Minnesota Pollution Control Agency

Evaluating Paint and Ink Wastes

Waste/Hazardous Waste #4.40, May 2004

This fact sheet is intended for businesses using paints or inks.

Contents

Environmental Concerns

Businesses may produce many different types of paint and ink waste in their manufacturing processes or as a result of the services they provide. Some may contain toxic metals at or above regulatory limits. Solvents are generally used during cleanup that may be hazardous wastes as well as air pollutants. Wastes improperly managed can harm human health and the environment.

Evaluate

Minnesota state law requires any company or business producing a waste to evaluate the waste to determine whether it is hazardous. Waste may be hazardous because it is specifically listed in the law by name or because it displays a hazardous characteristic. **The Minnesota Pollution Control Agency (MPCA) considers paint and ink wastes to be hazardous until properly evaluated and shown to be nonhazardous.**

Examples of paint and ink wastes which are frequently hazardous include:

- unusable liquid paints, stains, or inks;
- paint-thinner wastes of all types;
- paint spray-booth filters and arrestors;
- scrapings from paint booth walls and floors;
- paint-stripping waste;
- rags containing paint, ink, and/or solvent;
- sludge from distilling paint-thinner waste; and
- blanket and fountain washes and other cleanup materials.

(Dry masking tape and paper from spray painting operations are not regulated as hazardous waste at this time. See page 3 for requirements for plastic paint cup liners.)

To determine whether your paint or ink waste is hazardous, answer these two questions:

1. Is the waste listed?

Check the Material Safety Data Sheet (MSDS) to see if your paint thinners, strippers or wash-up materials contain any of the solvents that appear on the F list of hazardous wastes. (See Table 1.)

Table 1: Common F-listed Solvents

F001:	tetrachloroethylene, trichloroethylene, methylene chloride, 1,1,1-trichloroethane and carbon tetrachloride used as degreasers;
F002:	spent solvents listed above that are *not* used as degreasers; 1,1,2-trichloro-1,2,2,-trifluoroethane and chlorobenzene;
F003:	xylene (xylol), acetone, methanol and methyl isobutyl ketone *(MIK)*;
F004:	cresols, cresylic acid and nitrobenzene;
F005:	toluene *(toluol)*, methyl ethyl ketone *(MEK)*, carbon disulfide and benzene; and
	Spent solvent mixtures/blends containing 10 percent of F001, F002, F004 and/or F005 before use.

- If the MSDS states that the product contains 10 percent or more F002 and/or F005 solvents in any combination, waste resulting from its use is listed.

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This material can be made available in alternative formats for people with disabilities.

- If the product is either a pure solvent with an F003 waste code, or if it is an F003 solvent in combination with 10 percent or more of another solvent or combination of solvents on the F list, waste resulting from its use is listed.
- If *unused* discarded thinners, washes, strippers, etc., appear on the P or U lists of hazardous wastes, they are listed. *(P and U lists are found on MPCA hazardous waste fact sheets #2.02 and #2.03.)*
- Rags containing listed wastes are generally listed themselves. *(For more information on managing solvent soaked rags, see MPCA hazardous waste fact sheet #4.61, Towels, Wipes and Sorbents.)*
- If spray guns are cleaned by spraying a solvent from Table 1 into paint booth filters or arrestors, the filters or arrestors are listed.
- If other hazardous or nonhazardous wastes are mixed with wastes resulting from using solvents or solvent mixtures listed in Table 1, the entire mixture becomes listed.
- If your used or unused thinners, washes or strippers are not on one of these lists, they may display a hazardous characteristic. *(See question #2.)*
- Pure, discarded paint or ink is not listed; it may, however, display a hazardous characteristic.

2. Does the waste display a hazardous characteristic?

Paint and ink wastes often display one of three hazardous characteristics ignitability, corrosivity, or Toxicity Characteristic (T.C.) Toxicity. Each are discussed below.

