



EIQ Form 2.T Hazardous Air Pollutant Worksheet

Instructions for Form 780-1448

Air Pollution Control Program fact sheet

2/2009

This form should be completed to report the emissions of any Hazardous Air Pollutants, or HAPs, as defined in 10 CSR 10-6, and listed at the end of these instructions. For emissions reporting purposes, the listed HAPs are separated into Category 1 and Category 2 pollutants and identified as Volatile Organic Compounds, also known as VOCs, or Particulate Matter of less than 10 microns, or PM₁₀.

Category 1 and Category 2 HAPs have different emission unit level reporting thresholds. Category 1 consists of a small set of the most hazardous or toxic chemicals that have an annual emission unit reporting level of 20 pounds or more emitted per year. If a total of 20 pounds or more of Category 1 HAPs are emitted from an emission unit, then all HAP emissions for that emission unit must be reported on Form 2.T. All other HAP chemicals are in Category 2 with an annual emission unit reporting level of 200 pounds or more emitted per year. If the total of all Category 2 HAPs emitted at a unit exceeds 200 pounds or more, then all HAP emissions must be reported for the unit on Form 2.T. Also remember, when reporting a HAP as PM₁₀ or VOC, the emissions are subject to HAP reporting thresholds.

Example: A facility emits 100 pounds of toluene, 100 pounds of xylene and 75 pounds of hexane from emission unit EP01. All three HAP chemicals would be listed on Form 2.T. Even though each air pollutant is lower than 200 pounds, the sum of the emissions for this unit exceeds the threshold of 200 pounds.

Those HAPs that are VOC or PM₁₀ should be reported as VOC or PM₁₀ on Form 2.0 and on Form 2.T. For HAPs that are not VOC or PM₁₀, use Form 2.T to generate a HAP emission factor and report these emissions on Form 2.0.

Note: Many of the HAPs for which emissions are to be reported should have already been reported, either as a VOC or as PM₁₀ on a form 2.0. Do not count the amount of HAPs released more than once for the purposes of calculating the emissions fee.

Each row on Form 2.T should be used to report the required information for a single HAP at a unit. If worksheets are not being used to calculate the emissions, documentation should be provided to verify the emission figures. Include all emission unit numbers on documentation.

Complete the Facility Name, FIPS County Number, Plant Number and Year of Data fields at the top of the form.

Emission Unit Number - This is the unique identification number for each specific process. This identification must match the unit number entered on *Form 1.1 Process Flow Diagram*, *Form 1.2 Summary of Emission Units* and *Form 2.0 Emission Unit Information*, and should be consistent with the nomenclature on your construction permit.

Source Classification Code - This is a required field. This eight-digit code identifies the type of process/liquid associated with this emission unit. Source Classification Code, or SCCs, are contained in AP-42 of the EPA's *Compilation of Air Pollution Emission Factors* or the Factor Information and Retrieval System. If you cannot locate a SCC specific for your process, use the SCC most closely associated with your process.

Segment Number - This is a two-digit number assigned by the facility used to uniquely identify processes associated with an emission unit. Generally, if an emission unit, i.e., EP01 has three processes associated with it, then segment numbers 01, 02 and 03 will be assigned to those processes. Once assigned, this number should remain constant from year to year. If there is a change in the SCC used by the facility to identify a process, a new segment number will be assigned to that process or SCC.

HAP Chemical

Choose the common chemical name or synonym for the chemical being reported from the drop down menu on the Excel® worksheet or from the HAPs list below.

Chemical Abstract Service Registry Number

The Chemical Abstract Service Registry, or CAS, number is a unique number for each chemical or group of chemicals. The corresponding CAS number will appear based on the HAP chemical name chosen from the dropdown menu in column 1. If you are entering the chemical name on a hard copy see the corresponding CAS number in the HAPs list below.

Amount Used or Handled (lbs/yr)

Enter the amount in pounds per year of the HAP chemical that was used or handled at this unit.

Uncontrolled Amount Emitted (lbs/yr)

Enter the amount of the HAP chemical actually emitted from the unit before control equipment reductions are applied. Documentation needs to be provided if the uncontrolled amount emitted (column 4) does not equal the amount used or handled (column 3). The uncontrolled amount emitted in column 4 will be duplicated in either column 5 or 6, depending on the specific chemical being addressed. See column 5 and 6 instructions for how to classify each chemical.

Uncontrolled Emissions Reported as VOC or PM₁₀ (lbs/yr)

The list of chemicals that are considered HAPs, along with their category, and information on whether they should be reported as a VOC, PM₁₀ or HAP, is available at www.dnr.mo.gov/forms/haplist.pdf

If the HAP chemical appears on the list referenced above and has the word "YES" under either VOC or PM₁₀, copy the uncontrolled amount emitted from column 4 into column 5. These emissions should already be accounted for in the VOC or PM₁₀ emission factor in the emission calculation on Form 2.0. Chemicals that should not be reported as either VOC or PM₁₀ will be included in column 6.

