

## **Appendix B: Indiana Toxic Emissions Inventory**

### **BACKGROUND**

The Indiana Department of Environmental Management, Office of Air Quality (OAQ), has developed a statewide inventory of Hazardous Air Pollutants (HAPS) for the Great Lakes Air Toxic Emissions Inventory Project for calendar year 2002.

The 2002 inventory includes HAPs data for point, area and mobile sources. Reported point source emissions information from TRI and voluntary reported information were used. Point source estimates were also made using information from the state criteria pollutant inventory database and the Factor Information Retrieval System (FIRE v6.24). Area source estimates were made using published data, FIRE emission factors, speciation profiles, and reported information. Mobile Sources include on road and off road sources. These were estimated using EPA's National Mobile Emissions Model (NMIM).

### **POINT SOURCE DATA SOURCES**

The point source inventory consists of HAP emissions data voluntarily reported by sources, data from U.S.EPA Community Right to Know Toxic Release Inventory (TRI), and estimates made by IDEM. Typically IDEM will use reported information from either TRI or data voluntarily reported to the state and supplement that information with estimates of other non reported HAPs when developing these inventories.

### **POINT SOURCE REPORTED EMISSIONS**

As part of the annual emissions reporting package Indiana requests information on hazardous air pollutant emissions from point sources required to report to the State Environmental Programs System (STEPS). Indiana has included this voluntarily reported information, and information from the TRI database, for many point sources. The voluntarily reported emissions and TRI data are primarily source totals, however some sources did report process level HAPs in STEPS. For reporting purposes IDEM attempted to assign SCC Codes to source reported totals based on the primary process at the source.

### **POINT SOURCE EMISSION ESTIMATIONS**

Large point sources throughout the state are required to submit an annual criteria pollutant emissions report under the state emission statement rule, Title 326 Indiana Administrative Code, Article 2, Rule 6 (326 IAC 2-6). The data submitted by sources are managed using the State Environmental Programs System (STEPS). The information from STEPS is used for making estimates for point sources included in the toxics inventory. As part of the annual criteria pollutant emissions reporting package sent to sources subject to this rule IDEM explains this inventory effort and requests that sources voluntarily provide HAPS emissions data.

In some cases emissions of certain HAPs are not reported. For these processes, emission estimates were typically made using a generic emission factor approach. These estimates were

made using STEPS information, U.S.EPA FIRE (v 6.24) emission factors, and information from AP-42. Specific data used for making emission estimates using the emission factor approach include source classification codes (SCC) codes, fuel process rates (FPRT), conversion factors, FIRE emission factors, reported criteria pollutant emissions and the efficiencies of any capture and control equipment used. All estimated emissions are at the process level. Source specific stack test data were used where available. In cases where estimated emissions have been included as part of this inventory project it must be noted that these estimates have not been verified by the sources as being true and accurate, and should therefore be used with caution.

Because of the uncertainty associated with the effectiveness of various control devices in controlling hazardous air pollutants (HAPS), controlled emission factors were given priority and used wherever they best matched the source control devices, with consideration also given to U.S.EPA's emission factor quality rating.

In a few cases the FIRE database did not have usable generic emission factors, or better factors were available. For example, IDEM used emission factors developed by EPA as part of the utility study for mercury emission estimates for coal burning electric utilities, and used fuel process rates reported by the sources to estimate emission in 2002. Mercury emissions were also estimated for Indiana's electric arc furnaces, using reported information and existing stack test information, because no FIRE emission factors were available. Instead of using generic FIRE emission factors for coke ovens, IDEM worked with the sources to develop site specific emissions estimates for coke oven emissions based on leak information obtained during NESHAP compliance inspections. For some sources such as landfills, gasoline handling, fiberglass manufacturing, and soybean processing, IDEM developed speciation profiles based on available information and used those to estimate HAP emissions from source reported VOC information, because there were no generic FIRE emission for these sources.

## AREA SOURCES

Sources included in the area source inventory are those sources which are generally too small and/or too numerous to survey individually. Area sources include stationary sources which fall below reporting levels for the emissions statement rule or TRI, such as dry cleaners and gas stations, and consumer and commercial based activities (residential fuel consumption and consumer products). The area source inventory consists of estimates made using data sets such as population data, employment data, agriculture data, sales data, and other data from different local, state and federal agencies. 2002 data were used wherever possible. In a few cases EPA's 1999 NEI estimates were used. It should be noted that EPA's draft 2002 NEI has recently been released but none of the area source data has been incorporated into Indiana's 2002 Great Lakes Inventory effort.

