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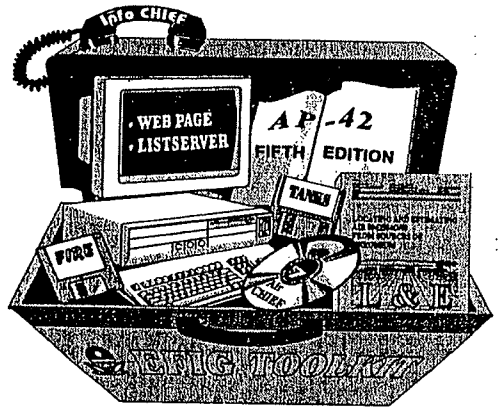
United States Environmental Protection Agency
EPA-454/F-99-008
October 1999

Office Of Air Quality Planning And Standards
Research Triangle Park, NC 27711

EPA

TOOLS

FOR ESTIMATING CRITERIA AND TOXIC AIR POLLUTANTS



Emission Factor and Inventory Group
Emissions, Monitoring, and Analysis Division
Office Of Air Quality Planning and Standards
U. S. Environmental Protection Agency

Emissions Estimation Tools

This brochure provides an overview of the U. S. Environmental Protection Agency's (EPA) air toxics and criteria emission estimating tools. EPA develops air emission inventory tools for point and area sources to support many activities, including: Clean Air Act requirements, State Implementation Plans (SIP), SARA 313 reporting requirements, and other emission estimating and assessment activities. Most of these tools are developed and maintained by the Emission Factor and Inventory Group (EFIG) within EPA's Office of Air Quality Planning and Standards (OAQPS).

This brochure describes each tool and its intended use. Users should select the tool(s) best suited to their projects and obtain the reports or computer databases necessary. For further information on any of these tools, call ***Info CHIEF*** at (919) 541-5285, or write:

Info CHIEF
U. S. Environmental Protection Agency
Emission Factor and Inventory Group
(MD-14)
Research Triangle Park, NC 27711
(E-mail: info.chief@epamail.epa.gov)

These estimating tools should be used with discretion. Actual emissions from individual sources may vary considerably from values estimated by using emission and speciation factors. Source-specific emission test data are generally preferred when available. EFIG welcomes any emission data that would help improve the emissions estimating tools presented in this brochure.

To Order Tools

Copies of the tools mentioned in this brochure are available from different sources and under differing conditions related to requester status (government agency, commercial entity, nonprofit organization, Freedom of Information Act requestor, etc.).

Tools with stock numbers (for example, 055-000-00501-0) are available for a fee from the Government Printing Office (GPO), Superintendent of Documents, P. O. Box 371954, Pittsburgh, PA 15250-7954. Call (202) 512-1800 to order.

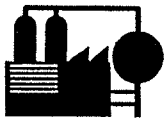
Tools with order numbers (for example, PB94-500584) are available for a fee from the National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, VA 22161. Call (703) 487-4650 to order.

To learn more about any items mentioned here, especially about their use, contact the ***Info CHIEF*** Help Desk, (919) 541-5285 or visit our website at **http://www.epa.gov/ttn/chief/**.

COMPUTER TOOLS

The *Air CHIEF* CD-ROM is the most comprehensive tool for retrieving emission estimation data. The disc contains a wealth of information, including the AP-42 Volume I, EIIP documents, *L&E* series, *FIRE*, RTECS Chemical Synonym List, the SCC list, and the SIC list. A user manual and installable copies of *FIRE, PM Calc, PC BEIS, Water8* and *Chemdat8* are also included. *Air CHIEF* is available from GPO for $15.00. Call the GPO at 202-512-1800. Contact *Info CHIEF* for more information about the *Air CHIEF* CD-ROM.

The *Factor Information And Retrieval Data System* (*FIRE*) is a PC program containing EPA's recommended criteria and hazardous air pollutant emission estimation factors. Users can browse through records in the database or select specific emission factors. *FIRE* is available from the *CHIEF Website* and is on the *Air CHIEF* CD-ROM. A *FIRE* brochure may be obtained from *Info CHIEF*.



TANKS is a PC software program for estimating volatile organic compound (VOC) emissions from both fixed and floating roof storage tanks. The *TANKS* program is available from the CHIEF Website. Call *Info CHIEF* for a brochure describing *TANKS*.

CHEM9 is a compound properties processor that is based upon an EPA-based compound database of over 1,000 compounds. It provides the capability to estimate compound properties that are not available in the database, including compound volatility and theoretical recovery. *CHEM9* is available from the CHIEF Website. Contact the CHEM9 hotline at (919) 541-5610 for more information.

WATER8 is an analytical model for estimating compound-specific air emissions from wastewater collection & treatment systems. *CHEMDAT8* is a spreadsheet that includes analytical models for estimating VOC emissions from treatment, storage and disposal facility processes. Contact the WATER8 hotline at (919) 541-5610 for more information.

The Personal Computer version of the *Biogenic Emissions Inventory System* (*BEIS*) allows users to estimate hourly emissions of biogenic volatile organic compound and soil nitrogen oxide emissions. *BEIS* is available from the *CHIEF Website*. Contact Tom Pierce at (919) 541-1375 for more information.

