.*
Indicators of Data Quality:	*The data base is audited by a third party for data representativeness, however, the literature data are obtained from peer-reviewed sources. The data are considered to be representative of those industries in Europe that are included in the data base. The data base was designed to be used with a LCI modeling program with data quality in mind. The data include single-value data, which are measured or estimated, depending upon data collection methodology.*
Confidentiality:	*Only aggregated data summaries are available.*

SYSTEM INFORMATION

Accessibility:	*SimaPro is menu-driven and can be used on stand-alone systems.*
System Type:	*This data base operates on IBM-compatible PC equipment*
Size of Data Base:	*Approximately 75 records*
Number of Fields:	*Approximately 20 fields*
Data Sortability:	*The data fields are user-sortable however the data within the fields are not.*
Related Systems:	*None*

SimaPro

Other Access: *None*

Key Words:

Environmental Releases
Manufacturing
Modelling
Processing
Transportation
Treatment/disposal

STORET

System Name: ***Storage and Retrieval of Water Quality Information*** **Acronym: STORET**

Lead Organization Name: *U.S. EPA*
Office of Information Resource Management
401 M Street, SW
Washington, DC 20460

Contact Person or Office: Louie Holman
(202) 260-7050

Summary Description: *The STORET system assists State and EPA officials in making pollution control decisions by providing a capability to store, retrieve and analyze water quality information. Current emphasis of control decisions are: issuing water quality-based NPDES permits; inclusion of toxic pollutants in water quality standards; evaluating water quality impacts of control programs; and assessing levels of toxic pollutants, including dioxin and other bioaccumulative pollutants in the aquatic biological data, hydrologic data, stream reach data, groundwater data, and other related information.*

RELEVANCE TO LCAS

Applicability to LCA Component: *Inventory analysis, impact assessment*

Specific LCA Category: *Recycle/waste management, and background or ambient chemical concentration data in water, fish tissue, and sediments*

Comments: *STORET contains a great deal of information, however it is not all inclusive in every geographic area. State participation in providing data for STORET is not mandatory.*

DATA DESCRIPTION

Data Source: *Other government agencies, state agencies, industry*

Data Specificity: *The data specificity varies depending on the type of information needed and thus, includes facility-specific, composite, and generic data.*

Data Collection Purpose: *Environmental monitoring and trend monitoring*

STORET

Environmental Media:	*Water*
How Data Are Obtained:	*The data are collected and stored by a variety of groups using different testing methods to obtain results required for their specific data base format.*
Data Collection Methodology:	*The data collection methodology is not available for review.*
Data Age:	*The data represent current technology and are updated weekly. Data collection began in 1960, but most of the data were collected after 1980.*
Geographic Specificity:	*The data can be sorted by county, state, river, station, latitude/longitude, organization and location.*
Indicators of Data Quality:	*The data undergo gross checks for accuracy and determine any aberrant data. The data fields are 75% complete. Data are collected using single values obtained by environmental monitoring.*
Confidentiality:	*The majority of the data are available to the public. A small fraction of the data are not available because of on-going studies or confidential business information.*

STORET

SYSTEM INFORMATION

Accessibility: *STORET is menu-driven and accessible with a dial-up modem. Data are also available as a flat file format to allow the user to sort in any possible manner.*

System Type: *PC, Network through NTIS*

Size of Data Base: *Over 200,000,000*

Number of Fields: *Approximately 30 fields*

Data Sortability: *The data fields and data within the fields are sortable by the user.*

Related Systems: *None*

Other Access: *NTIS*

Key Words:

Climate
Drinking water
Environmental effects
Geographic codes
Geographic coordinates
Groundwater
Monitoring
Soil
Surface Water
Test/analysis methods

TERRETOX

System Name: *Terrestrial Wildlife Toxicity Data System* **Acronym: TERRE-TOX**

Lead Organization Name: *U.S. EPA*
Environmental Research Laboratory - Corvallis
200 SW 35th Street
Corvallis, OR 97333

Contact Person or Office: *Ann Fairbrother*
(503) 754-5706

Summary Description: *TERRE-TOX is a publicly available, electronic, non-bibliographic, data base that contains toxicity data on terrestrial wildlife. TERRE-TOX contains published information on the toxicity of anthropogenic substances to terrestrial animals. The species are limited to wildlife, bees, earthworms, and laboratory rodents where the substance involved is likely to affect wildlife. The studies included involve acute toxicity, behavior, reproduction, physiological, and biochemical responses.*

RELEVANCE TO LCAS

Applicability to LCA Component: *Impact assessment*

Specific LCA Category: *Biological and toxicological effects on terrestrial vertebrates*

Comments: *Plans have been made by EPA-Duluth, EPA-Corvallis, the Office of Technology Transfer and Regulatory Support, Office of Water, and Office of Solid Waste and Superfund to combine three data bases (PHYTOTOX, TERRE-TOX, and Aquire) into a single data base called ECOTOX. A discussion of ECOTOX is included in the section titled "On-going Studies."*

DATA DESCRIPTION

Data Source: *Published literature.*

Data Specificity: *The data are chemical-specific and wildlife species-specific.*

TERRETOX

Data Collection Purpose: *Environmental risk assessment*

Environmental Media: *Land*

How Data Are Obtained: *Extracted from published reports on wildlife toxicity studies.*

Data Collection Methodology: *The data collection methodology is available for review. Most of the tests follow the standard LD_{50} format, but other test methodologies are also included in the data base.*

Data Age: *The data represent current technology and were last updated in 1989. The next update is planned as part of the ECOTOX development.*

Geographic Specificity: *The data can not be sorted geographically.*

Indicators of Data Quality: *The data are from peer-reviewed literature. The data fields are 50% complete. Each data point reported represents a single value.*

Confidentiality: *Data are available to the public.*

SYSTEM INFORMATION

Accessibility: *TERRE-TOX is menu-driven and accessible with a dial-up modem.*

System Type: *Mainframe*

Size of Data Base: *about 1,000 records*

Number of Fields: *Approximately 20 fields*

Data Sortability: *The data fields and data within the fields are sortable by the user or by request. The data may also be sorted by CAS# or species.*

Related Systems: *None*

Other Access: *NTIS*

TERRETOX

Key Words: *Biological effects*
Chemical toxicity
Environmental effects
Wildlife toxicity
Terrestrial wildlife

TRI

System Name: ***Toxic Chemical Release Inventory System*** **Acronym: TRI**

Lead Organization Name: *U.S. EPA*
Office of Toxic Substances
Information Management Division
401 M Street, SW
Washington, DC 20460

Contact Person or Office: *Steven Newburg-Rinn (EPA users including contractors, states, and grantees)*
(202) 260-3757
(Non-EPA users should contact the National Library of Medicine (NLM) at (301) 496-6531)
Help Center (202) 260-9419
Fax (202) 260-4655

Summary Description: *TRI contains all non-trade secret data submitted to EPA under SARA for over 300 toxic chemicals and chemical categories listed by the Agency. Data include chemical identity, amount of on-site users, releases and off-site transfers (including POTW), on-site treatment, and minimization/prevention actions. The data are obtained from the Form R submissions by various manufacturers and applicable industries.*

RELEVANCE TO LCAS

Applicability to LCA Component: *Inventory analysis*

Specific LCA Category: *Manufacture (import and production emissions), recycle/waste management (including treatment)*

Comments: *The data are useful for LCA inventory analysis, but may not be useful for multi-process facilities. The information in the system includes the names, addresses, and public contacts of plants manufacturing, processing, or using the reported chemicals, the maximum amount of toxic chemicals stored, the estimated quantity emitted into the air, discharged into bodies of water, injected underground or released to land, methods used in waste treatment and their efficiency, and information on the transfer of chemicals off-site for treatment or disposal. Although the information is useful for LCAs, the measurement values may be measured or estimated, with broad ranges for*

smaller manufacturers. Each data category should be individually analyzed for usefulness in inventory analysis.

DATA DESCRIPTION

Data Source: *The data are required to be submitted by applicable industries and manufacturers.*

Data Specificity: *The data are facility-specific. Product- and industry-specific information is available upon request.*

Data Collection Purpose: *Industry oversight, risk assessment, compliance/enforcement, trend monitoring*

Environmental Media: *Air, land, water, solid waste*

How Data Are Obtained: *Data are obtained from the EPA FORM R (Toxic Chemical Release Inventory Reporting Form)*

Data Collection Methodology: *The data collection methodology is available for several data categories. Estimated data also use prescribed methods.*

Data Age: *Data have been collected annually since 1987 and represent current technology, including the waste minimization technologies. Data are updated continually on EPA mainframe and semiannually on NLMs TOXNET.*

Geographic Specificity: *The data can be sorted by state, county, latitude/longitude, facility, etc.*

Indicators of Data Quality: *The data are independently audited to determine accuracy and precision of reported information.*

Confidentiality: *Data are available to the public, however, Confidential Business Information is "sanitized" prior to release.*

SYSTEM INFORMATION

Accessibility: *TRI is menu-driven and accessible with a dial-up modem. The data are accessible through TOXNET, NTIS, GPO, public library microfiche collections, and EPA's annual published report (summary of data submitted.*

TRI

System Type: *This data base operates on IBM-compatible PC equipment on a local area network.*

Size of Data Base: *over 246,000 records*

Number of Fields: *Approximately 209 fields*

Data Sortability: *The data fields and data within the fields are sortable by the user or by request. The NLM version has menus and offers search (Boolean)/sort features, as well as calculation and report generation capabilities.*

Related Systems: *None*

Other Access: *TOXNET, NCC, NTIS, GPO*

Key Words:

Chemical Use
Environmental releases
Geographic codes
Groundwater
Non-point source
Point source
Soil
Surface water
Storage

WATSTORE

System Name: ***Water Data Storage/Retrieval System*** **Acronym: WATSTORE**

Lead Organization Name: *U.S. Geological Survey*
437 National Center
Reston, VA 22092

Contact Person or Office: *Tom York*
(703) 648-5659

Summary Description: *WATSTORE contains location, chemical, and flow information on surface and groundwater to support program staff. It is designed to help USGS decision-makers survey, assess, and report on the status of the Nation's waters. It includes information on streamflow for over 30,000 sites, peak flow for 23,000 sites, chemical analysis of surface and groundwater quality and sediment concentration for 300,000 sites, and an inventory and descriptive information about groundwater at 1,000,000 sites.*

RELEVANCE TO LCAS

Applicability to LCA Component: *Impact assessment*

Specific LCA Category: *Background or ambient chemical concentration data*

Comments: *The data are useful for LCA impact assessment for gathering data on surface or groundwater conditions and provide a baseline for environmental monitoring of local water sources*

DATA DESCRIPTION

Data Source: *Government agencies*

Data Specificity: *The data are site-specific.*

Data Collection Purpose: *Trend analysis, monitoring*

Environmental Media: *Water*

How Data Are Obtained: *Sampling programs*

Data Collection Methodology: *The data collection methodology is not documented in the data base and varies for each test method. Input into the system follows a specified format, which is available, but*

	data collection methods vary and are not available in the system.
Data Age:	*Data have been added in 1993 and represent current technology.*
Geographic Specificity:	*The data can be sorted by state, county, latitude/longitude, facility, etc.*
Indicators of Data Quality:	*The data are not independently audited to determine accuracy and precision of reported information. Over 50% of the data fields are complete and represent single values.*
Confidentiality:	*Data are available to the registered users.*