The following area source categories were inventoried:

Area Sources
AUTO REFINISHING AND ARCH COATINGS
COMMERCIAL/CONSUMER PRODUCTS

<b>Area Sources</b>
DEGREASERS: ALL TYPES
DRY CLEANING: PERC
ELECTROPLATING
ETHYLENE OXIDE STERLIZERS
FOREST FIRES AND PRESCRIBED BURNING
FOSSIL FUEL COMBUSTION
GASOLINE DISPENSING AND CONTAINERS
GRAPHIC ARTS
HUMAN CREMATION
INDUSTRIAL SURFACE COATINGS
MISC MERCURY SOURCES
PESTICIDE USE
PUBLICLY OWNED TREATMENT WORKS
STRUCTURAL FIRES
TRAFFIC MARKINGS

The methodology documents developed by the Great Lakes Air Emissions Inventory Steering Committee and U.S. EPA's Emissions Inventory Improvement Program (EIIP) were followed where applicable. The following is a brief description of the activity data used to estimate area source categories.

***Agricultural Pesticide Use***

The amount of atrazine used in the state and county acres planted with corn were obtained from Purdue University's Agricultural Statistics web site (<http://www.nass.usda.gov/in/annbul/0203/03crops.html>). Emission factors were from the GLC document.

***Chrome Electroplating***

Estimates were made from stack test information and operating data included in inspection and compliance reports for sources subject to the Chrome Plating NESHAP.

***Consumer and Commercial Solvent Use***

Estimates were made using county populations and per capita HAP emission factors. (<http://www.ibrc.indiana.edu/population/2002estimates/e2002county.html>)

***Commercial / Industrial Dry Cleaning***

County total emissions were calculated using information from a compliance dry cleaning database. The density of perchloroethylene was used to convert gallons consumed into pounds for air emission estimates.

***Forrest Fires and Prescribed Burning***

The acres of wood and grassland burned by county were obtained from the Department of Natural Resources from the State Forest Division. Methodologies and emission factors from the GLC document were used.

### ***Fossil Fuel – Residential / Commercial Fuel Combustion***

Residential – The county number of residential housing units using coal was obtained from 2000 Census of Housing, Detailed Housing Characteristics. The amount of fuel used by residential units was obtained from Energy Information Administration. Fuel use data is for 2000.

Emission factors were from the GLC document.

[http://factfinder.census.gov/home/saff/main.html?\\_lang=en](http://factfinder.census.gov/home/saff/main.html?_lang=en)

<http://www.eia.doe.gov/index.html>

Commercial – The county number of commercial employees was obtained from 2002 County Business Patterns. The amount of fuel used by the commercial sector was obtained from Energy Information Administration. Fuel use data is for 2000.

<http://www.census.gov/epcd/cbp/view/cbpview.html>

### ***Gasoline Dispensing and Containers***

Information on statewide total fuel use was obtained from the Federal Highway Administration's 2002 Highway Statistics. Gallons per county were estimated based on county sales in NAICS 4471X from 1997 US Census Bureau Economic data. VOC emission factors were from EPA's Mobile 6 model for vehicle refueling, and from AP-42 for all the other categories. For the 2002 inventory emission estimates for gasoline storage containers (gas cans) have been included following the methodology developed by the South Coast Air Quality Management District. HAP speciation profiles from the Gasoline Distribution MACT were used to estimate HAP emissions.

<http://www.fhwa.dot.gov/policy/ohim/hs02/index.htm>

<http://www.eia.doe.gov/index.html>

### ***Graphic Arts***

State specific emission factors and air toxic speciation profiles were developed from 2002 data reported by graphic arts sources in the point source inventory. County employment data was obtained from the 2002 Harris Industrial Directory.

### ***Hospital Sterilizers***

Information on hospital sizes (determined by the number of hospital beds) in each county is available from the Indiana Department of Health. Emission factors were from the GLC document.

<http://www.in.gov/isdh/regsvcs/acc/services/2001/index.htm>

### ***Human Cremation***

Data on the number of human cremations in the state were obtained from the Indiana Department of Health. These were apportioned by County of residence. Emission factors were from the GLC document.

### ***Industrial Surface Coatings***

The industrial surface coating estimates are based on SIC employment data and population data. Estimates made from employment data were obtained for the 2001 Great Lakes Inventory. Population data was obtained from the Indiana Business Research Center.