Uncontrolled Emissions Reported as HAPs (lbs/yr)

Copy the uncontrolled amount emitted from column 4 into column 6 only if the chemical should be reported as a HAP according to www.dnr.mo.gov/forms/haplist.pdf, and "NO" appears in both the VOC and PM₁₀ columns for the chemical. If a chemical that is already included in the emissions paid for as VOC or PM₁₀ is included in the HAP column, double-payment of emission fees could occur. Column 6 and box 11 will assist in creating a HAP emission factor used to calculate and pay for HAP emissions on Forms 2.0 and 3.0.

HAP Control Devices

List the control device number that controls the listed HAP chemical. This number should be the same as the Device Number reported on Form 2.0C (Examples: CD01, C-01, etc.).

Control Efficiency (percent)

If a control device is present, enter the overall control efficiency for each HAP chemical. Enter as a percent: 13 percent is entered as 13.

Controlled Emissions Reported as VOC or PM₁₀ (lbs/yr)

This is the actual amount in pounds emitted per year that is reported as a VOC or PM₁₀. The value is calculated as:

$$\text{Column 5} * (100 - \text{column 8})/100.$$

Controlled Emissions Reported as HAPs (lbs/yr)

This is the actual amount in pounds emitted per year that is reported as a HAP. The value is calculated as:

$$\text{Column 6} * (100 - \text{column 8})/100$$

HAP Emission Factor

To calculate the HAP emission factor, divide the HAP emission total (column 6 total) by the annual throughput from Form 2.0. The HAP emission factor should be entered in section 5 of Form 2.0 as the HAP uncontrolled emission factor.

Note: If you are reporting different control efficiencies for different HAPs on Form 2.T, then the following formula should be used for Overall Control Efficiency on Form 2.0 (block 10 of Form 2.0):

$$100 \times [1 - (\text{sum of actual emissions reported as HAPs on Form 2.T}) \div (\text{throughput} \times \text{uncontrolled HAP emission factor})]$$

Section 112 Hazardous Air Pollutants

The HAPs are separated into two categories based on the toxicity of each chemical. Each category has a different emission unit reporting level. If a facility emits more than the reporting level for at least one HAP from a single emission unit then the amount used and emitted must be reported on the Emission Inventory Questionnaire.

Emission reporting levels are:

$$\text{Category 1 HAPs} - 20 \text{ lbs/yr} \quad \text{or} \quad \text{Category 2 HAPs} - 200 \text{ lbs/yr}$$

Category 1 Hazardous Air Pollutants

CAS No.	HAP	VOC	PM
TP15	Polycyclic Organic Matter	Yes	No
20-01-9	Arsenic Compounds (Inorganic Including Arsine)	No	Yes
20-06-4	Chromium Compounds	No	Yes
20-11-1	Lead Compounds	No	Yes
20-13-3	Mercury Compounds (Alkyl and Aryl)	No	No
20-13-3	Mercury Compounds(Inorganic)	No	No
20-14-4	Nickel Compounds	No	Yes
57-74-9	Chlordane	Yes	No
71-43-2	Benzene	Yes	No
72-43-5	Methoxychlor	Yes	No
75-01-4	Vinyl Chloride	Yes	No
76-44-8	Heptachlor	Yes	No
92-87-5	Benzidine	Yes	No
106-99-0	Butadiene, [1,3-]	Yes	No
107-30-2	Chloromethyl Methyl Ether	Yes	No
118-74-1	Hexachlorobenzene	Yes	No
542-88-1	Bis(Chloromethyl)Ether	Yes	No
1332-21-4	Asbestos	No	Yes
1336-36-3	PCB [Polychlorinated Biphenyls]	Yes	No
1582-09-8	Trifluralin	Yes	No
1746-01-6	Tetrachlorodibenzo-P-Dioxin, [2,3,7,8-]	Yes	No
8001-35-2	Toxaphene	Yes	No
8007-45-2	Coke Oven Emissions	Yes	No