SYSTEM INFORMATION

Accessibility:	*WATSTORE is available in a menu-driven version for PC and a command-driven version for mainframe.*
System Type:	*This data base operates on IBM-compatible PC equipment, mainframe*
Size of Data Base:	*over 1,000,000 records*
Number of Fields:	*Number of fields not available*
Data Sortability:	*The data fields and data within the fields are sortable by the user or by request.*
Related Systems:	*None*
Other Access:	*None*

Key Words:

Geographic coordinates
Groundwater
Monitoring
Sediment
Site characteristics
Surface water

WBS

System Name: ***EPA Section 305 (b) Waterbody System*** **Acronym: WBS**

Lead Organization Name: *U.S. EPA*
Office of Wetlands, Oceans, and Watersheds
401 M Street, SW
Washington, DC 20460

Contact Person or Office: *Jack Clifford*
(202) 260-3667

Summary Description: *WBS contains state-reported information on the water quality status of specific waterbodies. States input data including causes, sources, and monitoring basis.*

RELEVANCE TO LCAS

Applicability to LCA Component: *Impact assessment*

Specific LCA Category: *Background or ambient chemical concentration data*

Comments: *Data contained in WBS lists contamination and discharges into specific waterbodies but it does not specifically identify the source.*

DATA DESCRIPTION

Data Source: *State agencies*

Data Specificity: *The data are chemical-specific.*

Data Collection Purpose: *Environmental assessment of waterbodies*

Environmental Media: *Water*

How Data Are Obtained: *Collected from various state agencies*

Data Collection Methodology: *The data collection methodologies are available for review in the data base, but the methods used vary from source to source.*

Data Age: *The data are updated biannually.*

Geographic Specificity: *The data may be sorted by state, county, EPA ecoregion, and latitude/longitude for lakes.*

WBS

Indicators of Data Quality: *The data are independently audited for precision and accuracy. The data fields are 50% complete. The data are measured single values.*

Confidentiality: *All of the data are publicly available.*

SYSTEM INFORMATION

Accessibility: *The system is menu-driven on a stand-alone system.*

System Type: *This data base operates on IBM-compatible PC equipment*

Size of Data Base: *Approximately 2,200,000 records*

Number of Fields: *Approximately 80 fields*

Data Sortability: *The data fields are not sortable but the data within the fields are sortable.*

Related Systems: *None*

Other Access: *None*

Key Words: *Biological*, *Discharge points*, *Exposure*, *Point source*, *Surface water*

WHOWMO

System Name: ***International Air Data Base*** **Acronym: WHOWMO**

Lead Organization Name: *U.S. EPA*
Office of Research and Development
Mail Drop 80A
Research Triangle Park, NC 27711

Contact Person or Office: *Gardner Evans*
(919) 541-3887

Summary Description: *This system is an international data base containing ambient data from the World Health Organization (WHO) and precipitation data from the World Meteorological Organization (WMO)*

RELEVANCE TO LCAS

Applicability to LCA Component: *Impact assessment*

Specific LCA Category: *Ecosystem Effects (acid rain, nitrates, sulphur, pH, conductivity), background or ambient chemical concentration data*

Comments: *The data are limited to precipitation chemistry data and include information on sulfur, nitrates, and conductivity data. Some restrictions are in place for use and distribution of the data.*

DATA DESCRIPTION

Data Source: *The data from the U.S. are derived from the AIRS data base and the foreign data are from a variety of local and national organizations.*

Data Specificity: *The data are mostly generic except for some of the local information which may be geographically specific. (See also AIRS)*

Data Collection Purpose: *Environmental Monitoring by EPA/WHO/WMO, trend assessment*

Environmental Media: *Water, Air*

WHOWMO

How Data Are Obtained: *Standard formats are used for data entered into the system. Data are obtained from AIRS, and foreign local and national data bases.*

Data Collection Methodology: *The data collection methodology varies depending on whether the sources are U.S. or foreign-based. Approximately 75% of the data fields are complete.*

Data Age: *Data have been collected since 1972. The data are updated weekly/biweekly and represent current technology.*

Geographic Specificity: *The data are geographically specific and can be sorted by a variety of location factors.*

Indicators of Data Quality: *The data are independently audited to determine accuracy and precision of reported information. Annual reviews of data are also conducted to determine any outlying information to be further scrutinized.*

Confidentiality: *All of the U.S.-based information is available to the public, and a majority of the foreign data are available to the public. However, some of the foreign data may have restricted distribution until approved by the foreign governing entity, which may also impose publication restrictions.*

SYSTEM INFORMATION

Accessibility: *The system is command driven.*

System Type: *Mainframe*

Size of Data Base: *Several thousand*

Number of Fields: *Approximately 10-20 fields*

Data Sortability: *The data fields and data within the fields are sortable by special request.*

Related Systems: *None*

Other Access: *None*

WHOWMO

Key Words:

Air
Climate
Geographic codes
Geographic coordinates
Monitoring
Weather

CHAPTER 3
BIBLIOGRAPHIC DATA BASE SUMMARY

A total of forty bibliographic data sources were identified which may provide useful information to the LCA practitioner. These data sources were selected by reviewing Gale's Directory of On-line Data Bases, as well as during the process of identifying the non-bibliographic data bases for review. Selection criteria for data bases included: availability in English, contain primarily U.S. data, require minimal access or subscription fees, and are being updated with regular frequency. Brief abstracts were prepared for each bibliographic data base. The contents of each data base are summarized by keywords along with information concerning the age of the data base, update frequency, and the availability of abstracts in Table 4.

Data sources in this section range from worldwide literature citations on the effects of acid rain (Acid Rain) to literature citations on the manufacture of ceramics (World Ceramics Abstracts). Data bases containing citations on energy are prominent, with 25% (10 data bases) of the data sources containing information on some aspect of energy generation or use. The largest of the energy-related data bases is the Energy Science & Technology data base from the U.S. Department of Energy (DOE), which contains over 2.6 million literature citations to all unclassified scientific and technical information processed by the DOE Office of Scientific and Technical Information in Oak Ridge, Tennessee. Table 4 divides energy into subcategories of alternative energy, electric power, coal technology, and petroleum.

Data bases oriented towards toxicology are also numerous (8 data bases). The most comprehensive of the toxicological data bases is 5009 Toxline, a data base managed by the U.S. National Library of Medicine with over 1.6 million literature citations in areas of toxicology, including chemicals and pharmaceuticals, pesticides, environmental pollutants, mutagens, and teratogens.

More specialized data bases are also covered in this Chapter which may provide useful information to the LCA practitioner. For instance, Ecomine, a data base from the French Bureau of Geological Research and Mines, contains 18,000 worldwide literature citations on the coal, gas, and mineral industries. The Crop Protection Chemicals Reference contains the complete text of labeling information for approximately 600 agricultural pesticide products, including Material Safety Data Sheets for each product. Another example of a more

TABLE 4. BIBLIOGRAPHIC DATA BASES ORGANIZED BY GENERAL TOPIC[a]

General Topic	Page No.	Bibliographic Data Base	Data Age	Abstract Avail. (Y/N)	Update Frequency
Acid Rain	123	Acid Rain	1984-Date	Y	
Agricultural Chemicals	126	PESTDOC	1968-Date	N	8x/yr
Agriculture	123	Agricola	1970-Date	Y/N	Monthly
Agriculture	124	Biological & Agricultural Index	1983-Date	N	Biweekly
Alternative Energy	129	EBI	1919-Date	Y	Periodically
Alternative Energy	130	ENERGYLINE	1971-Date	Y	Monthly
Alternative Energy	130	EST	1974-Date	Y	Bimonthly
Alternative Energy	129	Energy Information Data Base	1967-Date	Y	Monthly
Alternative Energy	131	Environmental Bibliography	1973-Date	N	Bimonthly
Alternative Energy	135	POWER	1970-Date	N	3x/yr
Biochemistry	133	NAPRALERT	1975-Date	N	6x/yr
Biology	124	Biological & Agricultural Index	1983-Date	N	Biweekly
Chemical Hazards	125	CSNB	1981-Date	Y	Monthly
Chemical Industry	125	CIN	1974-Date	Y	Weekly
Chemical Toxicity	126	DSHH-HEF	1984-Date	Y	Weekly
Chemical Toxicity	128	EMTOX	1974-Date	Y	Monthly
Coal Technology	125	Coal Data Base	1978-Date	Y	Monthly
Coal Waste Management	125	Coal Data Base	1978-Date	Y	Monthly
Electric Power	127	EDF-DOC	1972-Date	Y	Monthly
Electric Power	130	EST	1974-Date	Y	Bimonthly
Electric Power	130	ENERGYLINE	1971-Date	Y	Monthly
Electric Power	129	EBI	1919-Date	Y	Periodically
Electric Power	128	EPD	1972-Date	N	Monthly
Electric Power	131	Environmental Bibliography	1973-Date	N	Bimonthly
Electric Power	135	POWER	1970-Date	N	3x/yr
Environmental Pollution	135	Pollution Abstracts	1970-Date	Y	6x/yr
Environmental Pollution	126	DHSS-HEF	1984-Date	Y	Weekly
Environmental Pollution	131	Enviroline	1971-Date	Y	Monthly
LCA Studies	142	WICE	1993-Date	Y	
Legislation/Regulations	137	Toxic News	Current	Y	Daily
Legislation/Regulations	132	Food Science & Technology Abstracts	1969-Date	Y	Monthly
Legislation/Regulations	134	PSTA	1981-Date	Y	6x/yr

General Topic	Page No.	Bibliographic Data Base	Data Age	Abstract Avail. (Y/N)	Update Frequency
Legislation/Regulations	129	Energy Information Data Base	1967-Date	Y	Monthly
Legislation/Regulations	126	PESTDOC	1968-Date	N	8x/yr
Legislation/Regulations	125	CSNB	1981-Date	Y	Monthly
Legislation/Regulations	140	WASTEINFO	1973-Date	Y	Monthly
Metal	141	World Aluminum Abstracts	1968-Date	Y	Monthly
Mining	141	World Aluminum Abstracts	1968-Date	Y	Monthly
Mining	127	ECOMINE	1984-Date	Y	Monthly
Natural Resources	131	Enviroline	1971-Date	Y	Monthly
Pesticides	126	Crop Protection Chemical Reference	Current	N	Monthly
Petroleum	132	IPABASE	1985-Date	Y	Quarterly
Petroleum	139	TULSA	1981-Date	Y	Weekly
Regulation	140	WASTEINFO	1973-Date	Y	Monthly
Resource Use and Emissions	131	Environmental Bibliography	1973-Date	N	Bimonthly
Technology	133	NTIS Bibliographic Data Base	1964-Date	Y	Biweekly
Toxicology	131	Environmental Bibliography	1973-Date	N	Bimonthly
Toxicology	137	TOXLINE	1965-Date	Y/N	Monthly
Toxicology	135	Pollution Abstracts	1970-Date	Y	6x/yr
Toxicology	126	DHSS-HEF	1984-Date	Y	Weekly
Toxicology	137	TOXLINE	1965-Date	Y/N	Monthly
Toxicology	128	EMTOX	1974-Date	Y	Monthly
Toxicology	126	PESTDOC	1968-Date	N	8x/yr
Toxicology	132	Food Science & Technology Abstracts	1969-Date	Y	Monthly
Transportation	127	ECOMINE	1984-Date	Y	Monthly
Transportation	131	ENVIROLINE	1971-Date	Y	Monthly
Transportation	139	TULSA	1981-Date	Y	Weekly
Transportation	130	ENERGYLINE	1971-Date	Y	Monthly
Transportation	125	Coal Data Base	1978-Date	Y	Monthly
Transportation	125	CSNB	1981-Date	Y	Monthly
Transportation	132	IPABASE	1985-Date	Y	Quarterly
Waste Management	140	Waste Mgmt. & Resource Recovery	1971-Date	Y	Biweekly

[a] See Section 2.1 for Description of Individual Bibliographic Data Bases. Data base acronyms are defined in Appendix A.

specialized data base is Packaging Science and Technology Abstracts, which is a data base from the International Food Information Service containing 30,000 worldwide citations on packaging technology. To identify topic areas of interest refer to Table 4.