ONLINE TOOLS

Get connected with emission factor and inventory information on the Internet World Wide Web! The *EFIG Home Page* serves as a gateway to many related sites, including the Emission Inventory Improvement Program (EIIP) website, the Office of Mobile Sources and the Unified Air Toxics Website. To access most of the tools featured in this brochure, such as AP-42, the L&E documents, *FIRE* and *TANKS*, visit the *CHIEF Website*. Here is a list of our most popular websites:

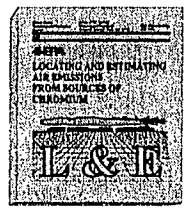
CHIEF Website ..... **www.epa.gov/ttn/chief/**
EIIP Website ..... **www.epa.gov/ttn/chief/eiip/**
Unified Air Toxics Website ..... **www.epa.gov/ttn/uatw/**
PM2.5 Resource Center **www.epa.gov/ttn/chief/eiip/pm25inventory/**
National Air Pollutant Emission Trends **www.epa.gov/ttn/chief/trends97/emtrnd.html**
1996 Emission Inventory Website ..... **www.epa.gov/ttn/chief/ei/**

The *CHIEF List Server* allows you to receive announcements relevant to the functions c EFIG and EIIP via e-mail. In addition, you will receive an electronic text version of EFIG quarterly publication, the *CHIEF Newsletter*. To subscribe, send E-mail tc **listserver@unixmail.rtpnc.epa.gov**. In your message type: **subscribe CHIEF** *Firstnam Lastname* (your first and last name).

HARD COPY TOOLS

The *Compilation of Air Pollutant Emission Factors*, AP-42 is the recommended source of air pollutant emission factors for both criteria and toxic emissions. AP-42 Volume I addresses hundreds of stationary, point, and area sources and Volume II deals with mobile sources. EPA emission rates for many polluting activities are obtained from source tests, material balance studies, and engineering estimates and then collected, approved, and compiled into the AP-42 document. AP-42 is available on the *CHIEF* website and from GPO. Call the GPO at 202-512-1800 to order.

The Emission Inventory Improvement Program (EIIP) is a joint program of the EPA, SAEWG, and STAPPA/ALAPCO. The ultimate goal of the EIIP is to provide cost-effective, reliable inventories by improving the quality of emissions data collected and provide for uniform reporting of this information. Their findings are available in a seven volume set of guidance reports, which are available on the EIIP website and from EFIG. For more information, call *Info CHIEF*.



This report series, titled *Locating And Estimating* (L&E) *Air Toxic Emissions From (or of) (Source Category or Substance) (e.g., Locating And Estimating Air Emissions From Sources Of Mercury)* characterize the source categories for which emissions of a toxic substance have been identified. These volumes include general descriptions of the emitting processes, identifying potential release points and emission factors. L&E documents are available from the *CHIEF* website and NTIS (see adjacent table).

Locating & Estimating Document Series

Substance or Source Category	EPA Publication #	Substance or Source Category	EPA Publication #
1,3-Butadiene	EPA-454/R-96-008 PB97-189680	Lead	EPA-454/R-98-006 PB99-116477
Acrylonitrile	EPA-450/4-84-007a PB84-200609	Manganese	EPA-450/4-84-007h PB86-117587
Arsenic & Arsenic Compounds	EPA-454/R-98-013 PB98-163132	Mercury & Mercury Compounds	EPA-454/R-97-012 PB98-117054
Benzene	EPA-454/R-98-011 PB98-159916	Methyl Chloroform	EPA-454/R-93-045 PB94-214137
Cadmium & Cadmium Compounds	EPA-454/R-93-040 PB94-173093	Methyl Ethyl Ketone	EPA-454/R-93-046 PB94-214194
Carbon Tetrachloride	EPA-450/4-84-007b PB84-200625	Methylene Chloride	EPA-454/R-93-006 PB93-207579
Chlorobenzenes	EPA-454/R-93-044 PB95-111340	Nickel	EPA-450/4-84-007f PB84-210968
Chloroform	EPA-450/4-84-007c PB84-200617/A03	Perchloroethylene/Trichlorethylene	EPA-450/2-89-013 PB89-235501/A08
Chromium	EPA-450/4-84-007g PB85-106474/A11	Phosgene	EPA-450/4-84-007i PB86-117595/A04
Chromium (Supplement)	EPA-450/2-89-002 PB90-103243/A04	Polychlorinated Biphenyls (PCB)	EPA-450/4-84-007n PB87-209540/A05
Dioxins & Furans	EPA-454/R-97-003 PB98-116650	Polycyclic Organic Matter (POM)/ Polycyclic Aromatic Hydrocarbons	EPA-450/R-98-014 PB98-1598882
Cyanide Compounds	EPA-450/R-93-041 PB94-118379/A07	Styrene	EPA-454/R-93-011 PB93-207520/A08
Epichlorohydrin	EPA-450/4-84-007j PB86-117603/A04	Toluene	EPA-454/R-93-047 PB94-177607
Ethylene Dichloride	EPA-450/4-84-007d PB84-239193/A05	Vinylidene Chloride	EPA-450/4-84-007k PB86-117611/A04
Ethylene Oxide	EPA-450/4-84-007l PB87-113973/A05	Xylene	EPA-454/R-93-048 PB95-123394
Formaldehyde	EPA-450/4-91-012 PB91-181842/A05		

