**Texas Commission on Environmental Quality**

**Hazardous Air Pollutants Reference Table (HAPS-RT) for Air Quality Permits**

This document is used to help facilitate the submission of air quality permit application forms for sources subject to Title 40 Code of Federal Regulations Part 63 (40 CFR Part 63).

The Hazardous Air Pollutants (HAPs) list is found in §112(b) of the Federal Clean Air Act and revisions to this list are found in 40 CFR Part 63, Subpart C.

| **CAS No.** | **Pollutant** | **CAS No.** | **Pollutant** |
| --- | --- | --- | --- |
| 75070 | Acetaldehyde | 79118 | Chloroacetic acid |
| 60355 | Acetamide | 532274 | 2‑Chloroacetophenone |
| 75058 | Acetonitrile | 108907 | Chlorobenzene |
| 98862 | Acetophenone | 510156 | Chlorobenzilate |
| 53963 | 2-Acetylaminofluorene | 67663 | Chloroform |
| 107028 | Acrolein | 107302 | Chloromethyl methyl ether |
| 79061 | Acrylamide  | 126998 | Chloroprene |
| 79107 | Acrylic acid | 1319773 | Cresols/Cresylic acid (isomers and mixture) |
| 107131 | Acrylonitrile | 95487 | o‑Cresol |
| 107051 | Allyl chloride | 108394 | m‑Cresol |
| 92671 | 4‑Aminobiphenyl | 106445 | p‑Cresol |
| 62533 | Aniline | 98828 | Cumene  |
| 90040 | o‑Anisidine | 94757 | 2,4‑D (2,4‑Dichlorophenoxyacetic Acid) (including salts and esters) |
| 1332214 | Asbestos | 3547044 | DDE (1,1‑dichloro‑2,2‑bis(p‑chlorophenyl) ethylene) |
| 71432 | Benzene (including benzene from gasoline) | 334883 | Diazomethane |
| 92875 | Benzidine | 132649 | Dibenzofuran  |
| 98077 | Benzotrichloride | 96128 | 1,2‑Dibromo‑3‑chloropropane  |
| 100447 | Benzyl chloride | 84742 | Dibutylphthalate |
| 92524 | Biphenyl | 106467 | 1,4‑Dichlorobenzene (p) |
| 117817 | Bis (2‑ethylhexyl) phthalate (DEHP) | 91941 | 3,3‑Dichlorobenzidene  |
| 542881 | Bis (chloromethyl) ether | 111444 | Dichloroethyl ether (Bis[2‑chloroethyl]ether) |
| 75252 | Bromoform | 542756 | 1,3‑Dichloropropene |
| 106990 | 1,3‑Butadiene | 62737 | Dichlorvos |
| 156627 | Calcium cyanamide | 111422 | Diethanolamine |
| 133062 | Captan | 121697 | N,N‑Diethyl aniline (N,N‑Dimethylaniline) |
| 63252 | Carbaryl | 64675 | Diethyl sulfate |
| 75150 | Carbon disulfide | 119904 | 3,3‑Dimethoxybenzidine |