3.1 Bibliographic Data Sources

ACID RAIN

Reed Reference Group
Phone (908) 665-6688
800-322-5006

Content: Contains more than 4000 worldwide literature citations on the sources, effects, monitoring, aquatic and terrestrial systems impacts, control technologies, health issues of acid rain. Sources include journals, conference proceedings, books, and technical reports from educational institutions, corporations, and governments.

Availability: ESA/IRS(109), DIMDI, Magnetic Tape.

AGRICOLA

U.S. National Agricultural Library
Phone: (301) 504-6813
Fax: (301) 504-7473

Content: Contains more than 2.8 million literature citations in agriculture and related areas acquired by the National Agricultural Library (NAL) and cooperating institutions such as land grant institutions, the NAL Food and Nutrition Information Center, and the Arid Lands Information Center. Includes agricultural economics, agricultural production, animal sciences, chemistry, entomology, food and human nutrition, forestry, natural resources, pesticides, plant science, soils and fertilizers, and water resources.

Availability: BRS Information Technologies, BRS/After Dark, BRS/COLLEAGUE, Knowledge Index, DIMDI, Life Science Network, OCLC FirstSearch Catalog, and OCLC EPIC.

BIOLOGICAL & AGRICULTURAL INDEX

H.W. Wilson Company
Phone: (212) 588-8400
800-367-6770

Content: Contains more than 275,000 citations in more than 225 English-language periodicals on biology and agriculture. Covers zoology, veterinary medicine, soil science, plant pathology, physiology, nutrition, microbiology, marine biology, limnology, genetics and cytology, horticulture, forestry, food science, entomology, environmental sciences, ecology, biology, biochemistry, botany, animal husbandry, agricultural research, agricultural engineering, agricultural economics, and agricultural chemicals.

Availability: WILSONLINE, BRS Information Technologies, OCLC EPIC (planned), OCLC FirstSearch Catalog (planned), BRS/After Dark, BRS/COLLEAGUE, CD-ROM, Magnetic Tape.

CHEMICAL BUSINESS NEWSBASE (CBNB)

Royal Society of Chemistry (RSC)
Phone: 0223 420066
Fax: 0223 423623

Content: Contains more than 215,000 citations to European, U.S. and Japanese chemical industry and related agricultural, food processing, electronics, pharmaceutical, and textile industries. Includes such topics as legal and regulatory issues, plant commissioning, upgrading and capacity reports, chemical costs, production, and supply and demand. Sources include 140 core European periodicals, annual reports and other company literature, press releases, government reports, newspapers, and market research reports.

Availability: Data-Star, DIALOG, Knowledge Index, PFDS Online, Life Science Network, ESA/IRS.

CHEMICAL INDUSTRY NOTES (CIN)

Chemical Abstracts Service (CAS)
Phone: (614) 447-3600
800-848-6533
Fax: (614) 447-3713

Content: Contains approximately 900,000 citations to the worldwide business literature on the chemical industry. Topics covered include production, pricing, sales, facilities, products, processes, corporate and government activities, and people. Sources include about 80 trade journals, newspapers, and newsletters worldwide.

Availability: STN International, Batch Access.

CHEMICAL SAFETY NEWSBASE (CSNB)

Royal Society of Chemistry (RSC)
Phone: 0223 420066
Fax: 0223 423623

Content: Contains more than 27,000 worldwide citations to occupational hazards in the chemical industry and laboratories. Covers chemical reactions, biological hazards, transportation and storage of chemicals, waste management, legislation and standards for industrial chemical usage. Sources include more than 250 occupational health, chemical, biochemical, toxicological, and medical journals, books, reports, videos, and organizations.
Availability: Data-Star, DIALOG, ESA/IRS, ORBIT, STN International, Life Science Network, Diskette, Magnetic Tape.

COAL DATA BASE

IEA Coal Research
Phone: 081-780 2111
Fax: 081-828 9508

Content: Provides more than 180,000 worldwide literature citations on coal science and technology including the coal industry, reserves and exploration, mining, preparation, transport and handling, properties, processing, combustion, power generation, waste management, environmental aspects, products, health and safety, economics, and policy and management.

Availability: BELINDIS, CAN/OLE, QL Systems Limited, CD-ROM.

CROP PROTECTION CHEMICALS REFERENCE

John Wiley & Sons, Inc.
Phone: (212) 850-6194

Content: Contains the complete text of actual label information for approximately 600 agricultural pesticide products. Also includes Material Safety Data Sheets (MSDS) for each product.

Availability: Purdue University, National Pesticide Information Retrieval System.

DERWENT CROP PROTECTION FILE (PESTDOC)

Derwent Publications Ltd.
Phone: 071-242 5823
Fax: 071-405 3630

Content: Contains more than 230,000 worldwide journal citations on pesticides, plant protection, agricultural chemicals, chemistry, toxicology, legislation, use in control, and environmental effects.

Availability: ORBIT.

DHSS-HEF

Great Britain Department of Health
Phone 071-972-2162

Content: Contains more than 26,600 literature citations relating to environmental, chemical, toxicological, and food and nutritional issues. Covers government and regulatory authorities, carcinogenicity and mutagenicity, chemicals in food (e.g., additives, contaminants, preservatives), consumer products, pesticides, industrial chemicals, air and water pollution, cosmetics, toxicology, and health consequences of smoking, radiation, and noise.

Availability: Data-Star.

ECOMINE

France Bureau de Recherches
Geologiques et Minieres (BRGM)
Phone: 38 643434
Fax: 38 643518

Content: Contains more than 18,000 worldwide literature citations on the coal, oil, gas, and mineral industries covering costs, reserves, feasibility studies, production, consumption, and import/export data on raw materials, metal and mineral market and trade data, legislation, and the activities of mining companies.

Availability: Questel, Batch Access.

EDF-DOC

Electricite de France (EDF)
Phone: 01 47654321
Fax: 01 47653124

Content: Contains more than 400,000 citations to the technical, economic, commercial, and social aspects of electric power generation, transportation, sale, energy sources, electric machines, electric power stations and nuclear plants, electric transmission and distribution, calculation and exploitation of electric networks, computer systems and equipment, environmental protection, pollution and waste disposal, applications of lighting, heating and air

conditioning, energy organization and management of the field, sources of information, meteorology, biology, earth sciences, materials properties and testing.

Availability: ESA/IRS, Questel.

ELECTRIC POWER DATABASE (EPD)

Electric Power Research Institute (EPRI)
Phone: (415) 855-2411
Fax: (415) 855-2954

Content: Contains information on more than 33,000 on-going and completed research and development projects related to electric power generation, transmission, distribution, hydroelectric power, fossil fuels, nuclear power, solar power, transmission, economics, advanced power systems, and environmental assessment. Provides work description, start and completion dates, dollars allocated, results, and project reports. Covers EPRI, U.S. and Canadian utilities, EPRI contractors, the Canadian Electrical Association, the Central Research Institute of the Japanese Electric Power Industry (CRIEPI), and the Mexican Instituto de Investigaciones Electricas. Also includes 8000 abstracts of all EPRI technical reports.

Availability: DIALOG, CAN/OLE, CD-ROM.

EMTOX

Elsevier Science Publishers
Phone: 020 5803911
Fax: 020 5803222

Content: Contains approximately 375,000 worldwide literature citations from 3500 periodicals on drug toxicity, environmental toxicology, pharmaceutical toxicology, foods, food additives and contaminants, cosmetics, toiletries, and household products, agricultural chemicals, trace elements, vitamins, toxins and venoms, occupational toxicology, industrial chemicals and materials, waste materials in the air, soil and water, radionuclides, chemical teratogens, mutagens, and carcinogens, and toxic mechanisms.

Availability: DIMDI (EM). Also Online As Part Of: EMBASE.

ENERGY BIBLIOGRAPHY & INDEX (EBI)

Texas A & M University
Phone: (409) 845-5741

Content: Contains citations to Texas A&M University's non-journal energy literature covering production, utilization, and conservation of all types of fuels (e.g., hydrogen, nuclear, synthetic, fossil); alternative energy sources (e.g., wind, solar, geothermal, and fusion); power plants and transmission systems; and economic, political, environmental, statistical aspects of energy-related issues and activities, German documents from World War II on synthetic liquid fuels manufactured from coal.

Availability: ORBIT, Petro-Link.

ENERGY INFORMATION DATABASE

International Research and Evaluation
Phone: (612) 888-9635
Fax: (612) 888-9124

Content: Contains more than 87,000 citations to energy-related publications covering solar energy, bioconversion/biomass, ocean energy, photovoltaics, photoconversion/chemical energy, wind energy, process heat, hybrid/total energy systems, models and simulations, and legislation.

Availability: International Research and Evaluation (IRE).

ENERGY SCIENCE & TECHNOLOGY (EST)

U.S. Department of Energy
Phone: (615) 576-1189

Content: Contains more than 2.6 million literature citations to all unclassified scientific and technical information processed by the DOE Office of Scientific and Technical Information in Oak Ridge, Tennessee. Includes biomass fuels, biomedical sciences, chemistry, coal, lignite, peat, controlled thermonuclear research, electric power engineering, energy conservation, consumption, and utilization, energy conversion, management and storage, aquatic, atmospheric, and terrestrial environmental studies, geosciences, geothermal energy, health and safety, hydroenergy, instrumentation, natural gas, nuclear fuels, nuclear power plants, nuclear reactor technology, oil shales and tar sands, petroleum, physics research, renewable energy, solar energy, synthetic fuels, tidal power, and wind energy.

Availability: OSTI Integrated Technical Information System (ITIS), DIALOG, STN International.

ENERGYLINE

Reed Reference Publishing Group
Phone: (908) 665-6688
800-322-5006

Content: Contains approximately 85,000 literature citations relating to energy issues and problems including economics, government policy, and planning; international political and economic issues; petroleum, natural gas, and coal resources and reserves; solar energy and unconventional energy sources; electric, nuclear, and thermo-nuclear power; fuel production, transport, storage, consumption, conservation, and environmental impacts.