EXEMPT VOC LIST

VOC (Volatile Organic Compounds) - For all areas in Missouri VOC means any compound of carbon, **excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate,** that participates in atmospheric photochemical reactions to produce ozone. The following compounds will **not** be considered VOC because of their known lack of participation in the atmospheric reactions to produce ozone:

1,1,1,-trichloroethane (methyl chloroform);
1,1,1,3,3,3-hexafluoropropane (HFC-236fa)
1,1,2,2,3-pentafluoropropane (HFC-245ca)
1,1,2,3,3-pentafluoropropane (HFC-245ea)
1,1,1,2,3-pentafluoropropane (HFC-245eb)
1,1,1,2,3,4,4,5,5,5-decafluoropentane (HFC-43-10mee)
1,1,1,3,3-pentafluoropropane (HFC-245fa)
1,1,1,2,3,3-hexafluoropropane (HFC-236ea)
1,1,1,3,3-pentafluorobutane (HFC-365mfc)
1,2-dichloro-1,1,2-trifluoroethane (HCFC-123a)
1,3-dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225cb)
1-chloro-1-fluoroethane (HCFC-151a)
1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxybutane ($C_4F_9OCH_3$)
2-(difluoromethoxymethyl)-1,1,1,2,3,3,3-heptafluoropropane $(CF_3)_2CFCF_2OCH_3$
1-ethoxy-1,1,2,2,3,3,4,4,4-nonafluorobutane ($C_4F_9OC_2H_5$)
2-(ethoxydifluoromethyl)-1,1,1,2,3,3,3-heptafluoropropane $(CF_3)_2CFCF_2OC_2H_5$
3,3-dichloro-1,1,1,2,2-pentafluoropropane (HCFC-225ca)
acetone;
1-chloro-1,1-difluoroethane (HCFC-142b);
chlorodifluoromethane (HCFC-22);
chlorofluoromethane (HCFC-31)
chloropentafluoroethane (CFC-115);
2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124);
dichlorodifluoromethane (CFC-12);
1,1-dichloro-1-fluoroethane (HCFC-141b);
1,2-dichloro-1,1,2,2-tetrafluoroethane (CFC-114);
1,1,1-trifluoro-2,2-dichloroethane (HCFC-123);
1,1-difluoroethane (HFC-152a);
difluoromethane (HFC-32)
ethane;
ethylfluoride (HFC-161)
methane;
methyl acetate
methylene chloride;
parachlorobenzotrifluoride (PCBTF)
pentafluoroethane (HFC-125);

perchloroethylene;
1,1,2,2-tetrafluoroethane (HFC-134);
1,1,1,2-tetrafluoroethane (HFC-134a);
trichlorofluoromethane (CFC-11);
1,1,2-trichloro-1,2,2-trifluoroethane (CFC-113);
1,1,1-trifluoroethane (HFC-143a);
trifluoromethane (HFC-23);
cyclic, branched, or linear, completely fluorinated alkanes;
cyclic, branched, or linear, completely fluorinated ethers with no unsaturations; cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations;
cyclic, branched or linear, completely methylated siloxanes; and
sulfur-containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorines.

VOC may be measured by a reference method, an equivalent method, an alternative method or by procedures specified in either 10 CSR 10-6.030 or 40 CFR part 60. These methods and procedures may measure nonreactive compounds, so an owner or operator must exclude these nonreactive compounds when determining compliance.

Updated 10/01

SECTION 112 HAZARDOUS AIR POLLUTANTS 5/4/99 update

The HAPs (Hazardous Air Pollutants) are separated into two categories based on the toxicity of each chemical. Each category has a different emission point reporting level. If a facility emits more than the reporting level for at least one HAP from a single emission point then the amount used and emitted must be reported on the Emission Inventory Questionnaire. NOTE: Criteria pollutant emissions should also be included when checking on the 200 pound reporting level.

Emission reporting levels are: Category 1 HAPs - 20 Lbs/Yr;
Category 2 HAPs - 200 Lbs/Yr

Chemical Abstracts Service Number	Pollutant	VOC	PM
CATEGORY 1 HAZARDOUS AIR POLLUTANTS			
20-01-9	Arsenic Compounds (inorganic including arsine)	No	Yes
1332-21-4	Asbestos	No	Yes
20-06-4	Chromium Compounds	No	Yes
302-01-2	Hydrazine	Yes	No
1746-01-6	2,3,7,8-Tetrachlorodibenzo-p-dioxin	No	No
CATEGORY 2 HAZARDOUS AIR POLLUTANTS			
75-07-0	Acetaldehyde	Yes	No
60-35-5	Acetamide	Yes	No
75-05-8	Acetonitrile	No	No
98-86-2	Acetophenone	Yes	No
53-96-3	2-Acetylaminofluorene	Yes	No
107-02-8	Acrolein	Yes	No
79-06-1	Acrylamide	Yes	No
79-10-7	Acrylic acid	Yes	No
107-13-1	Acrylonitrile	Yes	No
107-05-1	Allyl chloride	Yes	No
92-67-1	4-Aminobiphenyl	Yes	No
62-53-3	Aniline	Yes	No
90-04-0	o-Anisidine	Yes	No
71-43-2	Benzene (including benzene from gasoline)	Yes	No
92-87-5	Benzidine	Yes	No
98-07-7	Benzotrichloride	Yes	No
100-44-7	Benzyl chloride	Yes	No
92-52-4	Biphenyl	Yes	No
117-81-7	Bis(2-ethylhexyl)phthalate (DEHP)	Yes	No
542-88-1	Bis(chloromethyl) ether	Yes	No
75-25-2	Bromoform	No	No
106-99-0	1,3-Butadiene	Yes	No
156-62-7	Calcium cyanamide	Yes	No
133-06-2	Captan	Yes	No