Ignitability

- A paint or ink waste is ignitable if it has a flashpoint below 140° Fahrenheit. Oil- or solvent-based paint or ink wastes are usually ignitable. Some latex (water-based) paints can also be ignitable because of the drying agents they contain. To determine the flashpoint of your paint, ink, stain, thinner or solvent, check your MSDS, Section 3 - *Fire and Explosion Hazard Data.*
- A solid waste is ignitable if it can cause fire through friction, absorption of moisture, or spontaneous chemical changes, and when ignited, burns so persistently and vigorously that it creates a hazard.

Solid paint wastes (filters, scrapings, etc.) resulting from the use of oil- or solvent-based paints, inks and thinners may be ignitable. Manage solid oil- and solvent-based paint and ink wastes as hazardous waste unless you determine they are nonhazardous. Solid, dry latex-paint wastes are not generally ignitable. *(They may, however, be T.C. Toxic. See below.)*

NOTE: Air drying ignitable or other hazardous waste is **not** allowed.

Corrosivity

A waste is corrosive if it has a pH of 2.0 or less, or 12.5 or more. Typically, corrosive wastes are produced from paint-stripping processes that use a highly caustic (pH 12.5 or more) liquid stripper. To help determine the pH of a waste, check the MSDS to find the pH of the stripper used *(Section 2 - Physical/Chemical Characteristics)*, use a pH indicator, or have a laboratory perform the test for you.

T.C. Toxicity

Toxicity Characteristic (T.C.) Toxic wastes are wastes which, when tested with the Toxicity Characteristic Leaching Procedure (TCLP), allow certain constituents (contaminants) to leach (dissolve and wash) out of a test solution at levels greater than the maximum allowable concentrations *(see Table 2)*.

Table 2: Common T.C. Toxic Constituents and Maximum Allowable Concentrations in mg/l

Arsenic	5.0
Barium	100.0
Cadmium	1.0
Chromium	5.0
Lead	5.0
Mercury	0.2
Selenium	1.0
Silver	5.0
Methyl ethyl ketone	200.0
Tetrachloroethylene	0.7
Trichloroethylene	0.5

Paint and ink wastes are assumed to be T.C. Toxic unless proven otherwise using one of the following options:

- **Certification —** Ask the manufacturer or supplier of the paints or inks you use to certify in writing that none of the products leach any T.C. Toxic constituents at levels greater than the maximum allowable concentrations. If the manufacturer or supplier is unwilling or unable to give this type of written certification, use the testing option outlined below.
- **Testing —** Have a representative sample of your paint or ink waste tested by an environmental testing

laboratory using the TCLP. There are several parts to the TCLP – metals, volatile organics and pesticides. Test for metals (one or all, depending upon what you know about the waste). You may also need to test for organics. The waste is not T.C. Toxic if the tested levels fall below the maximum allowable concentrations.

If you have determined your paint or ink waste to be **listed or characteristic for ignitability, corrosivity or T.C. toxicity, it is hazardous.** Put the waste in a leakproof container and mark and store it according to the Minnesota Hazardous Waste Rules *(for help, see MPCA fact sheet #1.04/1.05, Mark and Store Hazardous Waste Correctly).* Contact a licensed hazardous waste transporter to arrange for disposal of the waste. If you are a very small quantity generator, you may also participate in a Very Small Quantity Generator Collection Program. For more information about participating in a collection program, see MPCA fact sheet #2.51, *VSQG Collection Program Requirements for Generators.*

If you have determined your waste is not listed and does not display any hazardous characteristics, it is not hazardous. Keep copies of all supporting documents and certification in your records.

If you begin using different materials, you will need to evaluate the waste again.

Air Quality Concerns

Even though a paint, ink or solvent may not be hazardous, it may still pose a concern because it contains volatile organic compounds.