<http://www.ibrc.indiana.edu/population/2002estimates/e2002county.html>

### ***Miscellaneous Mercury Area Sources***

This category includes estimates for fluorescent lamp breakage, dental preparation and general laboratory use. National mercury emissions data from EPA's 1999 NEI were used to estimate 2002 emissions.

### ***Miscellaneous Surface Coatings***

Architectural surface coating emissions were calculated based on population data obtained from the Indiana Business Research Center. Emission factors were from the GLC document.

Automobile refinishing emissions were obtained from the 1999 NEI.

<http://www.ibrc.indiana.edu/population/2002estimates/e2002county.html>

### ***Publicly Owned Treatment Works***

Average daily flow rates for 2002 for all Publicly Owned Treatment Works (POTW's) were obtained from the Office of Water Quality (OWQ). These are the same estimates that are included in the 2001 Great Lakes Inventory.

### ***Solvent Metal Cleaning***

The solvent metal cleaning estimates are based on employment data. Data from the 2001 Great Lakes Inventory were used.

### ***Structure Fires***

The state total number of residential and structure fires was obtained from the National Fire Protection Agency. Emission factors were from the GLC document.

<http://www.nfpa.org/Research/NFPAFactSheets/HomeFire/HomeFire.asp>

### ***Traffic Markings***

Estimates of roadway paint emissions were determined based on data provided by INDOT.

## **ON-ROAD MOBILE SOURCES**

On road vehicle emissions were calculated using EPA's National Mobile Inventory Model (NMIM), dated May 12, 2004. Monthly calculations were made by County and SCC Code for 2002. Refueling emissions were not included. All pollutants were included. Model output data were queried using MySQL and MSAccess. Monthly emission estimates were summed by County and SCC code to arrive with the annual total. Defaults included in the NMIM model for on road mobile source inputs were used. The NMIM calculates emissions for the following on road vehicle types and road types.

<b>Vehicle Types</b>
2B Heavy Duty Diesel Vehicles (2BHDDV)
Buses Heavy Duty Diesel Vehicles (BUSES)
Heavy Heavy Duty Diesel Vehicles (HHDDV)
Light Duty Diesel Trucks (LDDT)
Light Duty Diesel Vehicles (LDDV)
Light Heavy Duty Diesel Vehicles (LHDDV)
Medium Heavy Duty Diesel Vehicles (MHDDV)

<b>Vehicle Types</b>
Heavy Duty Gasoline Vehicles (HDGV)
Light Duty Gasoline Trucks 1 (LDGT1)
Light Duty Gasoline Trucks 2 (LDGT2)
Light Duty Gasoline Vehicles (LDGV)
Motorcycles (MC)

<b>Road Types</b>
Collector: Urban Total
Interstate: Rural Total
Interstate: Urban Total
Local: Rural Total
Local: Urban Total
Major Collector: Rural Total
Minor Arterial: Rural Total
Minor Arterial: Urban Total
Minor Collector: Rural Total
Other Freeways & Expressways: Urban Total
Other Principal Arterial: Rural Total
Other Principal Arterial: Urban Total

## **OFF-ROAD MOBILE SOURCES**

Off Road vehicle emissions were also calculated using NMIM. NMIM calculates for all off road categories, except locomotives, aircraft and commercial marine vessels. Monthly calculations were made by County and SCC Code for 2002. In some cases in each SCC code there are multiple estimates due to engine size and horsepower rating differences for the same equipment. Refueling emissions were not included. All pollutants were included. Monthly emission estimates were summed by County and SCC code to arrive with the annual total using MySQL and MSAccess. Activity data provided by LADCO (Lake Michigan Air Directors Consortium) were used to estimate HAPs for certain non road mobile source categories. Default data included in the model were used to estimate the other non road categories. The NMIM provides estimates for residential and commercial 2 stroke and 4 stroke gasoline engines, and diesel engines, for the following equipment types:

<b>Equipment Types</b>
CONSTRUCTION EQUIPMENT
FARM EQUIPMENT
INDUSTRIAL EQUIPMENT
LAWN & GARDEN EQUIPMENT
LIGHT COMMERCIAL EQUIPMENT
LOGGING EQUIPMENT
MINING EQUIPMENT
RAILROAD EQUIPMENT

<b>Equipment Types</b>
RECREATIONAL BOATS
RECREATIONAL VEHICLES

For more information on the individual pieces of equipment included in each category please see the NMIM model.

