Minnesota Pollution Control Agency

K List of Hazardous Wastes

Listed hazardous wastes

In Minnesota, a waste may be hazardous for one of these reasons:

- It displays a hazardous waste characteristic
- It is recorded in one of four lists of hazardous waste – the K, F, P, or U List
- It contains polychlorinated biphenyls (PCBs)

This document will discuss the K List of hazardous wastes.

For more information on the other lists, PCBs, or hazardous waste characteristics, see Minnesota Pollution Control Agency (MPCA) hazardous waste fact sheets #2.00, 2.02, 2.03, 2.04, 2.05, and 4.48a, available on the MPCA's hazardous waste publications Web page, www.pca.state.mn.us/waste/pubs/business.html.

K List in Minnesota

The MPCA has adopted the federal K List of hazardous wastes, located in Chapter 40 of the Code of Federal Regulations (CFR), part 261.32, as amended. Because Minnesota adopted the federal list, changes made to the list by the U.S. Environmental Protection Agency (EPA) are implemented automatically in Minnesota.

Reducing listed waste

Reducing the amount of listed hazardous waste you generate can lower your costs as well as make complying with the regulatory requirements easier. The Minnesota Technical Assistance Program (MnTAP) has staff and resources to assist you in assessing alternate products and processes to help reduce your listed waste generation. For contact information for MnTAP, see the 'More information' section on page nine.

Explanation of K List

Reason for listing

Each waste on the K List (list) was included for one or more of the following reasons, identified in the list by the capitalized letters in parentheses following the definition:

- Corrosive (C)
- Ignitable (I)
- Reactive (R)
- Toxic (T)
- Toxicity Characteristic (E)

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651-296-6300 • 800-657-3864 • TTY 651-282-5332 or 800-657-3864 • Available in alternative formats

Listing-specific information

Many wastes on the K List have additional listing-specific information associated with them, including definitions and possible exemptions. This information is referenced in this document by the numbers in superscript following the reason for listing. Explanation of the numbers is given after the complete list in this document.

Although the MPCA has included the most common particulars in this guidance, the EPA may have issued additional interpretation.

Waste codes

A four-character hazardous waste code is assigned to each waste on the list. Use this code for annual reporting and manifesting. The list is grouped according to the process generating the waste. With the exception of K051 and K062, wastes on this list may be generated at any site performing these processes, and are not restricted to those sites with any specific Standard Industrial Classification (SIC) codes. In alphabetical order:

- Coking (K060, K087, K141-K145, and K147-K148)
- Explosives (K044-K047)
- Ink formulation (K086)
- Inorganic chemicals (K071, K073, K106, and K176-K178)
- Inorganic pigments (K002-K008)
- Iron and steel (K061-K062)
- Organic chemicals (K009-K011, K013-K030, K083, K085, K093-K096, K103-K105, K107-K118, K136, K149-K151, K156-K159, K161, K174-K175, and K181)
- Pesticides (K031-K043, K097-K099, K123-K126, and K131-K132)
- Petroleum refining (K048-K052 and K169-K172)
- Non-ferrous metals (K069, K088, and K100)
- Veterinary pharmaceuticals (K084 and K101-K102)
- Wood preservation (K001)

*Reserved (No listings currently use codes K012, K053-K059, K063-K068, K070, K072, K074-K082, K089-K092, K119-K122, K127-K130, K133-K135, K137-K140, K146, K152-K155, K160, K162-K168, K173, and K179-K180)

The listings below are grouped by process and then listed in numerical order by waste code.

Wood preservation K001

K001 Bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use creosote and/or pentachlorophenol. (T)

Inorganic pigments K002-K008

K002 Wastewater treatment sludge from the production of chrome yellow and orange pigments. (T)

K003 Wastewater treatment sludge from the production of molybdate orange pigments. (T)

K004 Wastewater treatment sludge from the production of zinc yellow pigments. (T)

K005 Wastewater treatment sludge from the production of chrome green pigments. (T)

K006 Wastewater treatment sludge from the production of chrome oxide green pigments (anhydrous and hydrated). (T)

K007 Wastewater treatment sludge from the production of iron blue pigments. (T)

K008 Oven residue from the production of chrome oxide green pigments. (T)

Organic chemicals — K009-K011, K013-K030, K083, K085, K093-K096, K103-K105, K107-K118, K136, K149-K151, K156-K159, K161, K174-K175, and K181

K009 Distillation bottoms from the production of acetaldehyde from ethylene. (T)

K010 Distillation side cuts from the production of acetaldehyde from ethylene. (T)

K011 Bottom stream from the wastewater stripper in the production of acrylonitrile. (R,T)