63-25-2	Carbaryl	Yes	No
75-15-0	Carbon disulfide	Yes	No
56-23-5	Carbon tetrachloride	Yes	No
463-58-1	Carbonyl sulfide	Yes	No
120-80-9	Catechol	Yes	No
133-90-4	Chloramben	Yes	No
57-74-9	Chlordane	Yes	No
7782-50-5	Chlorine	No	No
79-11-8	Chloroacetic acid	Yes	No
532-27-4	2-Chloroacetophenone	Yes	No
108-90-7	Chlorobenzene	Yes	No
510-15-6	Chlorobenzilate	Yes	No
67-66-3	Chloroform	No	No
107-30-2	Chloromethyl methyl ether	Yes	No
126-99-8	Chloroprene	Yes	No
1319-77-3	Cresol/Cresylic acid (mixed isomers)	Yes	No
95-48-7	o-Cresol	Yes	No
108-39-4	m-Cresol	Yes	No
106-44-5	p-Cresol	Yes	No
98-82-8	Cumene	Yes	No
94-75-7	2,4-D (2,4-Dichlorophenoxyacetic Acid) (including salts and esters)	Yes	No
72-55-9	DDE (1,1-dichloro-2,2-bis(p-chlorophenyl) ethylene)	Yes	No
334-88-3	Diazomethane	Yes	No
132-64-9	Dibenzofuran	Yes	No
96-12-8	1,2-Dibromo-3-chloropropane	Yes	No
84-74-2	Dibutyl phthalate	Yes	No
106-46-7	1,4-Dichlorobenzene	Yes	No
91-94-1	3,3'-Dichlorobenzidine	Yes	No
111-44-4	Dichloroethyl ether (Bis[2-chloroethyl]ether)	Yes	No
542-75-6	1,3-Dichloropropene	Yes	No
62-73-7	Dichlorvos	Yes	No
111-42-2	Diethanolamine	Yes	No
64-67-5	Diethyl sulfate	Yes	No
119-90-4	3,3'-Dimethoxybenzidine	Yes	No
60-11-7	4-Dimethylaminoazobenzene	Yes	No
121-69-7	N,N-Dimethylaniline	Yes	No
119-93-7	3,3'-Dimethylbenzidine	Yes	No
79-44-7	Dimethylcarbamoyl chloride	Yes	No
68-12-2	N,N-Dimethylformamide	Yes	No
57-14-7	1,1-Dimethylhydrazine	Yes	No
131-11-3	Dimethyl phthalate	Yes	No
77-78-1	Dimethyl sulfate	Yes	No
534-52-1	4,6-Dinitro-o-cresol	Yes	No

	(including salts)		
51-28-5	2,4-Dinitrophenol	Yes	No
121-14-2	2,4-Dinitrotoluene	Yes	No
123-91-1	1,4-Dioxane (1,4-Diethyleneoxide)	Yes	No
122-66-7	1,2-Diphenylhydrazine	Yes	No
106-89-8	Epichlorohydrin (1-Chloro-2,3-epoxypropane)	Yes	No
106-88-7	1,2-Epoxybutane	Yes	No
140-88-5	Ethyl acrylate	Yes	No
100-41-4	Ethylbenzene	Yes	No
51-79-6	Ethyl carbamate (Urethane)	Yes	No
75-00-3	Ethyl chloride (Chloroethane)	Yes	No
106-93-4	Ethylene dibromide (Dibromoethane)	No	No
107-06-2	Ethylene dichloride (1,2-Dichloroethane)	No	No
107-21-1	Ethylene glycol	Yes	No
151-56-4	Ethyleneimine (Aziridine)	Yes	No
75-21-8	Ethylene oxide	Yes	No
96-45-7	Ethylene thiourea	Yes	No
75-34-3	Ethylidene dichloride (1,1-Dichloroethane)	Yes	No
50-00-0	Formaldehyde	Yes	No
76-44-8	Heptachlor	Yes	No
118-74-1	Hexachlorobenzene	Yes	No
87-68-3	Hexachlorobutadiene	Yes	No
58-89-9	1,2,3,4,5,6-Hexachlorocyclohexane (all stereo isomers, including lindane)	Yes	No
77-47-4	Hexachlorocyclopentadiene	Yes	No
67-72-1	Hexachloroethane	Yes	No
822-06-0	Hexamethylene diisocyanate	Yes	No
680-31-9	Hexamethylphosphoramide	Yes	No
110-54-3	Hexane	Yes	No
7647-01-0	Hydrochloric acid (Hydrogen chloride)	No	No
7664-39-3	Hydrogen fluoride (Hydrofluoric acid)	No	No
123-31-9	Hydroquinone	Yes	No
78-59-1	Isophorone	Yes	No
108-31-6	Maleic anhydride	Yes	No
67-56-1	Methanol	Yes	No
72-43-5	Methoxychlor	Yes	No
74-83-9	Methyl bromide (Bromomethane)	No	No
74-87-3	Methyl chloride	No	No

