P-list and F-list of acute hazardous wastes

Identifying and managing acute hazardous wastes

All wastes generated by businesses and government entities in Minnesota must be assumed to be hazardous wastes unless evaluated as non-hazardous by the generator of the waste. Waste may be hazardous due to either being included on any of the five hazardous waste lists: F, K, P, U, or PCB; or by displaying any hazardous waste characteristic: Ignitability, Oxidizer, Corrosivity, Reactivity, Toxicity, or Lethality.

For information on the other lists and characteristics, see MPCA fact sheets:

#w-hw2-00	F-list of hazardous waste	https://www.pca.state.mn.us/sites/default/files/w-hw2-00.pdf
#w-hw2-01	K-list of hazardous waste	https://www.pca.state.mn.us/sites/default/files/w-hw2-01.pdf
#w-hw2-03	U-list of hazardous waste	https://www.pca.state.mn.us/sites/default/files/w-hw2-03.pdf
#w-hw4-48a	Identifying PCBs	https://www.pca.state.mn.us/sites/default/files/w-hw4-48a.pdf
#w-hw2-04	Characteristic wastes	https://www.pca.state.mn.us/sites/default/files/w-hw2-04.pdf
#w-hw2-05	The lethality characteristic	https://www.pca.state.mn.us/sites/default/files/w-hw2-05.pdf

The Minnesota Pollution Control Agency (MPCA) and the metropolitan counties of Anoka, Carver, Dakota, Hennepin, Ramsey, Scott, and Washington (Metro Counties) administer Minnesota's hazardous waste requirements and the evaluation of wastes. For assistance evaluating wastes, see MPCA fact sheet #w-hw1-01, Evaluate waste, at https://www.pca.state.mn.us/sites/default/files/w-hw1-01.pdf.

What is an acute hazardous waste?

Acute hazardous wastes are hazardous wastes that present specific health or safety risks that subject them to more stringent on-site generation and accumulation limits, discussed in the Managing acute hazardous wastes section on page 7. All P-listed wastes, identified in the P-list table starting on page 3 are acute hazardous wastes, as well as six F-listed wastes, identified in the Acute F-list table starting on page 5. In addition, any other waste inseparably mixed with a P-listed or acute F-listed waste also becomes an acute hazardous waste.

Are the Minnesota P-list and F-list the same as the federal P-list and F-list?

Yes, Minnesota has adopted the federal lists of hazardous wastes, found at 40 Code of Federal Regulations (CFR), part 261.33, as amended. This means that any changes to the federal lists made by the U.S. Environmental Protection Agency (EPA) are implemented immediately and automatically in Minnesota.

Are wastes that are not P-listed or F-listed non-hazardous?

Wastes that have been evaluated as not P-listed may still be a hazardous waste due to another list or displaying a characteristic. You must continue to assume a waste is hazardous and manage it accordingly until it has been evaluated as non-hazardous under all the applicable lists and characteristics.

When are wastes regulated under the P-list?

A waste is only regulated under the P-list when it is disposed of *unused* for its intended purpose. Dilution or other preparation of a product for use is not considered being used for the intended purpose.

For example, a sodium azide-based pesticide would be a P-listed acute hazardous waste if discarded before use, even if it was discarded after being diluted or otherwise prepared for use. However, overspray of the used pesticide rinsed from a crop duster airplane after a flight would no longer be a P-listed waste because the overspray is waste resulting from use of the pesticide.

Is any waste containing an ingredient on the P-list regulated?

A waste is regulated under the P-list only if the ingredient contained in the list is the sole active ingredient of the product that became a waste. Active ingredients are those that perform the primary function of the product, regardless of the concentration of those ingredients. Ingredients used as preservatives, solvents, stabilizers, and adjuncts are not active ingredients unless that is the function of the product.

For example:

- Sodium azide is the sole active ingredient in some broad-spectrum pesticides. These pesticides would be P-listed acute hazardous wastes if discarded before use.
- Some automotive airbag activators, however, contain ferric oxide as an oxidizer in addition to sodium azide as a propellant, both active ingredients. These activators would not be P-listed wastes if discarded, because the sodium azide was not the sole active ingredient.
- Finally, some pregnancy test strips contain sodium azide as a preservative. These strips would not be P-listed wastes if discarded because the sodium azide did perform the function of the product, and was therefore not an active ingredient.

How do I read the P-list and F-list tables?

Each waste entry in the P-list table starting on page 3 consists of five elements: the waste code, Chemical Abstract Service (CAS) Registry number, its generic listed name, the listing reason, and notes specific to that waste. The Acute F-list table starting on page 5 does not include the CAS Registry number, since each of these wastes may include several different chemical compounds.