K013 Bottom stream from the acetonitrile column in the production of acrylonitrile. (R,T)

K014 Bottoms from the acetonitrile purification column in the production of acrylonitrile. (T)

K015 Still bottoms from the distillation of benzyl chloride. (T)

K016 Heavy ends or distillation residues from the production of carbon tetrachloride. (T)

K017 Heavy ends (still bottoms) from the purification column in the production of epichlorohydrin. (T)

K018 Heavy ends from the fractionation column in ethyl chloride production. (T)

K019 Heavy ends from the distillation of ethylene dichloride in ethylene dichloride production. (T)

K020 Heavy ends from the distillation of vinyl chloride in vinyl chloride monomer production. (T)

K021 Aqueous spent antimony catalyst waste from fluoromethanes production. (T)

K022 Distillation bottom tars from the production of phenol/acetone from cumene. (T)

K023 Distillation light ends from the production of phthalic anhydride from naphthalene. (T)

K024 Distillation bottoms from the production of phthalic anhydride from naphthalene. (T)

K025 Distillation bottoms from the production of nitrobenzene by the nitration of benzene. (T)

K026 Stripping still tails from the production of methy ethyl pyridines. (T)

K027 Centrifuge and distillation residues from toluene diisocyanate production. (R,T)

K028 Spent catalyst from the hydrochlorinator reactor in the production of 1,1,1-trichloroethane. (T)

K029 Waste from the product steam stripper in the production of 1,1,1-trichloroethane. (T)

K030 Column bottoms or heavy ends from the combined production of trichloroethylene and perchloroethylene. (T)

K083 Distillation bottoms from aniline production. (T)

K085 Distillation or fractionation column bottoms from the production of chlorobenzenes. (T)

K093 Distillation light ends from the production of phthalic anhydride from ortho-xylene. (T)

K094 Distillation bottoms from the production of phthalic anhydride from ortho-xylene. (T)

K095 Distillation bottoms from the production of 1,1,1-trichloroethane. (T)

K096 Heavy ends from the heavy ends column from the production of 1,1,1-trichloroethane. (T)

K103 Process residues from aniline extraction from the production of aniline. (T)

K104 Combined wastewater streams generated from nitrobenzene/aniline production. (T)

K105 Separated aqueous stream from the reactor product washing step in the production of chlorobenzenes. (T)

K107 Column bottoms from product separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazines. (C,T)

K108 Condensed column overheads from product separation and condensed reactor vent gases from the production of1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides. (I,T)

K109 Spent filter cartridges from product purification from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides. (T)

K110 Condensed column overheads from intermediate separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides. (T)

K111 Product washwaters from the production of dinitrotoluene via nitration of toluene. (C,T)

K112 Reaction by-product water from the drying column in the production of toluenediamine via hydrogenation of dinitrotoluene. (T)

K113 Condensed liquid light ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene. (T)

K114 Vicinals from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene. (T)

K115 Heavy ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene. (T)

K116 Organic condensate from the solvent recovery column in the production of toluene diisocyanate via phosgenation of toluenediamine. (T)

K117 Wastewater from the reactor vent gas scrubber in the production of ethylene dibromide via bromination of ethene. (T)

K118 Spent adsorbent solids from purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene. (T)

K136 Still bottoms from the purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene. (T)

K149 Distillation bottoms from the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups. (T)[1]

K150 Organic residuals, excluding spent carbon adsorbent, from the spent chlorine gas and hydrochloric acid recovery processes associated with the production of alpha-(or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups. (T)

K151 Wastewater treatment sludges, excluding neutralization and biological sludges, generated during the treatment of wastewaters from the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups. (T)

K156 Organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes. (T)[2]

K157 Wastewaters (including scrubber waters, condenser waters, washwaters, and separation waters) from the production of carbamates and carbamoyl oximes. (T)[2]

K158 Bag house dusts and filter/separation solids from the production of carbamates and carbamoyl oximes. (T)[2]

K159 Organics from the treatment of thiocarbamate wastes. (T)

K161 Purification solids (including filtration, evaporation, and centrifugation solids), bag house dust and floor sweepings from the production of dithiocarbamate acids and their salts. (R,T)[3]

K174 Wastewater treatment sludges from the production of ethylene dichloride or vinyl chloride monomer (including sludges that result from commingled ethylene dichloride or vinyl chloride monomer wastewater and other wastewater). (T)[4]

K175 Wastewater treatment sludges from the production of vinyl chloride monomer using mercuric chloride catalyst in an acetylene-based process. (T)