	(Chloromethane)		
71-55-6	Methyl chloroform (1,1,1-Trichloroethane)	No	No
78-93-3	Methyl ethyl ketone (2-Butanone)	Yes	No
60-34-4	Methylhydrazine	Yes	No
74-88-4	Methyl iodide (Iodomethane)	Yes	No
108-10-1	Methyl isobutyl ketone (Hexone)	Yes	No
624-83-9	Methyl isocyanate	Yes	No
80-62-6	Methyl methacrylate	Yes	No
1634-04-4	Methyl tert-butyl ether	Yes	No
101-14-4	4,4'-Methylenebis(2-chloroaniline)	Yes	No
75-09-2	Methylene chloride (Dichloromethane)	No	No
101-68-8	4,4'-Methylenediphenyl diisocyanate (MDI)	Yes	No
101-77-9	4,4'-Methylenedianiline	Yes	No
91-20-3	Naphthalene	Yes	No
98-95-3	Nitrobenzene	Yes	No
92-93-3	4-Nitrobiphenyl	Yes	No
100-02-7	4-Nitrophenol	Yes	No
79-46-9	2-Nitropropane	Yes	No
684-93-5	N-Nitroso-N-methylurea	Yes	No
62-75-9	N-Nitrosodimethylamine	Yes	No
59-89-2	N-Nitrosomorpholine	Yes	No
56-38-2	Parathion	Yes	No
82-68-8	Pentachloronitrobenzene (Quintobenzene)	Yes	No
87-86-5	Pentachlorophenol	Yes	No
108-95-2	Phenol	Yes	No
106-50-3	p-Phenylenediamine	Yes	No
75-44-5	Phosgene	Yes	No
7803-51-2	Phosphine	No	No
7723-14-0	Phosphorus	No	No
85-44-9	Phthalic anhydride	Yes	No
1336-36-3	Polychlorinated biphenyls (Aroclors)	Yes	No
1120-71-4	1,3-Propane sultone	Yes	No
57-57-8	beta-Propiolactone	Yes	No
123-38-6	Propionaldehyde	Yes	No
114-26-1	Propoxur (Baygon)	Yes	No
78-87-5	Propylene dichloride (1,2-Dichloropropane)	Yes	No
75-56-9	Propylene oxide	Yes	No
75-55-8	1,2-Propylenimine (2-Methylaziridine)	Yes	No

91-22-5	Quinoline	Yes	No
106-51-4	Quinone (p-Benzoquinone)	Yes	No
100-42-5	Styrene	Yes	No
96-09-3	Styrene oxide	Yes	No
79-34-5	1,1,2,2-Tetrachloroethane	Yes	No
127-18-4	Tetrachloroethylene (Perchloroethylene)	No	No
7550-45-0	Titanium tetrachloride	No	No
108-88-3	Toluene	Yes	No
95-80-7	Toluene-2,4-diamine	Yes	No
584-84-9	2,4-Toluene diisocyanate	Yes	No
95-53-4	o-Toluidine	Yes	No
8001-35-2	Toxaphene (chlorinated camphene)	Yes	No
120-82-1	1,2,4-Trichlorobenzene	Yes	No
79-00-5	1,1,2-Trichloroethane	Yes	No
79-01-6	Trichloroethylene	Yes	No
95-95-4	2,4,5-Trichlorophenol	Yes	No
88-06-2	2,4,6-Trichlorophenol	Yes	No
121-44-8	Triethylamine	Yes	No
1582-09-8	Trifluralin	Yes	No
540-84-1	2,2,4-Trimethylpentane	Yes	No
108-05-4	Vinyl acetate	Yes	No
593-60-2	Vinyl bromide	Yes	No
75-01-4	Vinyl chloride	Yes	No
75-35-4	Vinylidene chloride (1,1-Dichloroethylene)	Yes	No
1330-20-7	Xylenes (mixed isomers)	Yes	No
95-47-6	o-Xylene	Yes	No
108-38-3	m-Xylene	Yes	No
106-42-3	p-Xylene	Yes	No
20-00-8	Antimony Compounds	No	Yes
20-03-1	Beryllium Compounds	No	Yes
20-04-2	Cadmium Compounds	No	Yes
20-07-5	Cobalt Compounds	No	Yes
8007-45-2	Coke Oven Emissions	No	No
20-09-7	Cyanide Compounds1	No	No
20-10-0	Glycol ethers2	Yes	No
20-11-1	Lead Compounds	No	Yes
20-12-2	Manganese Compounds	No	Yes
20-13-3	Mercury Compounds (Alkyl&Aryl)	Yes	No
20-13-3	Mercury Compounds (Inorganic)	No	No
TP14	Fine mineral fibers3	No	Yes
20-14-4	Nickel Compounds	No	Yes
TP15	Polycyclic Organic Matter4	Yes	No
TP16	Radionuclides (including radon)5	No	Yes
20-16-6	Selenium Compounds	No	Yes

NOTE: For all listings above which contain the word "compounds" and for glycol ethers, the following applies: Unless otherwise specified, these listings are defined as including any unique chemical substance that contains the named chemical (i.e., antimony, arsenic, etc.) as part of that chemical's infrastructure.