Category 2 Hazardous Air Pollutants

CAS No.	HAP	VOC	PM
TP14	Mineral Fibers	No	Yes
TP16	Radionuclides (Including Radon)	No	Yes
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
20-09-7	Cyanide Compounds	Yes	No
20-10-0	Glycol Ethers	Yes	No
20-12-2	Manganese Compounds	No	Yes
20-16-6	Selenium Compounds	No	Yes
50-00-0	Formaldehyde	Yes	No
51-28-5	Dinitrophenol, [2,4-]	Yes	No
51-79-6	Urethane [Ethyl Carbamate]	Yes	No
53-96-3	Acetylaminofluorene, [2-]	Yes	No
56-23-5	Carbon Tetrachloride	Yes	No
56-38-2	Parathion	Yes	No
57-14-7	Dimethyl Hydrazine, [1,1-]	Yes	No
57-57-8	Propiolactone, [Beta-]	Yes	No
58-89-9	Lindane [Gamma-Hexachlorocyclohexane]	Yes	No
59-89-2	Nitrosomorpholine, [N-]	Yes	No
60-11-7	Dimethylaminoazobenzene, [4-]	Yes	No
60-34-4	Methyl Hydrazine	Yes	No
60-35-5	Acetamide	Yes	No
62-53-3	Aniline	Yes	No
62-73-7	Dichlorvos	Yes	No
62-75-9	Nitrosodimethylamine, [N-]	Yes	No
63-25-2	Carbaryl	Yes	No
64-67-5	Diethyl Sulfate	Yes	No
67-56-1	Methanol	Yes	No
67-66-3	Chloroform	No	No
67-72-1	Hexachloroethane	Yes	No
68-12-2	Dimethyl Formamide	Yes	No
71-55-6	Trichloroethane, [1,1,1-]	No	No
72-55-9	DDE	Yes	No
74-83-9	Bromomethane	Yes	No
74-87-3	Methyl Chloride	Yes	No
74-88-4	Methyl Iodide	Yes	No
75-00-3	Ethyl Chloride	Yes	No
75-05-8	Acetonitrile	Yes	No
75-07-0	Acetaldehyde	Yes	No

CAS No.	HAP	VOC	PM
75-09-2	Dichloromethane	No	No
75-15-0	Carbon Disulfide	Yes	No
75-21-8	Ethylene Oxide	Yes	No
75-25-2	Bromoform	Yes	No
75-34-3	Dichloroethane, [1,1-]	Yes	No
75-35-4	Dichloroethylene, [1,1-]	Yes	No
75-44-5	Phosgene	Yes	No
75-55-8	Propyleneimine, [1,2-]	Yes	No
75-56-9	Propylene Oxide	Yes	No
77-47-4	Hexachlorocyclopentadiene	Yes	No
77-78-1	Dimethyl Sulfate	Yes	No
78-59-1	Isophrone	Yes	No
78-87-5	Dichloropropane, [1,2-]	Yes	No
79-00-5	Trichloroethane, [1,1,2-]	Yes	No
79-01-6	Trichloroethylene	Yes	No
79-06-1	Acrylamide	Yes	No
79-10-7	Acrylic Acid	Yes	No
79-11-8	Chloroacetic Acid	Yes	No
79-34-5	Tetrachloroethane, [1,1,2,2-]	Yes	No
79-44-7	Dimethylcarbamoyl Chloride	Yes	No
79-46-9	Nitropropane, [2-]	Yes	No
80-62-6	Methyl Methacrylate	Yes	No
82-68-8	Pentachloronitrobenzene	Yes	No
84-74-2	Dibutyl Phthalate	Yes	No
85-44-9	Phthalic Anhydride	Yes	No
87-68-3	Hexachlorobutadiene	Yes	No
87-86-5	Pentachlorophenol	Yes	No
88-06-2	Trichlorophenol, [2,4,6-]	Yes	No
90-04-0	Anisidine, [Ortho-]	Yes	No
91-20-3	Naphthalene	Yes	No
91-22-5	Quinoline	Yes	No
91-94-1	Dichlorobenzidine, [3,3-]	Yes	No
92-52-4	Biphenyl, [1,1-]	Yes	No
92-67-1	Aminobiphenyl, [4-]	Yes	No
92-93-3	Nitrobiphenyl, [4-]	Yes	No
94-75-7	Dichlorophenoxyacetic Acid, [2,4-]	Yes	No
95-47-6	Xylene, [Ortho-]	Yes	No
95-48-7	Cresol, [Ortho-]	Yes	No
95-53-4	Toluidine, [Ortho-]	Yes	No