Availability: DIALOG, ESA/IRS, ORBIT, Data-Star, CD-ROM, Magnetic Tape.

ENVIROLINE

Reed Reference Publishing Group
Phone: (908) 665-6688
800-322-5006

Content: Contains more than 165,000 citations to the environment and the management and use of natural resources. Major topics include air, water, and noise pollution; management of renewable and non-renewable resources of the land and water; environmental design and urban ecology; environmental impact of drugs, chemicals, biological, radiological contaminants; oceans, estuaries; solid waste; and transportation.

Availability: Data-Star, DIALOG, DIMDI, ESA/IRS, ORBIT (cents/full record offline), Life Science Network, CD-ROM, Magnetic Tape.

ENVIRONMENTAL BIBLIOGRAPHY

International Academy at Santa Barbara
Environmental Studies Institute
Phone: (905) 965-5010

Content: Contains more than 450,000 periodic literature citations dealing with the discovery, development, transportation, and consumption of traditional and alternative energy resources, including laws and regulations, recycling, transportation studies; air including quality control, emissions, thermal pollution, and climate change; energy including synthetic and fossil fuels, nuclear and hydroelectric power, conservation, and alternative energy sources; land resources including wildlife and wilderness preservation, soil erosion and conservation, mining and land reclamation, and agriculture and forestry; water resources including sewage and waste, agricultural effluents, chemical pollution, and treatment systems; and nutrition and health, public health, and toxicological studies.

Availability: DIALOG, Life Science Network, CD-ROM.

FOOD RA ONLINE SCIENTIFIC AND TECHNICAL INFORMATION (FROSTI)

Leatherhead Food Research Association (LFRA)
Phone: 0372 37676

Content: Contains approximately 250,000 worldwide literature citations on food science and technology covering food and beverages, analytical methods, quality control, manufacturing, microbiology, food processing, health and nutrition, recipes, and additives.

Availability: Leatherhead Food Research Association (LFRA), Information Group.

FOOD SCIENCE AND TECHNOLOGY ABSTRACTS (FSTA)

International Food Information Service GmbH (IFIS)
Phone: 069 6690070

Content: Contains more than 420,000 worldwide literature citations on food science and technology covering composition and properties, toxicology and hygiene, engineering and analysis, quality control and legislation, storage and packaging, economics and statistics, and the management of food processes and plants. Commodities include beverages, fruits, vegetables, nuts, sugars, cereals, fats and oils, dairy products, eggs, fish, meat, spices, additives, and dietary foods.

Availability: CAN/OLE, Data-Star, DIALOG Information Services, Inc., DIMDI, ESA/IRS, Knowledge Index, ORBIT cents/full record offline), STN International, Life Science Network, CD-ROM, Magnetic Tape.

IPABASE

Institute of Petroleum
Phone: 0243 779777

Content: Contains more than 4000 worldwide literature citations on the scientific, technical, and economic aspects of the petroleum, petrochemical, and related industries. Covers

exploration, production (e.g., drilling, processing, transportation, storage), analysis and testing, and safety and environmental issues.

Availability: ORBIT Search Service (IPAB).

NATURAL PRODUCTS ALERT (NAPRALERT)

University of Illinois at Chicago
College of Pharmacy
Phone: (312) 996-2246

Content: Contains more than 75,000 citations on the chemical constituents and pharmacology of plant, microbial, and animal (primarily marine) extracts, and secondary metabolites reported to be present in, or isolated from, natural sources.

Availability: University of Illinois at Chicago, College of Pharmacy, Program for Collaborative Research in the Pharmaceutical Sciences (PCRPS).

NTIS BIBLIOGRAPHIC DATA BASE

U.S. National Technical Information Service (NTIS)
Phone: (703) 487-4929
Fax: (703) 321-8199

Content: Contains bibliographic descriptions of approximately 1.5 million unrestricted technical reports from U.S. and non-U.S. government-sponsored research, development, and engineering analyses. The unpublished U.S. reports are prepared by federal, state, and local agencies and their contractors or grantees. Major areas covered include the biological and physical sciences and engineering and business information.

Availability: BRS Information Technologies, BRS/After Dark, BRS/COLLEAGUE, CENDOCAR, CAN/OLE, Data-Star, DIALOG, Knowledge Index, ESA/IRS (6), ORBIT, STN International, Life Sciences Network.

PACKAGING SCIENCE AND TECHNOLOGY ABSTRACTS (PSTA)

International Food Information Service GmbH (IFIS)
Phone: 069 6690070
Fax: 069 66900710

Content: Contains approximately 30,000 worldwide literature citations on packaging technology, with special emphasis on the packaging of foodstuffs and pharmaceuticals. Covers aerosols, chemical products, closures, coating, cushioning materials, design, dosing, education, economics, electro-technical products, environment filling, foods, handling, storage, transport, labeling, law, machine parts, marketing, packaging machines, packaging materials, pharmaceutical products, quality control, research, standards, testing, wrapping, and waste recycling.

Availability: CAN/OLE, DIALOG, DIMDI, ESA/IRS (55: PACKABS), Magnetic Tape.

PAPERCHEM

Institute of Paper Science and Technology
Phone: (404) 853-9500
Fax: (404) 853-9510

Content: Contains more than 297,000 worldwide literature citations to scientific and technical literature and patents on theories, resources, products, and processes of the pulp, paper, and board industries. Both manufacturing and use aspects are examined covering raw materials, principles, processes, patents, technology, machinery and equipment, products, packaging, graphic arts, forestry and silviculture, and the chemistry of carbohydrates, cellulose, hemicelluloses, lignin, and wood extractives.

Availability: DIALOG

POLLUTION ABSTRACTS

Cambridge Scientific Abstracts (CSA)
Phone: (301) 961-6750
800-843-7751
Fax: (301) 961-6720

Content: Contains more than 175,000 worldwide literature citations to the technical and non-technical literature on pollution research, sources, and controls. Covers air, water (marine and freshwater), land, thermal, noise, and radiological pollution, pesticides and their toxicology, detection, monitoring, pollution analysis, mathematical models, effects of oil spills, point and nonpoint pollution, sewage and wastewater treatment, environmental action, industrial and municipal disposal of sludge and hazardous chemical wastes and refuse, heavy metals, and toxicology and health.

Availability: Data-Star, DIALOG, ESA/IRS, Knowledge Index, University of Tsukuba, Science Information Processing Center, Life Science Network, Magnetic Tape, Batch Access. Also Online As Part Of: CSA Life Sciences Collection.

POWER

U.S. Department of Energy
Phone: (202) 586-5955

Content: Contains citations to more than 35,000 monographs, conference proceedings, journals, audiovisual resources, and other materials in the collection of the Department of Energy Headquarters Library emphasizing energy technologies: fossil fuels, nuclear, solar, geothermal, electrical; energy conservation and renewable resources; physical and environmental sciences; economics; energy and water resources; and general works on energy. Includes items from the former Atomic Energy Commission, Energy Research and Development Administration, and Federal Energy Administration Libraries.

Availability: ORBIT

RAPRA ABSTRACTS

Rapra Technology Ltd.
Phone: 0939 250383
Fax: 0939 251118

Content: Contains more than 360,000 literature citations on the rubber, plastics, and adhesives industries including raw materials and monomers, polymers and polymerization, adhesives, compounding ingredients, intermediate and semifinished products, processing and treatment technology, testing, applications of polymers, toxicity reports, environmental and industrial health hazards, and legislation and standards, company and new product information, and industrial health and safety.

Availability: ORBIT, PFDS Online, DIALOG Information Services, Inc. (323), Data-Star (RAPR), ESA/IRS, STN International, CD-ROM, Diskette, Magnetic Tape, Batch Access.

SILICA (SYSTEM FOR INTERNATIONAL LITERATURE INFORMATION ON CERAMICS AND GLASS)

Fachinformationszentrum Werkstoffe e.V. (FIZ-W)
Phone: 030 830001

Content: Contains more than 39,000 worldwide literature citations on nonmetallic inorganic materials, including ceramics, glass refractories, and composites. Emphasis is on scientific and technical fundamentals, laboratory and analytical methods, raw and auxiliary materials and their processing, manufacturing processes and quality control, power economy, products and their applications, safety, environmental protection, and recycling, energy technology, and business management.

Availability: FIZ Technik, STN International.

TOXIC NEWS

Capital Reports
Phone: (916) 441-4427
Fax: (916) 441-4560

Content: Contains news and information covering hazardous wastes and materials, toxic substances, and air and water quality. Includes citations, with abstracts, to relevant federal and California state legislation, U.S. Environmental Protection Agency (EPA) rulings, and other state and federal agency regulations. Also includes a calendar of meetings and hearings. Sources include the Congressional Record, Federal Register, California Regulatory Notice Register, and other government releases and notices.

Availability: Capital Reports.

5009 TOXLINE

U.S. National Library of Medicine (NLM)
Phone: (301) 496-1131
800-638-8480

Content: Contains more than 1.6 million literature citations in areas of toxicology, including chemicals and pharmaceuticals, pesticides, environmental pollutants, mutagens, and teratogens. Those files of interest to LCA practitioners include:

- CIS Abstracts (International Labour Office)—contains citations to the worldwide literature on occupational safety and health. Covers pathology and medicine of work in many industries and professions, education, ergonomics, statistics, and the organization, inspection, and risks of safety systems.

- Environmental Mutagen Information Center File (EMIC)—contains references to worldwide published literature reporting on the testing of chemicals for genotoxicity.

- Environmental Teratology Information Center File (ETIC)—contains references to worldwide literature dealing with the chemical and drug affects on embryology of warm-blooded and cold blooded animals.

- Epidemiology Information System (EPIDEM)—contains references to journal articles and other published literature dealing with the distribution and health effects of food contaminants.

- Hazardous Materials Technical Center (HMTC)—contains citations to published literature on the management of hazardous materials, including disposal, storage, and transportation. Produced by the Hazardous Materials Technical Center of the U.S. Defense Logistics Agency.

- International Pharmaceutical Abstracts—contains indexes and abstracts of the world's pharmaceutical, medical, and related journals.

- NIOSH Technical Information Center Database (NIOSHTIC)—provides citations of worldwide technical literature dealing with occupational health and safety.

- Pesticides Abstracts (PESTAB)—covers published reports on the epidemiological effects of pesticides on humans, from journals published in the U.S. and other countries, 1967 to December 1981.

- Toxic Substances Control Act Test Submissions (TSCATS)—lists chemical substances manufactured, imported, or processed in the United States for commercial purposes.

- Toxicity Bibliography (TOXBIB)—(a subset of the MEDLINE database). Covers adverse effects, toxicity, poisoning, and environmental effects caused by drugs and chemicals, as well as disease conditions induced by chemical substances or radiation.

- Toxicological Aspects of Environmental Health.

- Toxicology Research Projects—descriptions of research projects, fiscal year the Public Health Service, or conducted intramurally by the U.S. National Institutes of Health (NIH) and the National Institute of Mental Health in the areas of toxicology and epidemiology. Information is obtained from the NIH, Division of Research Grants, Computer Retrieval of Information on Scientific Projects system (CRISP).