1--X'CN where X = H' or any other group where a formal dissociation may occur. For example, KCN or Ca(CN)2.

2--On January 12, 1999 (FR64:1780), EPA proposed to modify the definition of glycol ethers to exclude surfactant alcohol ethoxylates and their derivatives (SAED). This proposal was based on EPA's finding that emissions, ambient concentrations, bioaccumulation, or deposition of SAED may not reasonably be anticipated to cause adverse human health or environmental effects. EPA also proposed to make conforming changes in the definition of glycol ethers with respect to the designation of hazardous substances under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

The proposal reads as follows:

"The definition of the glycol ethers category of hazardous air pollutants, as established by 42 U.S.C. 7412(b)(1) includes mono- and di-ethers of ethylene glycol, diethylene glycol, and triethylene glycol R-(OCH2CH2)n-OR'

Where:

n= 1, 2, or 3
R= alkyl C7 or less, or phenyl or alkyl substituted phenyl
R'= H, or alkyl C7 or less, or carboxylic acid ester, sulfate, phosphate, nitrate, or sulfonate."

3 (Under Review)

4 (Under Review)

5A type of atom which spontaneously undergoes radioactive decay.

Code	Control Device Description
000	NO EQUIPMENT -- NOT VALIDATED
001	WET SCRUBBER HIGH EFFICIENCY
002	WET SCRUBBER MEDIUM EFFICIENCY
003	WET SCRUBBER LOW EFFICIENCY
004	GRAVITY COLLECT0R HIGH EFFICIENCY
005	GRAVITY COLLECTOR MEDIUM EFFICIENCY
006	GRAVITY COLLECTOR LOW EFFICIENCY
007	CENTRIFUGAL COLLECTOR HIGH EFFICIENCY
008	CENTRIFUGAL COLLECTOR MEDIUM EFFICIENCY
009	CENTRIFUGAL COLLECTOR LOW EFFICIENCY
010	ELECTROSTATIC PRECIPITATOR HIGH EFFICIENCY
011	ELECTROSTATIC PRECIPITATOR MEDIUM EFFICIENCY
012	ELECTROSTATIC PRECIPITATOR LOW EFFICIENCY
013	GAS SCRUBBER (GENERAL, NOT CLASSIFIED)
014	MIST ELIMINATOR HIGH VELOCITY, I.E., V 250 FT/MIN
015	MIST ELIMINATOR LOW VELOCITY, I.E., V 250 FT/MIN
016	FABRIC FILTER HIGH TEMPERATURE, I.E., T 250 F
017	FABRIC FILTER MEDIUM TEMPERATURE, I.E., 180 F T 250 F
018	FABRIC FILTER LOW TEMPERATURE, I.E., T 180 F
019	CATALYTIC AFTERBURNER
020	CATALYTIC AFTERBURNER WITH HEAT EXCHANGER
021	DIRECT FLAME AFTERBURNER
022	DIRECT FLAME AFTERBURNER WITH HEAT EXCHANGER
023	FLARING
024	MODIFIED FURNACE OR BURNER DESIGN "INCL. LOW NOX BURNER DES"
025	STAGED COMBUSTION
026	FLUE GAS RECIRCULATION
027	REDUCED COMBUSTION AIR PREHEATING
028	STEAM OR WATER INJECTION
029	LOW EXCESS - AIR FIRING
030	USE OF FUEL WITH LOW NITROGEN CONTENT
031	AIR INJECTION
032	AMMONIA INJECTION
033	CONTROL OF %02 IN COMBUSTION AIR (OFF-STOICHIOMETRIC FIRING)
034	WELLMAN-LORD/SODIUM SULFITE SCRUBBING
035	MAGNESIUM OXIDE
036	DUAL ALKALI SCRUBBING
037	CITRATE PROCESS SCRUBBING
038	AMMONIA SCRUBBING
039	CATALYTIC OXIDATION FLUE GAS DESULFURIZATION
040	ALKALIZED ALUMINA
041	DRY LIMESTONE INJECTION
042	WET LIMESTONE INJECTION
043	SULFURIC ACID PLANT CONTACT PROCESS
044	SULFURIC ACID PLANT DOUBLE CONTACT PROCESS
045	SULFUR PLANT
046	PROCESS CHANGE
047	VAPOR RECOVERY SYSTEM (INC. CONDENSERS, HOODING & OTHER ENC)
048	ACTIVATED CARBON ADSORPTION
049	LIQUID FILTRATION SYSTEM
050	PACKED-GAS ABSORPTION COLUMN
051	TRAY-TYPE GAS ABSORPTION COLUMN
052	SPRAY TOWER
053	VENTURI SCRUBBER