Waste code

Every Listed waste is assigned a unique four-character waste code. Use this code to annually report your site's hazardous waste generation to the MPCA or Metro County and to identify wastes on a *hazardous waste manifest*. For more information about using waste codes on a manifest, see MPCA fact sheet #w-hw1-07, Manifest shipments of hazardous waste, at https://www.pca.state.mn.us/sites/default/files/w-hw1-07.pdf.

CAS Registry number

The CAS Registry assigns a unique number to individual chemical compounds to differentiate them from similar compounds that may have different physical structures or confusingly close generic or common names.

However, though a single CAS Registry number is shown for each waste in the P-list, the CAS Registry number is included only as an aid to identification and does not restrict the listing to the individual chemical compound assigned that CAS Registry number. ***All wastes having the generic name in the P-list are regulated, regardless of their specific CAS numbers, unless otherwise noted.***

Generic listed name

The P-list is organized alphabetically by the chemical compounds' generic names. However, chemical compounds may often be known by many different names, and only one of those names may be in the P-list. ***Any waste having the generic name in the P-list is regulated, regardless of whether your site might know it by another name that is not listed.*** The generic names on the F-list describe the source of the regulated waste.

Listing reason

Acute hazardous wastes may belisted for any of three reasons, indicated by a capital letter; they are acutely toxic (H), reactive (R), or toxic (T).

Note: The toxic (T) listing reason is different and has a separate definition from the Toxicity Characteristic. Wastes may be listed for being toxic (T) without displaying the Toxicity Characteristic and vice versa.

Notes

Many listed wastes have additional listing-specific information, including special definitions and potential exemptions. These notes are explained in the Notes on Listings section on page 6.

P-list table

Waste code	CAS registry #	Generic listed name	Listing reason	Notes
P002	591-08-2	1-Acetyl-2-thiourea	H	
P003	107-02-8	Acrolein	H	
P070	116-06-3	Aldicarb	H	
P203	1646-88-4	Aldicarb sulfone	H	
P004	309-00-2	Aldrin	H	
P005	107-18-6	Allyl alcohol	H	
P006	20859-73-8	Aluminum phosphide	R, T	
P007	2763-96-4	5-(Aminomethyl)-3-isoxazolol	H	
P008	504-24-5	4-Aminopyridine	H	
P009	131-74-8	Ammonium picrate	R	1
P119	7803-55-6	Ammonium vanadate	H	
P010	7778-39-4	Arsenic acid H_3 AsO_4	H	
P011	1303-28-2	Arsenic pentoxide	H	
P012	1327-53-3	Arsenic trioxide	H	
P054	151-56-4	Aziridine	H	
P067	75-55-8	Aziridine, 2-methyl-	H	
P013	542-62-1	Barium cyanide	H	
P028	100-44-7	Benzyl chloride	H	
P015	7440-41-7	Beryllium powder	H	2
P017	598-31-2	Bromoacetone	H	
P018	357-57-3	Brucine	H	
P021	592-01-8	Calcium cyanide	H	
P127	1563-66-2	Carbofuran	H	
P022	75-15-0	Carbon disulfide	H	
P189	55285-14-8	Carbosulfan	H	
P023	107-20-0	Chloroacetaldehyde	H	
P024	106-47-8	p-Chloroaniline	H	
P029	544-92-3	Copper cyanide	H	
P030	----------	Cyanides (soluble cyanide salts), not otherwise specified	H	
P031	460-19-5	Cyanogen	H	
P033	506-77-4	Cyanogen chloride	H	
P016	542-88-1	Dichloromethyl ether	H	
P036	696-28-6	Dichlorophenylarsine	H	
P037	60-57-1	Dieldrin	H	
P038	692-42-2	Diethylarsine	H	
P043	55-91-4	Diisopropylfluorophosphate (DFP)	H	
P044	60-51-5	Dimethoate	H	
P191	644-64-4	Dimetilan	H	
P020	88-85-7	Dinoseb	H	
P039	298-04-4	Disulfoton	H	
P049	541-53-7	Dithiobiuret	H	
P050	115-29-7	Endosulfan	H	
P088	145-73-3	Endothall	H	
P051	72-20-8	Endrin & metabolites	H	3, 4
P042	51-43-4	Epinephrine	H	5