- Toxicology Document and Data Depository (NTIS)—contains citations, 1979 to date, dealing with toxicology and related subjects obtained from the NTIS database.

NOTE: A backfile, covering 1965 to 1980, is available under the name TOXLINE65.

NLM also makes available the following database: TOXLIT (Toxicology Literature from Special Sources)—contains citations, with abstracts, to the worldwide literature on toxicology, with an emphasis on chemicals. Includes records from Chemical Abstracts that cover interactions of chemical substances with biological systems in vivo and in vitro.

NOTE: A backfile covering 1965 to 1980, is available under the name TOXLIT65.

Availability: BRS Information Technologies, BRS/After Dark, BRS/COLLEAGUE, Data-Star, DIMDI, JICST Online Information System, DIALOG, MEDLARS, Life Science Network, CD-ROM, Magnetic Tape.

TULSA

Petroleum Abstracts
Phone: (918) 631-2297
800-247-8678

Content: Contains more than 500,000 worldwide literature and patent citations, on the exploration, development, and production of petroleum resources, particularly oil and natural gas. Also covers the areas of geology, geophysics, geochemistry, well drilling, completion, and servicing, well logging, production statistics, transport and storage, environmental impact,

alternate fuels and energy sources, supplemental technology, and mineral commodities. Also contains citations from Oil and Gas Fields Bibliography on oil and gas fields worldwide from the early 1900s to 1965.

Availability: DIALOG, ORBIT.

WASTE MANAGEMENT AND RESOURCE RECOVERY

International Research and Evaluation (IRE)
Phone: (612) 888-9635
Fax: (612) 888-9124

Content: Contains worldwide literature citations covering solid, liquid, hazardous, and nuclear waste management, water quality, toxic substances, land reclamation, and resources recovery. Emphasis in these areas is on air pollution, agricultural engineering, civil engineering, food science, geology, and nuclear science.

Availability: International Research and Evaluation (IRE).

WASTEINFO

United Kingdom Atomic Energy Authority
Phone: 0235 433442
Fax: 0235 432854

Content: Contains more than 75,000 worldwide literature citations on non-nuclear waste management. Covers treatment and disposal, recycling, and environmental hazards and impact. Also covers public policy, legislation, regulations, and waste management guidelines; nonradioactive waste management covering the handling, treatment, disposal, recycling, legal and environmental hazard aspects; and municipal refuse, pollution, landfill issues, composting, reclamation, sewage, metals, incineration, and toxic and industrial wastes. Includes descriptive information on companies that provide products and services for waste management.

Availability: ORBIT, CD-ROM.

WATER RESOURCES ABSTRACTS (WRA)

U.S. Geological Survey
Phone: (703) 648-6820

Content: Contains more than 250,000 literature citations on the water resource-related aspects of the physical, social and life sciences. Covers related engineering and legal aspects of the characteristics, conservation, control, use, and management of water resources. Also covers the nature of water and water cycles, water supply augmentation and conservation, water quantity management and control, water quality management and protection, water resources planning, and engineering works.

Availability: DIALOG, CD-ROM, Magnetic Tape, Batch Access.

WORLD ALUMINUM ABSTRACTS (WAA)

The Institute of Metals
Phone: 071-839 4071
Fax: 071-839 2289

Content: Contains more than 158,000 worldwide literature citations to aluminum literature, including journal articles, patents, government reports, conference proceedings, dissertations, books, and other publications. Covers aluminum industry, ores, aluminum production and extraction, melting, casting and foundry, metalworking, fabrication, finishing, physical and mechanical metallurgy, engineering properties and tests, quality control and tests, and end uses.

Availability: DIALOG, ESA/IRS (9: Aluminum).

WORLD CERAMICS ABSTRACTS

British Ceramic Research Ltd.
Phone: 0782 45431
Fax: 0782 412331

Content: Contains about 46,000 worldwide literature citations on ceramics covering raw material processing, plant development, ceramic processing, and applications for high-technology ceramics, whitewares, vitreous enamels and refractories, clay-based building materials, glasses, and cements and mortars.

Availability: ORBIT, Magnetic Tape.

WORLD INDUSTRIES COMMITTEE ON ENVIRONMENT (WICE)

Phone: 47-69-341900

Contents: Contains information on over 50 LCA studies including the types of products studied, scope of the projects, functional units, system boundaries, etc. WICE worked in cooperation with SETAC-Europe and Ecobilan to design a special reporting form that allows data base users to assess the usefulness of an LCA without compromising proprietary information. The data base itself does not contain quantitative inventory-type data.

Availability: Center for Applied Research, Oestfold Norway.

CHAPTER 4
ON-GOING STUDIES AND FOREIGN DATA BASES

Five on-going studies were identified in the United States which may contribute significantly to the public LCA knowledge base. The American Plastics Council (APC) is developing an LCI data base on eight thermoplastic resins. The U.S. EPA is conducting an LCI of residential nylon carpeting to both demonstrate the practical application of EPA's (1993a) LCI guidelines and to develop certain aggregated information sets for inputs into other LCI studies. The U.S. Department of Energy is sponsoring a project to prepare LCIs for 20 commodity materials. This long-term project is scheduled for completion by 1997. The U.S. EPA is also developing an ECOTOX data base system which will contain ecotoxicological effects information for aquatic life, wildlife, and plants. The U.S. Bureau of Mines is preparing a series of material flow studies for selected mineral commodities and distributes current commodity information through its MINES FaxBack System.

A number of foreign data bases have been developed that contain manufacturing process information and are associated with spreadsheets or other computational tools to allow the data to be directly incorporated into an inventory or impact assessment. All of these data bases are of Western European origin, where the application of LCA by both government and industry has out-paced efforts in North America. The foreign data bases discussed in this chapter are publicly available through direct purchase of hard copy printouts of the data, are PC-accessible, or are available to users through lease arrangements.

4.1 On-going Studies

Information was obtained on four on-going studies that are expected to contain data useful for preparing LCAs and where all or part of the results are expected to be released to the general public.

LCI Data Modules of Eight Thermoplastics

The American Plastics Council (APC) has contracted with Chem Systems, Inc. to prepare an LCI for each of the following eight thermoplastics: high density polyethylene (HDPE), low density polyethylene (LDPE), linear low density polyethylene (LLDPE), polypropylene (PP),

polyvinylchloride (PVC), polyethylene terephthalate polyester (PET), general purpose polystyrene (GPPS), and high impact polystyrene (HIPS). The first phase of the project deals only with the production of the resin from the naturally occurring raw material to the pellet stage. A second phase will address the fabrication of the resin into end user goods. Companies cooperating in the study will represent roughly 70 percent of production in each resin category. The study will follow the SETAC framework and the U.S. EPA guidelines for preparing an LCI. A peer review team has been organized to review the study scope (boundaries and methodology), data collection and processing, and database output and system documentation. The completed database will contain detailed information, which will be kept strictly confidential. A detailed computer spreadsheet with the aggregated data will be available to industry cooperators only. A more generic aggregation of the data, which has been sanitized to preserve business sensitive data, will be made available to the public. The study is expected to be completed in 1995. Further information can be obtained from Ronald F. Cascone of Chem Systems, Inc., 303 South Broadway, Tarrytown, NY, 10591-5487, or by calling 914-631-2828

LCI of Residential Nylon Carpeting

The U.S. EPA has contracted with Battelle Columbus Operations (BCO) to prepare a full LCI of residential nylon carpeting. The two primary objectives of this research are: (1) to demonstrate the utility of U.S. EPA's (1993) LCI guidelines and principles manual, and (2) to demonstrate how to better address confidentiality issues pertaining to the acquisition of high quality, industry-average information. Secondary objectives are: (1) to produce a life-cycle inventory of residential carpeting that can be used by the carpeting industry and by third parties to understand the resource and energy consumption and environmental burdens of the product category, and (2) to develop certain aggregated information sets that can serve as preliminary reference data bases for input to other LCI studies. This LCI will be an assessment of a typical residential carpet system. The choice of nylon carpet is based on market share, because nylon fiber comprises 75 percent of the market for residential applications. The scope includes the following secondary parameters, which were selected based on sales: dye (blue color), stain-resist treatment, and anti-static treatment. The study is expected to be completed by mid-1995. Further information can be obtained from Mary Ann Curran, U.S. EPA, RREL, 26 West Martin Luther King Drive, Cincinnati, OH 45268, or by calling 513-569-7837.

LCIs of Twenty Commodity Materials

The U.S. Department of Energy (DOE), Industrial Waste Reduction Program (IWRP), has contracted with Battelle's Pacific Northwest Laboratories (PNL) to prepare LCIs for 20 commodity materials (e.g., aluminum, glass, ethylene, natural gas). The information will be made available in the form of a Life-cycle, Computer-Aided Database (L-CAD). L-CAD is being designed using a modular concept that allows the system to work interactively with multiple independent data bases developed by different organizations. A prototype (not fully loaded with data) should be available in late winter, 1994. Project completion is scheduled for FY96 or 97, depending on industrial participation. Further information can be obtained from Kenneth K. Humphreys, Battelle, Pacific Northwest Laboratories, Battelle Boulevard, P.O. Box 999, Richland, WA, 99352, or by calling 509-372-4279.

ECOTOX Data Base

The Environmental Research Laboratory-Duluth (ERL-Duluth), the Environmental Research Laboratory-Corvallis (ERL-Corvallis), and the Office of Technology Transfer and Regulatory Support, with support from the Office of Water, Office of Solid Waste and Superfund, are working together to develop a proposed data base called ECOTOX. The goal of the proposed ECOTOX system is to establish a single non-bibliographic data base containing ecotoxicological effects information for aquatic life, wildlife, and plants that will be available for state, regional, national, and international agencies through the EPA Computing Center at Research Triangle Park, North Carolina. The development of this data base will insure that high quality and properly reviewed toxic effects data are readily available to the regulatory and research community for use in performing ecological risk assessments. The three data bases to be combined are AQUIRE, PHYTOTOX, and TERRE-TOX. Detailed profiles of each of these three data bases are included in Section 2.1 of this report. Further information can be obtained from Steven Bradbury, U.S. EPA, Environmental Research Laboratory, 6201 Congdon Boulevard, Duluth, MN, 55804, or by calling 218-720-5527.

U.S. Bureau of Mines, MINES FaxBack System

The U.S. Bureau of Mines is preparing a series of material flow studies for selected mineral commodities. The studies identify mineral and other material losses to the environment that

occur throughout the life cycle of subject commodities. To date, studies have been completed for arsenic, cadmium, chromium, cobalt, manganese, mercury, salt, tungsten, and zinc. Future studies are planned for additional commodities, including metals, glass, and fertilizer materials. Further information on these studies can be obtained from Mr. Donald G. Rogich, Chief, Division of Mineral Commodities, U.S. Bureau of Mines, Washington, DC 20241, or by calling 202-501-9448.

Current commodity information distributed by the U.S. Bureau of Mines, mainly through its Mineral Industry Surveys, is available for the MINES FaxBack System. This is an automated fax system that operates 24 hours a day and 7 days a week, allowing callers to retrieve Bureau catalogs and publications to their fax machines in minutes. The system has been operating since November 1992 and recently has been upgraded. To use the MINES FaxBack System:

1) Use the touch-tone telephone handset attached to your fax machine, or connect one to the fax machine's telephone jack. ISDN (digital) touch-tone telephones cannot be used with fax machines.