K181 Nonwastewaters from the production of dyes and/or pigments (including nonwastewaters commingled at the point of generation with nonwastewaters from other processes) that, at the point of generation, contain mass loadings of any of the constituents identified in 40 CFR 261.32(c) at or above the specified levels after any annual mass loading limit has been reached. (T)[5]

Inorganic chemicals K071, K073, K106, and K176-K178

K071 Brine purification muds from the mercury cell process in chlorine production, where separately prepurified brine is not used. (T)

K073 Chlorinated hydrocarbon waste from the purification step of the diaphragm cell process using graphite anodes in chlorine production. (T)

K106 Wastewater treatment sludge from the mercury cell process in chlorine production. (T)

K176 Baghouse filters from the production of antimony oxide, including filters from the production of intermediates (e.g., antimony metal or crude antimony oxide). (E)

K177 Slag from the production of antimony oxide that is speculatively accumulated or disposed, including slag from the production of intermediates (e.g., antimony metal or crude antimony oxide). (T)

K178 Residues from manufacturing and manufacturing-site storage of ferric chloride from acids formed during the production of titanium dioxide using the chloride-ilmenite process. (T)

Pesticides K031-K043, K097-K099, K123-K126, and K131-K1

K031 By-product salts generated in the production of MSMA and cacodylic acid. (T)

K032 Wastewater treatment sludge from the production of chlordane. (T)

K033 Wastewater and scrub water from the chlorination of cyclopentadiene in the production of chlordane. (T)

K034 Filter solids from the filtration of hexachlorocyclopentadiene in the production of chlordane. (T)

K035 Wastewater treatment sludges generated in the production of creosote. (T)

K036 Still bottoms from toluene reclamation distillation in the production of disulfoton. (T)

K037 Wastewater treatment sludges from the production of disulfoton. (T)

K038 Wastewater from the washing and stripping of phorate production. (T)

K039 Filter cake from the filtration of diethylphosphorodithioic acid in the production of phorate. (T)

K040 Wastewater treatment sludge from the production of phorate. (T)

K041 Wastewater treatment sludge from the production of toxaphene. (T)

K042 Heavy ends or distillation residues from the distillation of tetrachlorobenzene in the production of 2,4,5-T. (T)

K043 2,6-Dichlorophenol waste from the production of 2,4-D. (T)

K097 Vacuum stripper discharge from the chlordane chlorinator in the production of chlordane. (T)

K098 Untreated process wastewater from the production of toxaphene. (T)

K099 Untreated wastewater from the production of 2,4-D. (T)

K123 Process wastewater (including supernates, filtrates, and washwaters) from the production of ethylenebisdithiocarbamic acid and its salt. (T)

K124 Reactor vent scrubber water from the production of ethylenebisdithiocarbamic acid and its salts. (C,T)

K125 Filtration, evaporation, and centrifugation solids from the production of ethylenebisdithiocarbamic acid and its salts. (T)

K126 Baghouse dust and floor sweepings in milling and packaging operations from the production or formulation of ethylenebisdithiocarbamic acid and its salts. (T)

K131 Wastewater from the reactor and spent sulfuric acid from the acid dryer from the production of methyl bromide. (C,T)

K132 Spent absorbent and wastewater separator solids from the production of methyl bromide. (T)

Explosives K044-K047

K044 Wastewater treatment sludges from the manufacturing and processing of explosives. (R)[6]

K045 Spent carbon from the treatment of wastewater containing explosives. (R)[6]

K046 Wastewater treatment sludges from the manufacturing, formulation and loading of lead-based initiating compounds. (T)

K047 Pink/red water from TNT operations. (R)[6]

Petroleum refining K048-K052 and K169-K172

K048 Dissolved air flotation (DAF) float from the petroleum refining industry. (T)

K049 Slop oil emulsion solids from the petroleum refining industry. (T)

K050 Heat exchanger bundle cleaning sludge from the petroleum refining industry. (T)

K051 API separator sludge from the petroleum refining industry. (R)[7]

K052 Tank bottoms (leaded) from the petroleum refining industry. (T)

K169 Crude oil storage tank sediment from petroleum refining operations. (T)

K170 Clarified slurry oil tank sediment and/or in-line filter/separation solids from petroleum refining operations. (T)

K171 Spent Hydrotreating catalyst from petroleum refining operations, including guard beds used to desulfurize feeds to other catalytic reactors. (I,T)[8]

K172 Spent Hydrorefining catalyst from petroleum refining operations, including guard beds used to desulfurize feeds to other catalytic reactors. (I,T)[8]