Waste code	CAS registry #	Generic listed name	Listing reason	*Notes*
P097	52-85-7	Famphur	H	
P056	7782-41-4	Fluorine	H	
P057	640-19-7	Fluoroacetamide	H	
P058	62-74-8	Fluoroacetic acid, sodium salt	H	
P198	23422-53-9	Formetanate hydrochloride	H	
P197	17702-57-7	Formparanate	H	
P059	76-44-8	Heptachlor	H	6
P062	757-58-4	Hexaethyl tetraphosphate	H	
P116	79-19-6	Hydrazinecarbothioamide	H	
P063	74-90-8	Hydrogen cyanide	H	
P060	465-73-6	Isodrin	H	
P192	119-38-0	Isolan	H	
P196	15339-36-3	Manganese dimethyldithiocarbamate	H	
P065	628-86-4	Mercury fulminate	R, T	
P199	2032-65-7	Methiocarb.	H	
P066	16752-77-5	Methomyl	H	
P068	60-34-4	Methyl hydrazine	H	
P064	624-83-9	Methyl isocyanate	H	
P071	298-00-0	Methyl parathion	H	
P190	1129-41-5	Metolcarb	H	
P128	315-8-4	Mexacarbate	H	
P073	13463-39-3	Nickel carbonyl	H	
P074	557-19-7	Nickel cyanide	H	
P075	54-11-5	Nicotine & salts	H	3, 7
P076	10102-43-9	Nitric oxide	H	
P077	100-01-6	p-Nitroaniline	H	
P078	10102-44-0	Nitrogen dioxide	H	
P081	55-63-0	Nitroglycerine	R	1
P082	62-75-9	N-Nitrosodimethylamine	H	
P084	4549-40-0	N-Nitrosomethylvinylamine	H	
P085	152-16-9	Octamethylpyrophosphoramide	H	
P087	20816-12-0	Osmium tetroxide	H	
P194	23135-22-0	Oxamyl	H	
P089	56-38-2	Parathion	H	
P034	131-89-5	Phenol, 2-cyclohexyl-4,6-dinitro-	H	
P048	51-28-5	Phenol, 2,4-dinitro-	H	
P047	534-52-1	Phenol, 2-methyl-4,6-dinitro- & salts	H	3
P202	64-00-6	Phenol, 3-(1-methylethyl)-, methyl carbamate	H	
P046	122-09-8	Phentermine	H	8
P092	62-38-4	Phenylmercury acetate	H	
P093	103-85-5	Phenylthiourea	H	
P094	298-02-2	Phorate	H	
P095	75-44-5	Phosgene	H	
P096	7803-51-2	Phosphine	H	
P041	311-45-5	Phosphoric acid, diethyl 4-nitrophenyl ester	H	
P040	297-97-2	Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester	H	

Waste code	CAS registry #	Generic listed name	Listing reason	Notes
P204	57-47-6	Physostigmine	H	
P188	57-64-7	Physostigmine salicylate	H	
P098	151-50-8	Potassium cyanide	H	
P099	506-61-6	Potassium silver cyanide	H	
P201	2631-37-0	Promecarb	H	
P101	107-12-0	Propanenitrile	H	
P027	542-76-7	Propanenitrile, 3-chloro-	H	
P069	75-86-5	Propanenitrile, 2-hydroxy-2-methyl-	H	
P102	107-19-7	Propargyl alcohol	H	
P103	630-10-4	Selenourea	H	
P104	506-64-9	Silver cyanide	H	
P105	26628-22-8	Sodium azide	H	
P106	143-33-9	Sodium cyanide	H	
P108	57-24-9	Strychnine & salts	H	3
P109	3689-24-5	Tetraethyldithiopyrophosphate	H	
P110	78-00-2	Tetraethyl lead	H	
P111	107-49-3	Tetraethyl pyrophosphate	H	
P112	509-14-8	Tetranitromethane	R	1
P113	1314-32-5	Thallic oxide	H	
P114	12039-52-0	Thallium(I) selenite	H	
P115	7446-18-6	Thallium(I) sulfate	H	
P045	39196-18-4	Thiofanox	H	
P014	108-98-5	Thiophenol	H	
P026	5344-82-1	Thiourea, (2-chlorophenyl)-	H	
P072	86-88-4	Thiourea, 1-naphthalenyl-	H	
P185	26419-73-8	Tirpate	H	
P123	8001-35-2	Toxaphene	H	9
P118	75-70-7	Trichloromethanethiol	H	
P120	1314-62-1	Vanadium pentoxide	H	
P001	81-81-2	Warfarin & salts, when present at concentrations > 0.3%	H	3, 10
P121	557-21-1	Zinc cyanide	H	
P122	1314-84-7	Zinc phosphide $Zn_3 P_2$, when present at concentrations > 10%	R, T	11
P205	137-30-4	Ziram	H	