2) Call MINES FaxBack at 202-219-3664

3) Listen to the menu options and press your selection using the touch-tone dial pad of the telephone.

4) After completing your selection(s), press the START button on your fax machine to receive the selected documents.

If you experience any problems while trying to use the MINES FaxBack System, call 202-501-9446 for assistance.

4.2 Foreign Data Bases

The past decade has seen the development of at least nine data bases containing resource consumption and environmental releases information organized by industrial process or activity that potentially could be used for the preparation of LCAs. All of the data in the data bases, with one possible exception, are of Western European origin. In most instances, these data bases are not stand-alone entities, but rather are associated with spreadsheets or other computational tools to allow the data to be directly incorporated into the inventory or impact assessment. The following discussion includes data bases that are publicly available through

direct purchase of hard copy printouts of the data or are PC accessible. The data bases are presented in their chronological order of development. There are at least two additional data bases that are privately developed, but available to users through licensing arrangements.

BUWAL '84 and '90

The BUWAL (Swiss Office of environmental protection) data base was originally developed in 1984 by the Swiss government to support Ecoprofile Analysis within the country. In 1990, the Swiss Technical Institute (ETH) updated and expanded the data base. The data are available in hardcopy and cover Western European conditions, although the power generation and some of the waste disposal modules relate specifically to Swiss conditions. Most of the data are associated with materials used in packaging. This data base is not part of a stand-alone BUWAL LCA computational model, although the data are widely incorporated into other data bases and associated models such as the SimaPro model discussed below. For additional information contact: ETH Zentrum, CH-8092 Zurich, Switzerland.

EMPA

This data base has been developed by the Swiss Federal Laboratory for Testing and Materials and is part of an Ecobalance computational model. In addition to containing the energy, resource input, and environmental emissions data for a wide range of processes studied by EMPA, there is extensive information on transportation and electricity production. In some instances the data are derived from secondary sources. The concept of critical volumes, i.e. the inventory loadings into a particular environmental medium divided by the regulatory threshold limit, is embedded in the system. Most of the data pertain to Swiss conditions, although the secondary derived data are more broadly applicable to Western Europe. Further information may be obtained from EMPA, Unterstrasse 11, Postfach CH-9001, St. Gallen, Switzerland.

International Database for Ecoprofile Analysis (IDEA)

The IDEA data base was developed by the International Institute for Applied Systems Analysis (IIASA) in Laxenburg, Austria. Over the period of 1989 to 1991, data on more than 1,000 unit processes and 1,000 products have been inserted in the data base. The primary industrial

sectors covered include pulp and paper, steel, aluminum, petrochemicals, plastics, inorganic chemicals, glass, energy conversion, transportation, and waste management. The data base is structured in hierarchical fashion using the dBase IV software and is part of an overall LCI model. In addition to the average values for basic input and output data, the data for each unit process (Level 1 in the hierarchy) include minimum and maximum values to facilitate uncertainty analysis. At the intermediate level, the user can develop tables which relate the unit process level data to the product computations. While the data are primarily for Western Europe, there are some data that are derived from U.S. sources. For example, some of the atmospheric emissions are derived from the U.S. EPA Air Pollutant Emissions Factors (AP-42). Further information may be obtained from IIASA, 1220 Wien, Bernoullistrasse 4/5/6/19.

SimaPro 2.0

The SimaPro data base has been developed to facilitate the conduct of Ecobalances and particularly product improvement studies by individuals who are not LCA experts. The data base is embedded in an LCA computational model and most of the data are either from BUWAL '90 or from Dutch studies. Auxiliary data include some U.S. data from previously published LCI studies. The data base information can be obtained without constructing a complete LCI. The latest versions of the program have an expanded data set and more flexible approaches to impact assessment. The program is available in two versions, the Analyst version, which contains all of the features and is intended to be used for detailed and complex analyses, and the Designer version which lacks some of the more extended database management and output features.

The overall program is straightforward to use, however to accomplish this, certain simplifying assumptions have been made in regard to the way certain processes and activities occur and are incorporated into the model. In particular, the handling of recycling consists of only two options - high level and low level (construction materials for example). Thus, the user cannot couple two product systems in order to properly account for the consequences of recycling. Addition of data into the data base is straightforward with the user being presented with an input form for creating new processes. The data base is being updated on a regular basis. Further information may be obtained from Pre' Consultants, Bergstraat 6, 3811 NH Amersfoort, The Netherlands.

LCA Inventory Tool (LCAIT)

The LCA Inventory Tool was developed during the past two years by Chalmers IndustriTeknik (CIT) for use by LCA specialists who want to construct very complex or specialized inventories. Thus, it offers very flexible definitions of any aspect of a product system and supports extensive documentation of data through text inserts in the data fields. The program is supported with a large data base on energy, transportation, and selected materials. The data are primarily for Swedish industry. Additional customized data bases can be compiled by CIT. Further technical information about this data base may be obtained from CIT, S-412 88 Goteborg, Sweden and purchasing information from Pre' Consultants, Bergstraat 6, 3811 NH Amersfoort, The Netherlands.

Product Improvement Assessment (PIA)

The Product Improvement Assessment computer program is a simple to use system expressly developed to support improvements assessment using LCA. PIA has been developed jointly by Toegepaste Milieu Economie (TME) and the Bureau voor Milieu en Informatica (BMI) under the auspices of Van den Burgh en Jurgens (a Dutch Unilever subsidiary that has conducted its own studies and contributed data to the SimaPro data base discussed above). Use of the program is consistent with the manner in which product design and design alternatives are identified. The program is intended for product producers, industrial designers, and technical training institutes who are not necessarily LCA experts. The data base contains unit operations inputs and outputs for energy, transportation, and waste management. Additional custom data base categories can be created by TME or input by the user. Process data can be exported to other programs. For further information contact TME, Grote Marktstraat 24, 25 11 BJ 's-Gravenhage, The Netherlands.

Boustead Data Base from the Open University of the U.K.

An LCI model with its associated data base was developed by Dr. Ian Boustead. The data base contains information on over 2,000 unit operations. Unit operations data represent a mixture of U.K. and general European conditions. Both PC and mainframe versions are available. Dr. Boustead supervised the data collection for the Plastic Waste Management Institute (PWMI) study described below and has incorporated these data into the data base.

Lease arrangements are available through Dr. Boustead at the Open University of the U.K., St. James's House, 150 London Road, East Grinstead, RH 191ES, West Sussex, U.K.

Packaging Industry Research Association (PIRA)

A second U.K. data base has been developed by PIRA International and it is also associated with a computational model. The model consists of spreadsheet software (Excell) coupled with data derived from a study commissioned by the U.K. Government. The model can be used to select existing studies or design a life-cycle from scratch. Standard materials covered include virgin and recycled paper and board, a variety of polymers (HDPE, LDPE, PP, PET, PVC, PVOH, PC), steel tinplate, glass, and aluminum. The PWMI data, discussed below, are also included in this data base. The methodology is well explained and consistent with the current international guidelines on LCA practice. The program is available through an annual licensing program, however, the data are not separately licensed. For further information contact Dr. N. Kirkpatrick, Business Manager, Environment, PIRA International at Randall Road, Leatherhead, KT22 7RU Surrey, U.K.

Plastic Waste Management Institute (PWMI)

The PWMI has released its life-cycle data base on cradle-to-factory door information on selected plastic resins. Data represent both European average, and depending on the materials or processes, specific countries. Data conform to the SETAC LCA framework guidelines. Availability and cost in electronic form are not known but the hardcopy version is freely available. For more details contact PWMI at Avenue E. Van Nieuwenhuyse 4, Box 5, B-1160 Brussels, Belgium.

CHAPTER 5
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Appendix A

List of Acronym Definitions

ACRONYM[a]	DEFINITION
301(H)	301(H) Application Tracking System
304(I)	304(I) Progress Tracking System
ABIPST	Abstract Bulletin of the Institute of Paper Science and Technology
"ACCI"	American Coke and Coal Institute
AIRDOS	Atmospheric Dispersion of Radionuclides
AIRS	Aerometric Information Retrieval System
"ALUMASSN"	Aluminum Standards Data Base
APC	American Plastics Council
AQUIRE	Aquatic Toxicity Information Retrieval
ARIP	Accidental Release Information Program
ASHDISPOS	Municipal Waste Combustion-Ash Disposal Facilities Data Base
ASTER	Assessment Tools for the Evaluation of Risk
BACT	Best Available Control Technology
BCO	Battelle Columbus Operations
BGRM	France Bureau de Recherches Geologiques et Minieres
BLIS	RACT/BACT/LAER Determinations
BMI	Bureau voor Milieu en Informatica
BRS	Biennial Reporting System
BUWAL	Bundesamt für Umwelt, Wald und Landschaft (Bern, Switzerland)
CAIR	Comprehensive Assessment Information Rule Data Base
CARD	CLP Analytical Results and Quality Assurance
CAS	Chemical Abstract Service
CBNB	Chemical Business NewsBase
CCID	Confidential Chemicals Identification List
CCRIS	Chemical Carcinogenesis Research Information System
CD-ROM	Compact Disc - Read Only Memory
CENDATA	Census Bureau Online
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESARS	Chemical Evaluation Search and Retrieval System

[a] Acronyms in quotation marks were created for this report and were not created by the data base developers.

CFR	Congressional Federal Register
CHEM-INTELL	Chemical Intelligence Services
CHEMD	OTS Chemical Directory
CHIEF	Clearinghouse for Inventories/Emission Factors
CICIS	Chemicals in Commerce Information System
CIN	Chemical Industry Notes
CIS	Chemical Information System, Inc.
CIT	Chalmers IndustriTecknik
CRIEPI	Japanese Electric Power Industry
CSA	Cambridge Scientific Abstracts
CSNB	Chemical Safety NewsBase
CTCP	Clinical Toxicology of Commercial Products
CURE	Chemical Unit Record Estimates Data Base
CUS	Chemical Update System
DATAPAK	Utility Data Institute Datapak
DCI/CRMS	Chemical Review Management System
DERMAL	Dermal Absorption
"DSOSS"	Data Base and Systems for Optimal Solvent Selection
EBI	Energy Bibliography and Index
ECOTOX	A data base proposed by EPA to combine AQUIRE, TERRE-TOX, and PHYTO-TOX
EDB	Environmental Data Base
EDF	Electricite e France
EFDB	Environmental Fate Data Bases
EFG	Effluent Guidelines Studies
EMPA	Eidgenössiche Materialprüfungs- und Forschungsanstalt
EPACAP	Capacity Assurance Database
EPD	Electric Power Data Base
EPRI	Electric Power Research Institute
ERL	Environmental Research Laboratory (for U.S. EPA)
EST	Energy Science and Technology
ETH	Eidgenössiche Technische Hochschule
EXEC/OP	Synthesis of Wastewater Treatment Systems
EXPORT	Hazardous Waste Export Data Base

[a] Acronyms in quotation marks were created for this report and were not created by the data base developers.