***Aircraft***

Aircraft emissions were estimated for all airports in Indiana using operations data obtained from the Indiana Department of Transportation’s (INDOT) website (<http://www.state.in.us/dot/modetrans/airports/aerials.html>) for all HAPs except lead. Lead estimates were obtained from EPA’s 1999 NEI. INDOT maintains operations information for four general types of aircraft (commercial, air taxi, general aviation and military). Each operation represents either a landing or a takeoff, so the number of operations was divided by two to equal a Landing/TakeOff (LTO) cycle. Each airport was entered into Rapids as an individual source. Criteria pollutant emission factors were developed using the Federal Aviation Administration Aircraft Engine and Emission Database (FAAED) and speciation profiles from RAPIDS were used to estimate HAP emissions.

***Locomotives and Commercial Marine Vessels***

Emissions data for Locomotives and Commercial Marine are from EPA’s draft 2002 National Emissions Inventory (NEI). These have been included as non road mobile sources.

## Indiana - Statewide Emissions (lb/yr)

Pollutant Name (CAS)	Area Source Emissions	Non-road Emissions	On-road Emissions	Point Source Emissions	Total Emissions
Acenaphthene (83-32-9)	3816	1390	1476	32.96	6716
Acenaphthylene (208-96-8)	80,830	3628	7865	439.2	92,760
Acetaldehyde (75-07-0)	3734	951,900	1,655,000	230,600	2,841,000
Acetamide (60-35-5)	0.7023				0.7023
Acetonitrile (75-05-8)				77,230	77,230
Acetophenone (98-86-2)	52.11			10,320	10,380
Acrolein (107-02-8)	45,110	99,920	172,300	49,610	367,000
Acrylamide (79-06-1)				1.2	1.2
Acrylic acid (79-10-7)	0.02181			181	181
Acrylonitrile (107-13-1)				4071	4071
Allyl chloride (107-05-1)				38	38
Aniline (62-53-3)				0.08	0.08
Anthracene (120-12-7)	5340	776.7	1766	2254	10,140
Antimony (7440-36-0)	4.9			4856	4860
Arsenic (7440-38-2)	777.2			30,160	30,940
Atrazine (1912-24-9)	998,400				998,400
Benz(a)anthracene (56-55-3)	7667	221.6	394.9	9226	17,510
Benzo(g,h,i)perylene (191-24-2)	1526	437.1	514.8	1243	3720
Benzene (71-43-2)	1,253,000	2,401,000	8,633,000	400,100	12,690,000
Benzidine (92-87-5)				0.00012	0.00012
Benzo(a)pyrene (50-32-8)	1535	144.5	250.2	5049	6,979
Benzo(b)fluoranthene (205-99-2)	2288	124.3	277.1	2.209	2692
Benzo(k)fluoranthene (207-08-9)	762.9	116.2	277.1	0.5721	1157
Benzyl chloride (100-44-7)				37,650	37,650
Beryllium (7440-41-7)	132.7	30.85		2890	3053
Biphenyl (92-52-4)				1287	1287
Bromoform (75-25-2)				2101	2101
Methyl bromide (74-83-9)	1,368,000			24,880	1,392,000
1,3-Butadiene (106-99-0)	2686	361,400	1,026,000	13,340	1,403,000
Cadmium (7440-43-9)	381.5	37.4		4106	4525
Carbon disulfide (75-15-0)				62,270	62,270
Carbon tetrachloride (56-23-5)	2503			696	3199