Acute F-list table

Waste code	Generic listed name	Listing reason	Notes
F020	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tri- or tetrachlorophenol, or of intermediates used to produce their pesticide derivatives.	H	
F021	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of pentachlorophenol, or of intermediates used to produce its derivatives.	H	
F022	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tetra-, penta-, or hexachlorobenzenes under alkaline conditions.	H	

Waste code	Generic listed name	Listing reason	Notes
F023	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production of materials on equipment previously used for the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tri- and tetrachlorophenols.	H	
F026	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production of materials on equipment previously used for the manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tetra-, penta-, or hexachlorobenzene under alkaline conditions.	H	
F027	Discarded unused formulations containing tri-, tetra-, or pentachlorophenol or discarded unused formulations containing compounds derived from these chlorophenols.	H	12

Notes on listings

1 Wastes are not P-listed if listed solely for reactivity (R) and the waste does not exhibit the characteristic of reactivity at the time it becomes a waste, also known as *at the point of generation*. Includes P009, P081, and P112. See MPCA fact sheet #w-hw8-01, Exclusion of some characteristic wastes, at: https://www.pca.state.mn.us/sites/default/files/w-hw8-01.pdf.

2 Beryllium in any form at > 2% is an MN01 lethal hazardous waste regardless of whether the waste also meets the P-list definition. See The lethality characteristic on page 1.

3 These listings include both the named parent compound and also daughter compound, including salts. However, the CAS Registry number is given only for the parent compound. Includes P001, P047, P051, P075, and P108.

4 Endrin in a liquid at a concentration of > 0.02 milligrams per liter (mg/L), or in a solid with a leachate at that concentration, is a D012 toxicity characteristic hazardous waste regardless of whether the waste also meets the P-list definition. See Characteristic wastes on page 1.

5 Epinephrine salts are not P-listed. Epinephrine at a concentration > 0.24% is an MN01 lethal hazardous waste regardless of whether it also meets the P-list definition. See MPCA fact sheet #w-hw3-35, Regulatory consensus, at: https://www.pca.state.mn.us/sites/default/files/w-hw3-35.pdf.

6 Heptachlor in a liquid at a concentration of > 0.008 milligrams per liter (mg/L), or in a solid with a leachate at that concentration, is a D031 toxicity characteristic hazardous waste regardless of whether the waste also meets the P-list definition. See Characteristic wastes on page 1.

7 Nicotine-containing over-the-counter patches, gums, and lozenges that are nicotine replacement therapies approved for that use by the U.S. Food & Drug Administration (FDA) and tobacco products are not P-listed.

Prescription nicotine pharmaceuticals and consumer-ready recreational vaping products containing nicotine remain P075 acute hazardous wastes when discarded but are considered pharmaceuticals and are eligible for pharmaceutical hazardous waste management allowances. See MPCA fact sheet #w-hw3-33, Changes in pharmaceutical waste management, at: https://www.pca.state.mn.us/sites/default/files/w-hw3-33.pdf.

Nicotine-containing manufacturing or compounding materials and intermediates remain fully regulated P075 acute hazardous wastes and are not pharmaceuticals. See MPCA fact sheet #w-hw4-65, Vaping liquids, E-cigarettes, and nicotine wastes, at: https://www.pca.state.mn.us/sites/default/files/w-hw4-65.pdf.

8 Phentermine salts are not P-listed. Phentermine is Listed under the generic listing names Benzeneethanamine, alpha,alpha-dimethyl-; and alpha,alpha-Dimethylphenethylamine. See MPCA fact sheet #w-hw3-35, Regulatory consensus, at: https://www.pca.state.mn.us/sites/default/files/w-hw3-35.pdf.

9 Toxaphene in a liquid at a concentration of > 0.5 milligrams per liter (mg/L), or in a solid with a leachate at that concentration, is a D015 toxicity characteristic hazardous waste regardless of whether the waste also meets the P-list definition. See Characteristic wastes on page 1.

10 Warfarin at a concentration ≤ 0.3% is a U248 listed hazardous waste. See the U-list on page 1.

11 Zinc phosphide at a concentration ≤ 10% is a U249 listed hazardous waste. See the U-list on page 1.

12 F027 does not include formulations containing hexachlorophene synthesized from pre-purified 2,4,5-trichlorophenol as the sole component. See the F-list on page 1.