Code	Control Device Description
054	PROCESS ENCLOSED
055	IMPINGEMENT PLATE SCRUBBER
056	DYNAMIC SEPARATOR (DRY)
057	DYNAMIC SEPARATOR (WET)
058	MAT OR PANEL FILTER
059	METAL FABRIC FILTER SCREEN (COTTON GINS)
060	PROCESS GAS RECOVERY
061	DUST SUPPRESSION BY WATER SPRAYS
062	DUST SUPPRESSION BY CHEMICAL STABILIZERS OR WETTING AGENTS
063	GRAVEL BED FILTER
064	ANNULAR RING FILTER
065	CATALYTIC REDUCTION
066	MOLECULAR SIEVE
067	WET LIME SLURRY SCRUBBING
068	ALKALINE FLY ASH
069	SODIUM CARBONATE SCRUBBING
070	SODIUM-ALKALI SCRUBBING
071	FLUID BED DRY SCRUBBER
072	TUBE & SHELL CONDENSER
073	REFRIGERATED CONDENSER
074	BAROMETRIC CONDENSER
075	SINGLE CYCLONE
076	MULTIPLE CYCLONE WITHOUT FLYASH REINJECTION
077	MULTIPLE CYCLONE WITH FLYASH REINJECTION
078	BAFFLE
079	DRY ELECTROSTATIC GRANULAR FILTER
080	CHEMICAL OXIDATION
081	CHEMICAL REDUCTION
082	OZONATION
083	CHEMICAL NEUTRALIZATION
084	ACTIVATED CLAY ADSORPTION
085	WET CYCLONIC SEPARATOR
086	WATER CURTAIN
087	NITROGEN BLANKET
088	CONSERVATION VENT
089	BOTTOM FILLING
090	CONVERSION TO VARIABLE VAPOR SPACE TANK
091	CONVERSION TO FLOATING ROOF TANK
092	CONVERSION TO PRESSURIZED TANK
093	SUBMERGED FILLING
094	UNDERGROUND TANK
095	WHITE PAINT
096	VAPOR LOCK BALANCE RECOVERY SYSTEM
097	INSTALL. OF SECONDARY SEAL FOR EXTERNAL FLOATING ROOF TANK
098	MOVING BED DRY SCRUBBER
099	OTHER/NOT CLASSIFIED -- NOT VALIDATED
101	HIGH EFFICIENCY PARTICULATE AIR FILTER

FIPS	County Code	Regional Office	County Name	FIPS	County Code	Regional Office	County Name	FIPS	County Code	Regional Office	County Name
001	0020	NERO	Adair	079	1880	NERO	Grundy	157	3620	SERO	Perry
003	0040	KCRO	Andrew	081	1940	KCRO	Harrison	159	3660	JCRO	Pettis
005	0060	KCRO	Atchison	083	2020	KCRO	Henry	161	3680	JCRO	Phelps
007	0080	NERO	Audrain	085	2060	SWRO	Hickory	163	3700	NERO	Pike
009	0140	SWRO	Barry	087	2120	KCRO	Holt	165	3740	KCRO	Platte
011	0160	SWRO	Barton	089	2140	NERO	Howard	167	3780	SWRO	Polk
013	0180	KCRO	Bates	091	2160	SERO	Howell	169	3860	JCRO	Pulaski
015	0250	JCRO	Benton	093	2200	SERO	Iron	171	3880	NERO	Putnam
017	0340	SERO	Bollinger	095	2240	KCRO	Jackson	173	3900	NERO	Ralls
019	0380	JCRO	Boone	097	2260	SWRO	Jasper	175	3920	NERO	Randolph
021	0520	KCRO	Buchanan	099	2280	SLRO	Jefferson	177	3940	KCRO	Ray
023	0560	SERO	Butler	101	2340	KCRO	Johnson	179	3980	SERO	Reynolds
025	0580	KCRO	Caldwell	103	2480	NERO	Knox	181	4040	SERO	Ripley
027	0620	JCRO	Callaway	105	2500	SWRO	Laclede	183	4160	SLRO	St. Charles
029	0640	JCRO	Camden	107	2540	KCRO	Lafayette	185	4200	SWRO	St. Clair
031	0720	SERO	Cape Gir.	109	2580	SWRO	Lawrence	187	4220	SERO	St. Francois
033	0740	NERO	Carroll	111	2640	NERO	Lewis	510	4280	SL-	St. Louis City
035	0780	SERO	Carter	113	2700	SLRO	Lincoln	189	4300	SLC	St. Louis
037	0840	KCRO	Cass	115	2720	NERO	Linn	186	4340	SERO	Ste Genevieve
039	0860	SWRO	Cedar	117	2740	NERO	Livingston	195	4380	NERO	Saline
041	0920	NERO	Chariton	119	2780	SWRO	McDonald	197	4400	NERO	Schuyler
043	0980	SWRO	Christian	121	2820	NERO	Macon	199	4420	NERO	Scotland
045	1000	NERO	Clark	123	2840	SERO	Madison	201	4440	SERO	Scott
047	1020	KCRO	Clay	125	2920	JCRO	Maries	203	4480	SERO	Shannon
049	1080	KCRO	Clinton	127	2940	NERO	Marion	205	4500	NERO	Shelby
051	1100	JCRO	Cole	129	3000	NERO	Mercer	207	4600	SERO	Stoddard
053	1140	JCRO	Cooper	131	3040	JCRO	Miller	209	4620	SWRO	Stone
055	1160	JCRO	Crawford	133	3060	SERO	Mississippi	211	4680	NERO	Sullivan
057	1240	SWRO	Dade	135	3140	JCRO	Moniteau	213	4720	SWRO	Taney
059	1260	SWRO	Dallas	137	3160	NERO	Monroe	215	4740	SERO	Texas
061	1280	KCRO	Daviess	139	3180	JCRO	Montgomery	217	4860	SWRO	Vernon
063	1300	KCRO	DeKalb	141	3200	JCRO	Morgan	219	4880	SLRO	Warren
065	1360	SERO	Dent	143	3300	SERO	New Madrid	221	4940	SERO	Washington
067	1420	SWRO	Douglas	145	3320	SWRO	Newton	223	4960	SERO	Wayne
069	1440	SERO	Dunklin	147	3340	KCRO	Nodaway	225	5000	SWRO	Webster
071	1680	SLRO	Franklin	149	3460	SERO	Oregon	227	5140	KCRO	Worth
073	1760	JCRO	Gasconade	151	3480	JCRO	Osage	229	5160	SWRO	Wright
075	1780	KCRO	Gentry	153	3520	SWRO	Ozark	777	7777		Portables
077	1860	SWRO	Greene	155	3600	SERO	Pemiscot				