<b>Pollutant Name (CAS)</b>	<b>Area Source Emissions</b>	<b>Non-road Emissions</b>	<b>On-road Emissions</b>	<b>Point Source Emissions</b>	<b>Total Emissions</b>
Carbonyl sulfide (463-58-1)				1,394,000	1,394,000
Catechol (120-80-9)				0.02	0.02
Chlorine (7782-50-5)	390			208,900	209,300
Chlorobenzene (108-90-7)				1851	1851
Chloroethane (75-00-3)	49,780			2697	52,470
Chloroform (67-66-3)	20,580			4929	25,500
Chromium (7440-47-3)	649.3	34.01	438.4	60,983	62,105
Chromium VI (18540-29-9)	79.4	20.95	290.1	4253	4644
Chrysene (218-01-9)	4618	144.1	219.6	15,220	20,200
2-Chloroacetophenone (532-27-4)				375.8	375.8
Chlorobenzilate (510-15-6)				0.8	0.8
Cobalt (7440-48-4)	57.46			16,500	16,560
Coke oven emissions				20,914	20,914
Copper (7440-50-8)	352.7			187,700	188,000
Cresol (mixed isomers) (1319-77-3)				75,730	75,730
M-Cresol (108-39-4)				1996	1996
O-Cresol (95-48-7)				861	861
P-Cresol (106-44-5)				408	408
Cumene (98-82-8)	8900			139,600	148,500
Cyanide (57-12-5)				140,900	140,900
Dibenz(a,h)anthracene (53-70-3)	1739	2.498	0.1469	2.128	1744
Dibenzofuran (132-64-9)				2773	2773
1,2-Dibromoethane (106-93-4)	0.3136			249.4	249.7
Di-N-butyl phthalate (84-74-2)				2045	2045
1,2-Dichloroethane (107-06-2)	3637			2987	6624
1,4-Dichlorobenzene (106-46-7)	479,900			185.7	480,000
3,3'-Dichlorobenzidine (91-94-1)				12	12
1,1-Dichloroethane (75-34-3)				318.3	318.3
1,3-Dichloropropene (542-75-6)	985,600			106.2	985,700
Diethanolamine (111-42-2)				866.5	866.5
Dimethyl phthalate (131-11-3)				84,170	84,170
Dimethyl sulfate (77-78-1)				2584	2584
N,N-Dimethylformamide (68-12-2)	70,520			13,830	84,350
Dimethylaniline (121-69-7)				180	180
4,6-Dinitro-O-cresol (534-52-1)				2	2
2,4-Dinitrophenol (51-28-5)				44.32	44.32

<b>Pollutant Name (CAS)</b>	<b>Area Source Emissions</b>	<b>Non-road Emissions</b>	<b>On-road Emissions</b>	<b>Point Source Emissions</b>	<b>Total Emissions</b>
2,4-Dinitrotoluene (121-14-2)				71.11	71.11
Di-N-octyl phthalate (117-84-0)	19.99			12,670	12,690
1,4-Dioxane (123-91-1)	191.2			700.9	892
1,2-Epoxybutane (106-88-7)				162.2	162.2
Ethyl acrylate (140-88-5)				61	61
Ethyl benzene (100-41-4)	710,900	1,475,000	3,308,000	576,600	6,071,000
Ethylene glycol (107-21-1)	183,500			100,500	284,100
Ethylene oxide (75-21-8)	133,800			1055	134,900
Ethylenethiourea (96-45-7)				51.86	51.86
Fluoranthene (206-44-0)	7675	1421	1832	41,560	52,480
Fluorene (86-73-7)	9152	2578	3078	128.3	14,940
Formaldehyde (50-00-0)	59,020	2,147,000	3,554,000	519,700	6,280,000
Glycol ethers	690,200			1,745,000	2,436,000
Hydrochloric acid (7647-01-0)	144,700			52,750,000	52,900,000
Hexachlorocyclopentadiene (77-47-4)				20	20
Hexamethylene-1,6-diisocyanate (822-06-0)				185.7	185.7
Hexane (110-54-3)	3,982,000	1,073,000	2,782,000	3,428,000	11,270,000
Hexachloroethane (67-72-1)				481.6	481.6
Hexachloro-1,3-butadiene (87-68-3)				20	20
Hexachlorobenzene (118-74-1)	0.4612			16.02	16.48
Hydrogen fluoride (7664-39-3)	8.358			6,713,000	6,713,000
Hydrogen cyanide (74-90-8)	339,800			17,980	357,800
Hydroquinone (123-31-9)	17,530			603.1	18,130
Indeno(1,2,3-c,d)pyrene (193-39-5)	7625	139.2	139.7	3.362	7908
Isophorone (78-59-1)	5833			35,060	40,890
Lead (7439-92-1)	6786	16,260		140,900	163,900
Maleic anhydride (108-31-6)				750	750
Manganese (7439-96-5)	1028	82.61	247.1	314,380	315,740
Mercury (7439-97-6)	425.4			10,160	10,585
Methyl ethyl ketone (78-93-3)	2,867,000			1,751,000	4,618,000
Methyl hydrazine (60-34-4)				9138	9138
Methyl iodide (74-88-4)				30.01	30.01
Methyl isobutyl ketone (108-10-1)	2,020,000			890,500	2,910,000
Methyl isocyanate (624-83-9)				34	34
Methyl methacrylate (80-62-6)				370,000	370,000
Methyl tert-butyl ether (1634-04-4)	41,000		1,224,000	185,100	1,450,000