Managing acute hazardous wastes

Generation

If a site generates:

- Any amount of any acute hazardous waste in a calendar year, the site is ineligible to be considered a Minimal Quantity Generator (MiniQG) for that year.
- One kilogram (2.2 pounds) or less of non-pharmaceutical acute hazardous waste in a month, calculate the status of the site using the volume of all non-pharmaceutical hazardous wastes generated each month. The site may be a Very Small Quantity Generator (VSQG), Small Quantity Generator (SQG) or Large Quantity Generator (LQG).
- More than one kilogram of non-pharmaceutical acute hazardous waste in a month, the site is an LQG, regardless of the volume of other hazardous wastes you generated.

Do not average a site's annual generation; use the actual amount generated each month. You do not need to include acute hazardous waste container weight, just the net waste weight. See MPCA fact sheet #w-hw1-02, Determine generator size, at: https://www.pca.state.mn.us/sites/default/files/w-hw1-02.pdf.

Satellite accumulation

You may accumulate up to only one quart of liquid or one kilogram of solid non-pharmaceutical acute hazardous waste in a satellite accumulation area. Once this limit is reached, manage that accumulated acute hazardous waste under the full hazardous waste container requirements within three days, including performing weekly inspections and labeling the container with the date the limit was reached, which is then the accumulation start date. Acute hazardous waste accumulated only under the satellite accumulation exemption does not trigger the enhanced generator requirements below in the Standard accumulation table. See MPCA fact sheet #w-hw1-05, Accumulate hazardous waste, at: https://www.pca.state.mn.us/sites/default/files/w-hw1-05.pdf.

Standard accumulation

Note: The requirements in this table do not apply to pharmaceutical acute hazardous wastes. For more information on pharmaceutical acute hazardous waste allowances, see MPCA fact sheet #w-hw3-33, Changes in pharmaceutical waste management, at: https://www.pca.state.mn.us/sites/default/files/w-hw3-33.pdf.

If your site is a:	…and accumulates:	…of non-pharmaceutical acute hazardous waste, then:
VSQG	≤ 1 kg	You must meet all SQG requirements except the 180 day accumulation limit, as long as the acute hazardous waste remains onsite. Applicable SQG requirements include employee training, designation of an emergency coordinator, and attempting to make arrangements with local emergency responders. You may continue to accumulate all your hazardous waste indefinitely. The site remains a VSQG.
SQG	≤ 1 kg	No additional requirements apply to the site.
VSQG or SQG	> 1 kg	You must meet all LQG requirements, including the 90 day accumulation limit, as long as the acute hazardous waste remains onsite.
LQG		No additional requirements apply to the site.

Empty containers

Containers that held a non-pharmaceutical acute hazardous waste, or a product that would become a non-pharmaceutical acute hazardous waste when discarded, are not 'empty' for hazardous waste purposes unless they have been triple-rinsed with a solvent, including water that will dissolve the acute hazardous waste or product. The solvent or wastewater must then be managed as an acute hazardous waste itself, including being counted as an acute hazardous waste towards the site's generator status. See MPCA fact sheet #w-hw4-16, Containers that held hazardous wastes or products, at: https://www.pca.state.mn.us/sites/default/files/w-hw4-16.pdf.

More information

Guidance and requirements in this fact sheet were compiled from Minn. R. ch. 7045, and incorporates regulatory interpretation decisions made by the MPCA on July 2, 2004; November 25, 2008; and May 17, 2019. . Visit the Office of the Revisor of Statutes at https://www.revisor.mn.gov/pubs to review Minnesota Rules.

Contact your Metro County or the MPCA with your questions. The MPCA's Small Business Environmental Assistance Program (SBEAP) can also provide free, confidential regulatory compliance assistance. The Minnesota Technical Assistance Program (MnTAP) can help you reduce the amount of hazardous waste your site generates.

Metro County Hazardous Waste Offices

Anoka 763-324-4260
..... https://www.anokacounty.us/
Carver 952-361-1800
..... http://www.co.carver.mn.us/
Dakota 952-891-7557
.....https://www.co.dakota.mn.us/
Hennepin 612-348-3777
..... http://www.hennepin.us/
Ramsey 651-266-1199
..... https://www.ramseycounty.us/
Scott 952-496-8177
..... http://www.scottcountymn.gov/
Washington 651-430-6655
..... https://www.co.washington.mn.us/

Minnesota Pollution Control Agency

Toll free (all offices) 1-800-657-3864
All offices..... 651-296-6300
..... https://www.pca.state.mn.us/

Small Business Environmental Assistance

Toll free 1-800-657-3938
Metro 651-282-6143
..... https://www.pca.state.mn.us/sbeap/

Minnesota Technical Assistance Program

Toll free 1-800-247-0015
Metro 612-624-1300
..... http://www.mntap.umn.edu