AP-42 Updates

The following is a list of the more recent updates to the AP-42, which are included in Supplements F and G. Please refer to the EPA Tools brochure included in the EIQ instruction packet on the different methods to obtain copies of paper or electronic versions of the updated sections or you can contact EPA at (919) 541-5285.

Chapter & Section	Description	Changes	Date
2002 Supplement			
10.5	Plywood Manufacturing	Major Revision	1-02
10.6.1	Waferboard & Oriented Strand Manufacturing	Major Revision	3-02
10.6.2	Particleboard Manufacturing	Major Revision	6-02
10.6.3	Medium Density Manufacturing	Major Revision	8-02
10.6.4	Hardboard & Fiberboard Manufacturing	New Section	10-02
13.2.1	Paved Roads	Major Revision	10-02
2001 Supplement			
1.6	Wood Residue Combustion in Boilers	Major Revision	7-01
11.1	Hot Mix Asphalt Plants	Major Revision	12-00
11.12	Concrete Batching	Major Revision	10-01

LOCAL AGENCY EIQ CONTACT

City of St. Louis	St. Louis County
Andy Hilliker City of St. Louis Division of Air Pollution Control 1415 North 13th Street St. Louis, MO 63106 **Phone:** (314) 613-7300 **Fax:** (314) 613-7275	Sue Ehrhardt St. Louis County Department of Health Air Pollution Control Section 111 South Meramec Clayton, MO 63105 **Phone:** (314) 615-8916 **Fax:** (314) 615-8951
City of Kansas City	**City of Springfield**
Michelle Meyer Kansas City Health Department Air Quality Program 2400 Troost Avenue 3rd Floor, Suite 3000 Kansas City, MO 64108 **Phone:** (816) 513-6314 **Fax:** (816) 513-6290	Brian Adams Springfield-Greene County Air Pollution Control Authority 227 East Chestnut Expressway Springfield, MO 65802 **Phone:** (417) 864-1662 **Fax:** (417) 864-1499

Missouri Department of Natural Resources

Air Pollution Control Program	Environmental Assistance Office
Emissions Inventory Unit 205 Jefferson Street P.O. Box 176 Jefferson City, MO 65102 **Phone:** (573) 751-4817 **Fax:** (573) 751-2706	Environmental Assistance Office 1659-B East Elm P.O. Box 176 Jefferson City, MO 65102 **Phone:** (800)361-4827 or (573)526-6627 **Fax:** (573) 526-5808 St. Louis Contact Nancy Morgan (314) 301-7600 Kansas City Contact Gus Ralston (816) 554-4100

CHECKLIST

Before Mailing Your EIQ, Have You...

_____ 1. signed and dated the EIQ (Form 1.0)?

_____ 2. enclosed all worksheets used and listed them on Form 1.2?

_____ 3. placed county and plant numbers on your fee payment check and on all forms and documentation?

_____ 4. requested that the county and plant identification be included with the check? (This applies if check will be mailed from corporate headquarters.)

_____ 5. made sure that all units used are identical to the units associated with the SCC assigned to the point?

_____ 6. supplied a "best available" maximum hourly design rate for each process?

_____ 7. included necessary documentation such as flow charts and Material Safety Data Sheets?

_____ 8. completed all required information on Form 2.0, such as SCC number, annual throughput, maximum hourly design rate, emission factor, actual emissions?

_____ 9. reviewed list of AP-42 Section Updates to see if applied to your facility?

_____ 10. checked Exempt VOC List?

_____ 11. read the Overview for the description of each form. If you need additional forms, notify your local air pollution agency on the EIQ Contact List?

_____ 12. identified source of emission factor on Form 2.0 and included, if applicable, the AP-42 section, table or figure number?

Please **DO NOT RETURN** this checklist!