Paints, inks, and solvents typically contain volatile organic compounds (VOCs). VOCs react in the sunlight with nitrogen oxides to form ground level ozone which is a main component of smog. Some VOCs contain hazardous air pollutants (HAPs), which are toxic.

You will need to determine whether your facility is required to obtain an air emissions permit. To do this you will need to consider **all** significant sources of emission at your facility. You will need to include any emissions of VOCs and HAPs when you are making this determination. The fact sheet, *Air Quality Permit Rules*, AQ Doc. #4.03, provides information on air permit requirements. It is located on the Minnesota Pollution Control Agency's (MPCA's) Web site at http://www.pca.state.mn.us/air/pubs/4-03.pdf .

If your paints or inks contain any HAPs, you will also need to determine whether your operation is affected by any National Emission Standards for Hazardous Air Pollutants (NESHAP). For NESHAP information, go to the Environmental Protection Agency's (EPA's) Web site at http://www.epa.gov/ttn/atw/eparules.html .

Businesses that are independently owned and operated and have less than 100 employees can contact MPCA's Small Business Assistance Program (SBAP) for help in making these determinations.

Managing Plastic Paint Cup Liners

When using paint cups with plastic disposable liners, after use the liners must be empty to be eligible for disposal as an industrial solid waste. Evaluate containers that are not empty according to the guidance in this fact sheet.

To prevent waste, mix only what you need and use the right size liner for the job. Use all the paint, until the liner collapses. When you remove the air gun, a small amount of residue from the gun will flow back into the liner. By hand, pour and squeeze that excess liquid paint into your hazardous waste container. If you are using catalyzed paint, after the left-over paint has cured, just pop out the hardened residue. The liner is then an empty container that may be managed as an industrial solid waste. Talk to your waste hauler about industrial solid waste management requirements for this waste.

If you mix up too much paint and want to store it temporarily until you are completely finished with a project, close the paint liner container tightly, then mark it with information that will help you identify the job it was used on and other important information. Since, at this point, you still intend to use it, this paint is not waste.

Each landfill and industrial burner must have an industrial solid waste management plan that specifies the solid wastes it can accept. The plan further specifies how each waste will be evaluated, profiled, delivered (using a non-hazardous manifest or bill of lading) and managed when the waste reaches the facility.

These requirements help ensure wastes are managed in a way that will not harm human health or the environment.

Work closely with your hauler and disposal facility to ensure proper disposal – which will reduce your long-term liability.

Should you determine you do not need the extra paint, **do not throw the paint liner container with the excess paint in the trash. Do not open the paint liner container and dry out the paint.** By hand, pour and squeeze the excess paint into

your hazardous waste paint container. The liner is then an empty container that may be managed as an industrial solid waste. Talk to your waste hauler about industrial solid waste management requirements for this waste.

More Information

Your metropolitan county and the Minnesota Pollution Control Agency have staff available to answer waste management questions. For more information, contact your metropolitan county hazardous waste office or the MPCA office closest to your county. For information about air quality requirements, contact MPCA's Small Business Assistance Program (SBAP). For information and help finding ways to reduce the amount of waste you generate, contact the Minnesota Technical Assistance Program (MnTAP).

Metro County Hazardous Waste Offices

Anoka County	(763) 422-7093
Carver County	(952) 361-1800
Dakota County	(952) 891-7557
Hennepin County	(612) 348-3777
Ramsey County	(651) 773-4466
Scott County	(952) 496-8177
Washington County	(651) 430-6655

Web Site
http://www.co.[county name].mn.us

Minnesota Pollution Control Agency

Toll free (all locations)	(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) 297-2274
Willmar	(320) 214-3786
Small Business Assistance	(651) 282-6143
SBAP toll-free	(800) 657-3938

Web Site ..... *http://www.pca.state.mn.us*

Minnesota Technical Assistance Program (MnTAP)

Toll free	(800) 247-0015
Minneapolis	(612) 624-1300

Web Site ..... *http://www.mntap.umn.edu*