FATES	FIFRA and TSCA Tracking System
FFARS	Fuel and Fuel Additives Registration System
FOIA	Freedom of Information Act
"FOSUNITPER"	Fossil Fuel Power Unit Performance Data Base
FROSTI	Food RA On-Line Scientific and Technical Information
"FROZFD"	American Frozen Food Institute
FSTA	Food Science and Technology Abstracts
FY	Fiscal Year
GENE-TOX	Genetic Toxicity
GPO	Government Printing Office
GPPS	General Purpose Polystyrene
GRA & I	Government Reports Announcements and Index
"GTOM/YR"	U.S. Gas Turbine O&M Data Base
HDPE	High Density Polyethylene
HIPS	High Impact Polystyrene
HMIS	Hazardous Materials Identification System
HSDB	Hazardous Substance Data Bank
HSWA	Hazardous and Solid Waste Amendments of 1984
HWDMS	Hazardous Waste Data Management System (now known as RCRIS)
IDEA	International Data Base for Ecoprofile Analysis
IFIS	International Food Information Service GmbH
IRIS	Integrated Risk Information System
IRPTC	International Register of Potentially Toxic Chemicals
ISDB	Industry Studies Data Base
LAER	Lowest Achievable Emission Rate
LCA	Life-Cycle Assessment
LCAD	Life-Cycle, Computer-Aided Data Base
LCAIT	LCA Inventory Tool
LCI	Life-Cycle Inventory
LDPE	Low Density Polyethylene
LFRA	Leatherhead Food Research Association
LLDPE	Linear Low Density Polyethylene
"MCDB"	Manufacturing Census Data Base
MEDLARS	Medical Literature Analysis and Retrieval System Clearinghouse

[a] Acronyms in quotation marks were created for this report and were not created by the data base developers.

MINES	Mines Data Base
MSDS	Material Safety Data Sheet
NAL	National Agricultural Library
NAPALERT	Natural Products Alert
NAPAP	1985 National Acid Precipitation Assessment Program Emission Inventory
NATICH	National Air Toxics Information Clearinghouse
NCC	National Computer Center
NIOSH	National Institute for Occupational Safety and Health
NLM	National Library of Medicine
NPDES	National Pollutant Discharge Elimination System Laboratory Performance Evaluation
NTIS	National Technical Information Service
"NUCUNITPER"	Nuclear Power Unit Performance Data Base
"NUPPDB"	Non-Utility Power Plant Data Base
NURF	1985 National Utility Reference File
ODES	Ocean Data Evaluation System
ORALTOX	Acute Oral Toxicity
PADS	PCB Activity Data Base
PC	Polycarbonate
PCRPS	Program for Collaborative Research in the Pharmaceutical Sciences
PCS	Permit Compliance System
PDMS	Pesticide Document Management System
PESTDOC	DERWeNT Crop Protection File
PET	Polyethylene Terephthalate Polyester
PHYTOTOX	Terrestrial Plant Toxicity Data System
PIA	Product Improvement Assessment
PIRA	Packaging Industry Research Association
PIRANHA	Pesticide and Industrial Chemical Risk Analysis and Hazard Assessment
PISCES	Power Plant Integrated Chemical Emission Studies
PLASPEC	Plaspec Materials Selection Data Base
PNL	Pacific Northwest Laboratories (Battelle)
POTW	Publicly-Owned Treatment Works
PP	Polypropylene
"PPEUCUDI"	European Community Power Plant Data Base

[a] Acronyms in quotation marks were created for this report and were not created by the data base developers.

PPIS	Pesticide Product Information System
"PPJAP"	Japanese Power Plant Data Base
PSTA	Packaging Science and Technology Abstracts
PVC	Polyvinyl chloride
PVOH	Polyvinyl alcohol
PWMI	Plastic Waste Management Institute
RACT	Reasonable Available Control Technology
RBLC	RACT/BACT/LAER Clearinghouse
RCRA	Resource Conservation and Recovery Act
RCRIS	Resource Conservation and Recovery Act Docket Information System
RECYCLELINE	RecycleLine
REPROTOX	Reproductive Toxicology Data Base
RRELTDB	Risk Reduction Engineering Laboratory Treatability Data Base
RTECS	Registry of Toxic Effects of Chemical Substances
SAGE	Solvent Alternatives Guide
SARA	Superfund Amendments and Reauthorization Act
SETAC	Society of Environmental Toxicology and Chemistry
SIC	Standard Industrial Classification
SimaPro	SimaPro
SSTS	Section Seven Tracking
STORET	Storage and Retrieval of Water Quality Information
TERRE-TOX	Terrestrial Wildlife Toxicity Data System
TME	Toegepaste Milieu Economie
TOXLINE	Toxicology Information On-Line
TOXNET	Toxicology Data Network
TRI	Toxic Chemical Release Inventory System
TSCATS	Toxic Substances Control Act Test Submissions
TSDF	Air Emissions from TSD Facilities for Hazardous Waste
TSDR	Treatment, Storage, Disposal, and Recycling Data Base
U.K.	United Kingdom
U.S. DOE	U.S. Department of Energy
U.S. EPA	U.S. Environmental Protection Agency
VOC	Volatile Organic Chemical
WATSTORE	Water Data Storage/Retrieval System

[a] Acronyms in quotation marks were created for this report and were not created by the data base developers.

WBS	EPA Section 305 (b) Waterbody System
WHOWMO	International Air Data Base
WICE	World Information Committee on Environment

[a] Acronyms in quotation marks were created for this report and were not created by the data base developers.

Appendix B
Methods

B.1 Screening of Non-bibliographic Data Bases

A two-stage screening process (initial and secondary) was used to evaluate non-bibliographic data bases. Only data bases that were expected to contain potentially useful information for conducting life-cycle inventory analysis or impact assessment of products underwent in-depth analysis. Figures B-1 and B-2 provide the list of screening questions.

B.1.1 Initial Screening

Eighty-five data bases were initially screened to determine which contained data potentially useful for conducting life-cycle inventory analyses or impact assessments. Less attention was given to data bases still in preparation, e.g., those under development or in the initial data collection/reporting phases. The initial screening criteria were based on:

- Applicability of the data for use in inventory analysis
- Applicability of the data for use in impact analysis
- Level of data availability to the public
- Probable ease of use
- Assessment of data quality for accuracy, completeness, etc.

Each data base was scored based on answers to a series of seven questions (see Figure 1). A "YES" answer was given one point and a "NO" answer was given zero points. The minimal criteria to advance to the second screening was a score of 4 or greater (57%). Data bases that did not have a "YES" response to question 1 or 2, plus a "YES" response to question 3 did not undergo secondary screening.

LCA DATA BASE SCREENING CRITERIA

INITIAL SCREENING

1. **Does the data base contain any information useful in conducting life-cycle inventories?** (e.g., raw material acquisition, manufacturing, use/reuse/maintenance, recycle/waste management) ___

2. **Does the data base contain any information useful in conducting impact assessments?** (e.g., biological and toxicological effects, ecological effects, chemical properties or chemical modeling, resource depletion, background or ambient chemical concentrations) ___

3. **Are the data at least partially available to the public?** (e.g., all the data are publicly available, only selected data categories are available, or only aggregated data summaries are available) ___

4. **Is the data base menu-driven?** ___

5. **Are the data fields sortable?** ___

6. **Are the data within the fields sortable?** ___

7. **Are the data independently audited data quality?** (e.g., precision, accuracy, traceability) ___

YES = 1, NO = 0

Figure B-1 Initial Screening Criteria

LCA DATA BASE SCREENING CRITERIA

SECONDARY SCREENING

8. **Are the data collection methodologies available for review?** ___

9. **Is there only one data collection method used for a single data category?** ___
   (e.g., pH of water samples determined by one of the following methods: glass electrode, titration, or test strip)

10. **Do the data represent current technology?** ___
    (e.g., use of lasers for welding rather than arc welding)

11. **Is the data base currently being updated?** ___

12. **Are more than 50% of the data fields complete?** ___

13. **Can the data be sorted by specific geographic areas?** ___

14. **Do the individual data points represent a single value (or an average of repeated measurements for a single data point) rather than a range of values?** ___

15. **Can the data base be used on a PC?** ___

16. **Are the data used in this system contained within the system?** (e.g., no other data bases are necessary for use of the system) ___

YES = 1, NO = 0

Figure B-2 Secondary Screening Criteria

B.1.2 Secondary Screening

The final analysis (initial and secondary screening combined) was conducted on those data bases that passed the initial screening. The criteria for the secondary screening were based on:

- Availability and consistency of the data collection methodology
- Representativeness of current technology
- Data age
- Data completeness
- Geographic specificity
- Data measurement parameters
- Data accessibility.

Each data base was scored based on answers to the combined set of questions from the initial and secondary screening stages (see Figure 2). The questions for both stages were thoroughly discussed with the data base contact, to ensure he fully understood the purpose of the question and its applicability to LCAs. A "YES" answer was given one point and a "NO" answer was given zero points.

A total score was computed for both screening stages for all data bases that passed the initial screening. The total score provides an indication of the potential adequacy of each data base for conducting LCAs. After the total score was computed, each data base was re-evaluated to determine if further followup calls were necessary to clarify some answers to any screening questions. The scores were then recomputed to determine the final result. An annotated data base profile was prepared for 39 of the data bases receiving a combined score of at least 12 points (75%) (see Section 2.2.3). Tables B-1, B-2, and B-3 provide results of the screening process.

B.1.3 Data Profiles

Additional questions and comments were pursued to obtain information on data bases that were not useful as criteria for scoring, but were considered valuable for the beginning LCA practitioner to gauge the adequacy of the data base. The additional questions were also used to ensure that the data base contact fully understood the criteria questions and its applicability to LCAs. The additional questions included but were not limited to:

- General data base description
- Whether the data base contained life-cycle inventory input or output data
- The data source (chemical industry, mining industry, steel industry, etc)
- Whether the data were product-specific, process-specific, industry-specific, facility-specific, composite, or generic
- The intended purpose of the data base (e.g., regulatory compliance, environmental monitoring, or industrial trend information)
- The applicable environmental media (e.g., air, water, soil, or solid waste)
- Identification of possible indicators of data quality.
- The approximate number of records contained in the data base
- The approximate number of data fields contained in the data base
- The approximate percentage of complete data fields
- Accessibility through other means such as clearinghouses.
- Any additional comments

After compiling the information on the available data and data bases, an annotated data profile for each qualifying data base was prepared. The profiles are listed alphabetically in Section 2.0.

B.2 Data Base Clearinghouses

Several data base clearinghouses are available both through Federal government agencies and commercial means. These clearinghouses allow for on-line retrieval of many different data bases, bibliographies, and other forms of information. Several of these clearinghouses were searched to determine if there were other databases that could be identified for use in conducting life-cycle inventory analyses or impact assessment of products. Those data bases

identified through a clearinghouse were examined in the same manner as other data bases in previous screenings. Summaries of the bibliographic data bases are provided in Section 3.0

B.3 Bibliographic Data Sources

Bibliographic data sources were identified during the process of identifying the non-bibliographic data bases and by consulting Gale's Directory of Online Data Bases and other readily accessible resources. The data bases were screened to retain those bibliographic data bases that are in English, contained primarily US data, required minimal access or subscription fees, and are updated with regular frequency. Several primary and secondary keywords were identified for each data base and a brief abstract was prepared. Summaries of each bibliographic data base clearinghouse are provided in Section 2.2.