<b>Pollutant Name (CAS)</b>	<b>Area Source Emissions</b>	<b>Non-road Emissions</b>	<b>On-road Emissions</b>	<b>Point Source Emissions</b>	<b>Total Emissions</b>
Methanol (67-56-1)	3,954,000			1,131,000	5,085,000
4,4'-Methylenediphenyl diisocyanate (101-68-8)				47,500	47,500
Methoxychlor (72-43-5)				120	120
Methyl chloride (74-87-3)	42,330			35,950	78,280
Methylene chloride (dichloromethane) (75-09-2)	1,320,000			865,700	2,185,000
Naphthalene (91-20-3)	456,700	56,210	204,700	181,800	899,400
Nickel (7440-02-0)	1184	1474	554.5	72,970	76,180
Nitrobenzene (98-95-3)				12	12
4-Nitrophenol (100-02-7)				0.2301	0.2301
2-Nitropropane (79-46-9)	11.66				11.66
Polychlorinated biphenyls (PCBs) (1336-36-3)				7.417	7.417
Polychlorinated dibenzodioxins, total	1.04	0.06586	0.1357	4.02	5.261
Polychlorinated dibenzofurans, total	5.899	0.01198	0.02764	18.42	24.36
Pentachlorophenol (87-86-5)				26	26
Tetrachloroethylene (Perc) (127-18-4)	3,095,000			38,690	3,134,000
Phenanthrene (85-01-8)	29,750	5221	5063	8516	48,550
Phenol (108-95-2)	405.1	4193		524,100	528,700
P-Phenylenediamine (106-50-3)				23,000	23,000
Phosgene (75-44-5)				165	165
Phosphorus (7723-14-0)				1513	1513
Phthalic anhydride (85-44-9)				6402	6402
1,2-Propylenimine (75-55-8)				77.7	77.7
Propionaldehyde (123-38-6)		206,900	194,000	112,000	512,900
Propylene dichloride (78-87-5)				117.4	117.4
Propylene oxide (75-56-9)				34,830	34,830
Pyrene (129-00-0)	9153	1647	2551	37.76	13,390
Quinoline (91-22-5)				422.1	422.1
Quinone (106-51-4)				143.6	143.6
Selenium (7782-49-2)	627	11.56		74,160	74,800
Styrene (100-42-5)	1943	103,300	673,800	5,923,000	6,702,000
2,3,7,8-Tetrachlorodibenzo-p-dioxin (1746-01-6)	0.002677	0.000397	0.00089	0.08038	0.08434
2,3,7,8-Tetrachlorodibenzofuran (51207-31-9)	0.1555	0.001014	0.002341	1.525	1.684
1,1,1-Trichloroethane (71-55-6)	5,581,000			14,610	5,596,000
1,1,2,2-Tetrachloroethane (79-34-5)				1451	1451
Toluene (108-88-3)	12,390,000	7,366,000	22,320,000	4,990,000	47,060,000
Toluene-2,4-diisocyanate (584-84-9)				34.75	34.75

<b>Pollutant Name (CAS)</b>	<b>Area Source Emissions</b>	<b>Non-road Emissions</b>	<b>On-road Emissions</b>	<b>Point Source Emissions</b>	<b>Total Emissions</b>
O-Toluidine (95-53-4)				2.42	2.42
Trichloroethylene (79-01-6)	2,829,000			1,468,000	4,297,000
1,2,4-Trichlorobenzene (120-82-1)				96.23	96.23
1,1,2-Trichloroethane (79-00-5)				197.3	197.3
2,4,5-Trichlorophenol (95-95-4)				18	18
2,4,6-Trichlorophenol (88-06-2)				16	16
Triethylamine (121-44-8)	5168			606,300	611,500
2,2,4-Trimethylpentane (540-84-1)	281,800	3,101,000	8,170,000	38,020	11,590,000
Vinylidene chloride (75-35-4)	2344			11.82	2356
Vinyl acetate (108-05-4)	0.2788			96,770	96,770
Vinyl chloride (75-01-4)				2909	2909
M-Xylene (108-38-3)	36,760			4135	40,890
O-Xylene (95-47-6)	104,200	3310		305.4	107,800
P-Xylene (106-42-3)	36,760			282.7	37,040
Xylene (mixed isomers) (1330-20-7)	8,988,000	6,655,000	12,590,000	4,101,000	32,340,000