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| 56235 | Carbon tetrachloride | 60117 | Dimethyl aminoazobenzene |
| 463581 | Carbonyl sulfide | 119937 | 3,3'‑Dimethyl benzidine |
| 120809 | Catechol | 79447 | Dimethyl carbamoyl chloride |
| 133904 | Chloramben | 68122 | Dimethyl formamide  |
| 57749 | Chlordane | 57147 | 1,1‑Dimethyl hydrazine |
| 7782505 | Chlorine | 131113 | Dimethyl phthalate |
| 77781 | Dimethyl sulfate | 74839 | Methyl bromide (Bromomethane) |
| 534521 | 4,6‑Dinitro‑o‑ocresol (including salts) | 74873 | Methyl chloride (Chloromethane) |
| 51285 | 2,4‑Dinitrophenol | 71556 | Methyl chloroform (1,1,1‑Trichloroethane) |
| 121142 | 2,4‑Dinitrotoluene | 60344 | Methyl hydrazine |
| 123911 | 1,4‑Dioxane (1,4‑Diethyleneoxide) | 74884 | Methyl iodide (Iodomethane) |
| 122667 | 1,2-Diphenylhydrazine | 108101 | Methyl isobutyl ketone (Hexone) |
| 106898 | Epichlorohydrin (1‑Chloro‑2,3‑epoxypropane) | 624839 | Methyl isocyanate |
| 106887 | 1,2‑Epoxybutane  | 80626 | Methyl methacrylate  |
| 140885 | Ethyl acrylate | 1634044 | Methyl tert butyl ether |
| 100414 | Ethyl benzene | 101144 | 4,4‑Methylene bis (2‑chloroaniline) |
| 51796 | Ethyl carbamate (Urethane) | 75092 | Methylene chloride (Dichloromethane) |
| 75003 | Ethyl chloride (Chloroethane) | 101688 | Methylene diphenyl diisocyanate (MDI) |
| 106934 | Ethylene dibromide (Dibromoethane) | 101779 | 4,4'‑Methylenedianiline  |
| 107062 | Ethylene dichloride (1,2‑Dichloroethane) | 91203 | Naphthalene  |
| 107211 | Ethylene glycol | 98953 | Nitrobenzene |
| 151564 | Ethylene imine (Aziridine) | 92933 | 4‑Nitrobiphenyl |
| 75218 | Ethylene oxide | 100027 | 4‑Nitrophenol |
| 96457 | Ethylene thiourea | 79469 | 2‑Nitropropane |
| 75343 | Ethylidene dichloride (1,1‑Dichloroethane) | 684935 | N‑Nitroso‑N‑methylurea |
| 50000 | Formaldehyde | 62759 | N‑Nitrosodimethylamine |
| 76448 | Heptachlor | 59892 | N‑Nitrosomorpholine |
| 118741 | Hexachlorobenzene | 56382 | Parathion |
| 87683 | Hexachlorobutadiene | 82688 | Pentachloronitrobenzene (Quintobenzene) |
| 77474 | Hexachlorocyclopentadiene | 87865 | Pentachlorophenol |
| 67721 | Hexachloroethane | 108952 | Phenol |
| 822060 | Hexamethylene‑1,6‑diisocyanate | 106503 | p‑Phenylenediamine |
| 680319 | Hexamethylphosphoramide | 75445 | Phosgene |

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| 110543 | Hexane | 7803512 | Phosphine  |
| 302012 | Hydrazine | 7723140 | Phosphorus |
| 7647010 | Hydrochloric acid  | 85449 | Phthalic anhydride |
| 7664393 | Hydrogen fluoride (Hydrofluoric acid) | 1336363 | Polychlorinated biphenyls (Aroclors) |
| 123319 | Hydroquinone | 1120714 | 1,3‑Propane sultone |
| 78591 | Isophorone | 57578 | beta‑Propiolactone |
| 58899 | Lindane (all isomers) | 123386 | Propionaldehyde |
| 108316 | Maleic anhydride | 114261 | Propoxur (Baygon) |
| 67561 | Methanol | 78875 | Propylene dichloride (1,2‑Dichloropropane) |
| 72435 | Methoxychlor | 75569 | Propylene oxide |
| 75558 | 1,2‑Propylenimine (2‑Methyl aziridine) | 75014 | Vinyl chloride |
| 91225 | Quinoline | 75354 | Vinylidene chloride (1,1‑Dichloroethylene) |
| 106514 | Quinone | 1330207 | Xylenes (isomers and mixture) |
| 100425 | Styrene | 95476 | o‑Xylenes |
| 96093 | Styrene oxide | 108383 | m‑Xylenes |
| 1746016 | 2,3,7,8‑Tetrachlorodibenzo‑p‑dioxin | 106423 | p‑Xylenes |
| 79345 | 1,1,2,2‑Tetrachloroethane | Antimony Compounds | Antimony Compounds  |
| 127184 | Tetrachloroethylene (Perchloroethylene) | Arsenic Compounds | Arsenic Compounds (inorganic including arsine) |
| 7550450 | Titanium tetrachloride | Beryllium Compounds  | Beryllium Compounds |
| 108883 | Toluene | Cadmium Compounds | Cadmium Compounds |
| 95807 | 2,4‑Toluene diamine | Chromium Compounds | Chromium Compounds |
| 584849 | 2,4‑Toluene diisocyanate | Cobalt Compounds | Cobalt Compounds |
| 95534 | o-Toluidine | Coke Oven Emissions  | Coke Oven Emissions  |
| 8001352 | Toxaphene (chlorinated camphene) | Cyanide Compounds 1 | Cyanide Compounds 1 |
| 120821 | 1,2,4‑Trichlorobenzene | Glycol ethers2 | Glycol ethers2 |
| 79005 | 1,1,2‑Trichloroethane | Lead Compounds | Lead Compounds |
| 79016 | Trichloroethylene | Manganese Compounds | Manganese Compounds |