B.4 On-Going Studies

Information about on-going studies was obtained through interactions with LCA practitioners, national/international organizations, and newsletters (e.g., SETAC workshops and annual meetings). Section 4.1 contains the on-going data base summaries.

B.5 Foreign Data Bases

A number of foreign data bases were identified and screened for their potential use in LCA preparation. Those deemed most useful were explored further to gather background information as to the compiler, specific content, data format, and method of access. Section 4.2 contains the foreign data base summaries.

Table B-1 Data Bases That Qualified for Profiles

ACRONYM	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	TOT
304(l)	1	0	1	1	1	1	1	1	0	1	0	1	1	1	1	1	13
AIRS	1	1	1	1	1	1	1	1	0	1	1	0	1	1	1	0	13
AQUIRE	0	1	1	1	1	1	1	1	0	1	1	1	0	1	1	1	13
ARIP	1	1	1	1	1	1	0	1	0	1	1	1	1	1	1	1	14
ASHDISPOS	1	1	1	1	1	1	1	0	1	1	0	1	1	0	1	1	13
BLIS	1	0	1	1	1	1	0	0	1	1	1	1	1	0	1	1	12
BRS	1	0	1	1	1	1	1	1	0	1	1	1	1	1	0	1	13
CAIR	1	1	1	0	1	1	0	0	1	1	1	1	1	1	0	1	12
CCRIS	0	1	1	1	1	0	1	1	0	1	1	1	0	1	1	1	12
CESARS	1	1	1	1	1	0	1	1	0	1	1	1	0	1	1	1	13
CHEM-INTELL	1	0	1	0	1	1	1	0	1	1	1	1	1	1	1	1	13
CUS	1	0	1	1	1	1	1	0	0	1	1	1	1	1	1	1	13
"DSOSS"	0	1	1	1	1	1	1	0	1	1	1	1	0	1	1	1	13
EDB	1	0	1	1	1	1	1	1	1	1	1	0	0	1	1	1	13
EFDB	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	14
EFG	1	1	1	0	1	1	1	1	1	1	1	1	0	1	0	1	13
"GTOM/YR"	1	0	1	0	1	1	1	0	0	1	1	1	1	1	1	1	12
HSDB	1	1	1	1	1	1	1	1	0	1	1	1	0	1	1	1	14
IRIS	0	1	1	0	1	1	1	1	1	1	1	1	0	0	1	1	12
IRPTC	1	1	1	1	1	1	1	1	0	1	1	1	1	0	1	1	14
"MCDB"	1	0	1	0	1	1	0	0	1	1	1	1	1	1	1	1	12
MINES	1	0	1	1	1	1	0	1	1	1	1	1	1	1	1	1	14
NATICH	1	1	1	1	1	1	0	1	0	1	1	1	1	1	1	1	14
ODES	1	1	1	1	1	1	1	1	0	1	1	1	1	0	1	1	14
PADS	1	0	1	1	1	1	0	1	1	1	1	1	1	1	1	1	14
PCS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16
PHYTOTOX	0	1	1	1	1	1	1	1	0	0	1	1	0	1	1	1	12
PISCES	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16
PPIS	1	0	1	1	1	1	0	1	1	1	1	1	0	1	1	1	13
RCRIS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	15
REPROTOX	0	1	1	1	1	1	1	1	0	1	1	1	0	1	1	1	13
RTECS	0	1	1	1	1	1	1	1	0	1	1	1	0	1	1	1	13
SIMAPRO	1	0	1	1	1	0	1	0	1	1	1	1	0	1	1	1	12
STORET	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	15
TERRE-TOX	0	1	1	1	1	1	1	1	0	1	1	1	0	1	0	1	12
TRI	1	0	1	1	1	1	1	1	0	1	1	1	1	1	1	1	14
WATSTORE	0	1	1	1	1	1	0	0	0	1	1	1	1	1	1	1	12
WBS	1	1	1	1	0	1	1	1	0	1	1	1	1	1	0	1	13
WHOWMO	0	1	1	0	1	1	1	1	0	1	1	1	1	1	0	1	12
Subtotal	27	26	39	32	38	36	30	28	17	38	37	37	25	34	32	38	

Table B-2 Data Bases That Did Not Meet the Minimum Profiling Score

ACRONYM	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	TOT
CHIEF	0	1	1	1	1	1	1	0	0	1	1	1	0	0	1	1	11
CICIS	1	0	1	1	1	1	0	1	1	0	1	1	0	1	0	1	11
CTCP	1	1	1	0	1	1	0	0	0	1	0	1	1	1	1	1	11
DATAPAK	1	0	1	0	1	1	0	1	1	1	1	1	0	0	1	1	11
DERMAL	0	1	1	0	1	1	1	1	0	1	0	1	0	1	1	1	11
GENE-TOX	0	1	1	0	1	0	1	1	0	1	1	1	0	1	1	1	11
HMIS	0	1	1	1	1	0	1	0	0	1	1	1	0	1	1	1	11
LCAIT	1	0	1	1	1	0	1	0	0	1	0	1	1	1	1	1	11
NAPAP	1	1	1	0	1	1	1	0	0	0	0	1	1	0	0	1	9
"NUCUNITPER"	1	0	1	0	1	1	0	0	0	1	1	1	1	0	1	1	10
NURF	1	1	1	0	1	1	1	0	0	0	0	1	1	0	0	1	9
ORALTOX	0	1	1	0	1	1	0	0	1	0	0	1	0	1	1	1	9
RECYCLELINE	1	0	1	1	1	1	0	0	0	1	1	1	1	0	1	1	11
TSCATS	0	1	1	0	1	0	1	1	0	1	1	0	0	0	1	1	9
SAGE	0	1	1	1	0	0	1	0	0	1	1	1	0	1	1	1	11
SSTS	1	0	1	1	1	1	0	0	0	1	1	1	1	1	0	1	11
"FOSUNITPER"	1	0	1	0	1	1	0	0	0	1	1	1	1	0	1	1	10
SUBTOTAL	10	10	17	7	16	12	9	5	3	13	11	16	8	9	13	17	

Table B-3 Data Bases That Did Not Pass Stage One

ACRONYM	Q1	Q2	Q3	Q4	Q5	Q6	Q7	REASON
301(H)	0	0	1	1	1	1	1	DOES NOT CONTAIN USEFUL INFORMATION FOR LCAs
"ÁCCI"	1	0	0	1	1	1	0	DATA BASE NOT AVAILABLE TO THE PUBLIC
AIRDOS	1	1	0	1	1	1	0	DATA BASE NOT AVAILABLE TO THE PUBLIC
"ALUMASSN"	1	1	0	0	1	1	0	DATA BASE NOT AVAILABLE TO THE PUBLIC
ASTER	0	1	0	1	0	0	1	DATA BASE NOT AVAILABLE TO THE PUBLIC
CARD	0	0	1	1	1	0	1	DOES NOT CONTAIN USEFUL INFORMATION FOR LCAs
CCID	1	0	0	1	1	1	0	DOES NOT AVAILABLE TO THE PUBLIC
CENDATA	0	0	1	1	1	0	1	DOES NOT CONTAIN USEFUL INFORMATION FOR LCAs
CHEMD	0	0	0	1	1	1	1	DOES NOT CONTAIN USEFUL INFORMATION FOR LCAs
CURE	0	1	0	1	1	0	0	INTERNAL EPA USE ONLY
DCI/CRMS	0	0	1	1	1	1	0	DOES NOT CONTAIN USEFUL INFORMATION FOR LCAs
EPACAP	1	0	0	1	1	1	0	INTERNAL EPA USE ONLY
EXEC/OP	1	0	1	0	0	0	0	DOES NOT MEET MINIMUM CRITERIA SCORE
EXPORT	0	0	1	1	1	1	1	DOES NOT CONTAIN USEFUL INFORMATION FOR LCAs
FFARS	1	1	0	1	1	1	0	DATA BASE NOT AVAILABLE TO THE PUBLIC
FATES	1	1	0	1	1	1	0	DATA BASE IS NO LONGER AVAILABLE
"FROZFD"	1	0	0	0	1	1	0	DOES NOT CONTAIN USEFUL INFORMATION FOR LCAs
HWDMS	1	0	0	1	0	1	0	DATA BASE IS NO LONGER AVAILABLE;CONVERTED TO RCRIS
ISDB	1	0	0	1	1	1	1	DATA BASE NOT AVAILABLE TO THE PUBLIC
NPDES	1	1	1	0	0	0	0	DOES NOT MEET MINIMUM CRITERIA SCORE
"NUPPDB"	0	0	1	0	1	1	0	CONTAINS ONLY DESIGN CAPACITY DATA
PDMS	0	0	1	1	1	1	0	DOES NOT CONTAIN USEFUL INFORMATION FOR LCAs
PIRANHA	0	0	1	1	1	1	1	DOES NOT CONTAIN USEFUL INFORMATION FOR LCAs
PLASPEC	0	0	1	1	1	1	1	DOES NOT CONTAIN USEFUL INFORMATION FOR LCAs
"PPJAP"	0	0	1	0	1	1	0	CONTAINS ONLY DESIGN CAPACITY DATA
"PPEUCUDI"	0	0	1	0	1	1	0	CONTAINS ONLY DESIGN CAPACITY DATA
RRELTDB	0	0	1	1	1	1	1	DOES NOT CONTAIN USEFUL INFORMATION FOR LCAs
TSDF	1	0	0	0	1	1	1	DATA BASE NOT AVAILABLE TO THE PUBLIC
TSDR	1	0	1	0	0	0	1	DOES NOT MEET MINIMUM CRITERIA SCORE
TOTAL	**14**	**7**	**15**	**20**	**24**	**22**	**12**	

Appendix C
LCA Data Base User Response Form

This document provides an overview of potential sources of publicly available LCA data. However, because many of these data bases have not been tested in LCA application, the of the data base for application to LCA is somewhat uncertain. Practitioners may need to review a number of different data bases to identify which would be most useful for their purposes. To better identify the usefulness of data bases for specific LCA applications, an LCA data base user response form is provided in Appendix C of this document. The intent of this form is to provide a mechanism for gathering useful information on the applicability of specific data bases to LCA. Practitioners are encouraged to copy this form as needed and use it to evaluate data bases after review or use, so that the information can be compiled and disseminated.

LCA DATA BASE USER RESPONSE FORM

Date: _____

Name of data base: _____

Lead organization: _____

Contact: _____

Data retrieved for use: _____

_____

_____

_____

_____

Data actually used in the LCA / How applied: _____

_____

_____

_____

_____

_____

Would you recommend this data for consideration and use by other LCA practitioners (please circle):

1	2	3	4	5
Not Recommended				Highly Recommended

(Optional Information)

Name of data base user:

Organization: _____

Address: _____

Phone/fax number: _____

Reason for using data base: _____

_____

Attn: LCA Data Base
U.S. Environmental Protection Agency
MC 5306W
401 M Street, SW
Washington, DC 20460