Iron and steel K061-K062

K061 Emission control dust/sludge from the primary production of steel in electric furnaces. (T)

K062 Spent pickle liquor generated by steel finishing operations of facilities within the iron and steel industry (SIC Codes 331 and 332). (C,T)

Non-ferrous metals: primary aluminum and secondary lead K088, K069, and K100

K088 Spent potliners from primary aluminum reduction. (T)

K069 Emission control dust/sludge from secondary lead smelting. (T)[9]

K100 Waste leaching solution from acid leaching of emission control dust/sludge from secondary lead smelting. (T)

Veterinary pharmaceuticals K084 and K101-K102

K084 Wastewater treatment sludges generated during the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds. (T)

K101 Distillation tar residues from the distillation of aniline-based compounds in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds. (T)

K102 Residue from the use of activated carbon for decolorization in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds. (T)

Ink formulation and steel K086

K086 Solvent washes and sludges, caustic washes and sludges, or water washes and sludges from cleaning tubs and equipment used in the formulation of ink from pigments, dyes, driers, soaps, and stabilizers containing chromium and lead. (T)

Coking K060, K087, K141-K145, and K147-K148

K060 Ammonia still lime sludge from coking operations. (T)

K087 Decanter tank tar sludge from coking operations. (T)

K141 Process residues from the recovery of coal tar, including, but not limited to, collecting sump residues from the production of coke from coal or the recovery of coke byproducts produced from coal. This listing does not include K087. (T)

K142 Tar storage tank residues from the production of coke from coal or from the recovery of coke by-products produced from coal. (T)

K143 Process residues from the recovery of light oil, including, but not limited to, those generated in stills, decanters, and wash oil recovery units from the recovery of coke by-products produced from coal. (T)

K144 Wastewater sump residues from light oil refining, including, but not limited to, intercepting or contamination sump sludges from the recovery of coke by-products produced from coal. (T)

K145 Residues from naphthalene collection and recovery operations from the recovery of coke by-products produced from coal. (T)

K147 Tar storage tank residues from coal tar refining. (T)

K148 Residues from coal tar distillation, including but not limited to, still bottoms. (T)

Explanation of superscripts

1. K149 does not include still bottoms from the distillation of benzyl chloride.
2. K156, K157, and K158 do not include wastes generated from the manufacture of 3-iodo-2-propynyl nbutylcarbamate.
3. K161 does not include K125 or K126.
4. Wastes are not K174 if they are disposed in a permitted solid waste landfill and are not stored on the land prior to disposal. The generator must maintain documentation demonstrating fully that the waste met these conditions.
5. Wastes are not K181 if they are already hazardous for any other Listing or Characteristic. Wastes may also not be K181 if all the exemption conditions specified in 40 CFR 261.32(d) are met. The generator must maintain documentation demonstrating fully that the waste met those conditions.
6. Wastes are not K044, K045, or K047 if they do not exhibit the characteristic of reactivity at the point of generation without treatment.
   For more information on this exemption, see MPCA hazardous waste fact sheet #8.01, Exclusion of Some Characteristic Wastes under Certain Conditions, available on the MPCA's hazardous waste publications Web page.
7. K051 includes only API separator sludge generated at petroleum refineries under SIC Code 2911.
8. K171 and K172 do not include inert support media.
9. K069 currently does not include sludge generated from secondary acid scrubber systems, under the terms of an EPA administrative stay. This stay will remain in effect until further notice is published in the Federal Register.

Wastes mixed with listed waste

If a listed waste is mixed with any other waste, the entire mixture then takes on the listed waste's identity and requirements.

More information

Your metropolitan county and the MPCA have staff available to answer waste management questions. For more information, contact your metropolitan county hazardous waste office or your nearest MPCA regional hazardous waste staff. For information about waste reduction, contact the Minnesota Technical Assistance Program.

Metro County Hazardous Waste Offices

Anoka	763-422-7093
Carver	952-361-1800
Dakota	952-891-7557
Hennepin	612-348-3777
Ramsey	651-266-1199
Scott County	952-496-8475
Washington County	651-430-6655
Web sites	www.co.[county].mn.us

Minnesota Technical Assistance Program

Toll free	1-800-247-0015
Metro	612-624-1300
Web site	www.mntap.umn.edu

Minnesota Pollution Control Agency

Toll free (all offices)	1-800-657-3864
Brainerd	218-828-2492
Detroit Lakes	218-847-1519
Duluth	218-723-4660
Mankato	507-389-5977
Marshall	507-537-7146
Rochester	507-285-7343
St. Paul	651-296-6300
Willmar	320-214-3786
Web site	www.pca.state.mn.us