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| 95954 | 2,4,5‑Trichlorophenol | Mercury Compounds | Mercury Compounds |
| 88062 | 2,4,6‑Trichlorophenol | Fine mineral fibers3 | Fine mineral fibers 3 |
| 121448 | Triethylamine | Nickel Compounds | Nickel Compounds |
| 1582098 | Trifluralin | Polycyclic Organic Matter4 | Polycyclic Organic Matter 4 |
| 540841 | 2,2,4‑Trimethylpentane | Radionuclides (including radon)5  | Radionuclides (including radon) 5 |
| 108054 | Vinyl acetate  | Selenium Compounds  | Selenium Compounds  |
| 593602 | Vinyl bromide  |  |  |

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 Glycol ethers include 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

R = phenyl or alkyl substituted phenyl;

R′= H or alkyl C7 or less; or

OR′ consisting of carboxylic acid ester, sulfate, phosphate, nitrate, or sulfonate.

3 Includes mineral fiber emissions from facilities manufacturing or processing glass, rock, or slag fibers (or other mineral derived fibers) of average diameter 1 micrometer or less.

4 Includes organic compounds with more than one benzene ring, and which have a boiling point greater than or equal to 100 º C.

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5 A type of atom which spontaneously undergoes radioactive decay.

* The substance caprolactam (CAS number 105602) is deleted from the list of hazardous air pollutants established by 42 U.S.C. 7412(b)(1). [61 FR 30823, June 18, 1996]
* The substance methyl ethyl ketone (MEK, 2-Butanone) (CAS Number 78933) is deleted from the list of hazardous air pollutants established by 42 U.S.C. 7412(b)(1). [70 FR 75059, December 19, 2005]
* The substance ethylene glycol monobutyl ether (EGBE, 2-Butoxyethanol) (CAS Number 111762) is deleted from the list of hazardous air pollutants established by 42 U.S.C. 7412(b)(1). [69 FR 69325, November 29, 2004]
* A clerical error led to the inadvertent addition of hydrogen sulfide to the Section 112(b) list of Hazardous Air Pollutants. However, a Joint Resolution to remove hydrogen sulfide from the Section 112(b)(1) list was passed by the Senate on August 1, 1991 (Congressional Record page S11799), and the House of Representatives on November 25, 1991 (Congressional Record pages H11217-H11219). The Joint Resolution was approved by the President on December 4, 1991. Hydrogen Sulfide is included in Section 112(r) and is subject to the accidental release provisions. A study (see below) was required under Section 112(n)(5).

Hydrogen Sulfide Air Emissions Associated with the Extraction of Oil and Natural Gas, EPA‑453/R‑93-045, NTIS (publication number is PB94‑131224, $36.50 hard copy, $17.50 microfiche). National Technical Information Services (NTIS) 5285 Port Royal Road Springfield, VA 22161 703‑487‑4650 800‑426‑4791 703‑487‑4807 8:30‑5:30 EST M‑F