CAS No.	HAP	VOC	PM
95-80-7	Diaminotoluene, [2,4-]	Yes	No
95-95-4	Trichlorophenol, [2,4,5-]	Yes	No
96-09-3	Styrene Oxide	Yes	No
96-12-8	Dibromo-3-Chloropropane, [1,2-]	Yes	No
96-45-7	Ethylene Thiourea	Yes	No
98-07-7	Benzotrichloride	Yes	No
98-82-8	Cumene	Yes	No
98-86-2	Acetophenone	Yes	No
98-95-3	Nitrobenzene	Yes	No
100-02-7	Nitrophenol, [4-]	Yes	No
100-41-4	Ethylbenzene	Yes	No
100-42-5	Styrene	Yes	No
100-44-7	Benzyl Chloride	Yes	No
101-14-4	Methylene Bis (2-Chloroaniline), [4,4-]	Yes	No
101-68-8	Diphenylmethane Diisocyanate, [4,4-]	Yes	No
101-77-9	Methylenedianiline, [4,4-]	Yes	No
106-42-3	Xylene, [Para-]	Yes	No
106-44-5	Cresol, [Para-]	Yes	No
106-46-7	Dichlorobenzene, [1,4-]	Yes	No
106-50-3	Phenylenediamine, [Para-]	Yes	No
106-51-4	Quinone	Yes	No
106-88-7	Butylene Oxide, [1,2-]	Yes	No
106-89-8	Epichlorohydrin	Yes	No
106-93-4	Dibromoethane, [1,2-]	Yes	No
107-02-8	Acrolein	Yes	No
107-05-1	Allyl Chloride	Yes	No
107-06-2	Dichloroethane, [1,2-]	Yes	No
107-13-1	Acrylonitrile	Yes	No
107-21-1	Ethylene Glycol	Yes	No
108-05-4	Vinyl Acetate	Yes	No
108-10-1	Methyl Isobutyl Ketone	Yes	No
108-31-6	Maleic Anhydride	Yes	No
108-38-3	Xylene, [Meta-]	Yes	No
108-39-4	Cresol, [Meta-]	Yes	No
108-88-3	Toluene	Yes	No
108-90-7	Chlorobenzene	Yes	No
108-95-2	Phenol	Yes	No
110-54-3	Hexane, [N-]	Yes	No
111-42-2	Diethanolamine	Yes	No

CAS No.	HAP	VOC	PM
111-44-4	Bis(Chloroethyl)Ether	Yes	No
114-26-1	Propoxur [Baygon]	Yes	No
117-81-7	Di(2-Ethylhexyl) Phthalate, (Dehp)	Yes	No
119-90-4	Dimethoxybenzidine, [3,3'-]	Yes	No
119-93-7	Dimethyl Benzidine, [3,3'-]	Yes	No
120-80-9	Catechol	Yes	No
120-82-1	Trichlorobenzene, [1,2,4-]	Yes	No
121-14-2	Dinitrotoluene, [2,4-]	Yes	No
121-44-8	Triethylamine	Yes	No
121-69-7	Dimethylaniline, [N-N-]	Yes	No
122-66-7	Diphenylhydrazine, [1,2-]	Yes	No
123-31-9	Hydroquinone	Yes	No
123-38-6	Propionaldehyde	Yes	No
123-91-1	Dioxane, [1,4-]	Yes	No
126-99-8	Chloroprene	Yes	No
127-18-4	Tetrachloroethylene	No	No
131-11-3	Dimethyl Phthalate	Yes	No
132-64-9	Dibenzofuran	Yes	No
133-06-2	Captan	Yes	No
133-90-4	Chloramben	Yes	No
140-88-5	Ethyl Acrylate	Yes	No
151-56-4	Ethyleneimine [Aziridine]	Yes	No
156-62-7	Calcium Cyanamide	Yes	No
302-01-2	Hydrazine	No	No
334-88-3	Diazomethane	Yes	No
463-58-1	Carbonyl Sulfide	Yes	No
510-15-6	Chlorobenzilate	Yes	No
532-27-4	Chloroacetophenone, [2-]	Yes	No
534-52-1	Dinitro-O-Cresol, [4,6-]	Yes	No
540-84-1	Trimethylpentane, [2,2,4-]	Yes	No
542-75-6	Dichloropropene, [1,3-]	Yes	No
584-84-9	Toluene Diisocyanate, [2,4-]	Yes	No
593-60-2	Vinyl Bromide	Yes	No
624-83-9	Methyl Isocyanate	Yes	No
680-31-9	Hexamethylphosphoramid	Yes	No
684-93-5	Nitroso-N-Methylurea, [N-]	Yes	No
822-06-0	Hexamethylene-1,6- Diisocyanate	Yes	No
1120-71-4	Propane Sultone, [1,3-]	Yes	No
1319-77-3	Cresols (Mixed Isomers)	Yes	No
1330-20-7	Xylenes (Mixed Isomers)	Yes	No

CAS No.	HAP	VOC	PM
1634-04-4	Methyl Tert-Butyl Ether	Yes	No
7550-45-0	Titanium Tetrachloride	No	No
7647-01-0	Hydrogen Chloride	No	No
7664-39-3	Hydrogen Fluoride	No	No
7723-14-0	Phosphorous (Yellow or White)	No	No

7782-50-5	Chlorine	No	No
7803-51-2	Phosphine	No	No

Note: For all listings above that contain the word “compounds” and for glycol ethers, unless otherwise specified, the following applies: 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.

For More Information

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 573-751-2706 fax
www.dnr.mo.gov/env/apcp/index.html