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# Best Management Practices for Treating Waste Polyester-Resin and Gelcoat

————— Hazardous Waste Division Fact Sheet #4.50 September 1997 —————

*This fact sheet is intended for businesses that generate polyester-resin and gelcoat wastes. These might include:*

- archery suppliers and manufacturers of -
- boats and canoes
- tubs and showers
- truck-toppers

## Introduction

Polyester-resin materials often are used in the production of boats, canoes, tub and shower enclosures, pick-up truck toppers, archery arrows, tanks, and vanity tops. As part of the manufacturing process, hazardous resin and gelcoat wastes are generated.

Recently, the Minnesota Pollution Control Agency (MPCA) proposed a “Best Management Practice” for onsite treatment of these hazardous wastes produced. This Best Management Practice will allow businesses to treat quantities of the waste resin and gelcoat onsite in open containers, without a treatment permit, providing that the generator complies with all other applicable storage requirements.

## Generating Resin Wastes in the Fiberglass Industry

Polyester wastes (resin and gelcoat) are generated in several situations. First, and probably most commonly, these wastes are generated during the production process. Typically, liquid resins and gel coats are chemically catalyzed immediately before application, and thus, have a limited useful product life. As the resin/gelcoat and catalyst mixture bonds together, the reaction eventually proceeds to a point where the mixture hardens into a solid that cannot be further processed or utilized. These nonhazardous, solid

wastes are typically disposed of in off-site industrial landfills.

Polyester resin and gelcoat wastes can also be generated as:

- outdated or expired product,
- a color mismatch,
- excess from a one-time project, or
- product that has deteriorated due to exposure to excess cold or heat.

These unused, uncatalyzed product materials are typically found in the original, purchased container, which usually ranges in size from a 5-gallon pail to a 55-gallon drum. When these materials become unusable for their intended purpose, they must be managed as hazardous waste because they are ignitable, and possibly contain toxic metals.

## The Best Management Practice for Liquid and Semi-Solid Resin and Gelcoat Wastes

The necessary steps to treat waste resin and gelcoat closely parallel the steps involved in producing a polyester product. In other words, both situations require mixing resin and catalyst and allowing time for the mixture to polymerize and cure. Thus, the treatment of the hazardous wastes should resemble typical processing methods employed at your facility.

The major health and safety concerns surrounding the treatment of gelled or semi-solid resin or gelcoat wastes are the organic emissions released as the mixture hardens. During the curing process, the mixture will emit styrene into the air. Locate the treatment area appropriately with respect to plant ventilation and pollution control equipment to minimize employee exposure, in compliance with OSHA regulations.

The following Best Management Practice is recommended when polymerizing gelled or semi-solid resin and gelcoat hazardous waste:

1. Where justifiable, identify and implement changes to your present operation that reduce the generation of waste resin and gelcoat.

#### ***Treatment***

2. For safety reasons, treat your hazardous resin and gelcoat wastes in an open-top accumulation container in quantities small enough (five gallons or less) to adequately dissipate the heat generated from the chemical reaction. **Chemical treatment via catalyzation is the only treatment method approved under this Best Management Practice.**
3. The location of the treatment area should be adequately ventilated to minimize worker exposure to the emissions, and to take advantage of pollution-control equipment. A suitable location for treatment may be within a gelcoat booth, for example.
4. Once solidification appears complete (usually a matter of minutes), break up the solidified mass to verify complete polymerization. If free liquids are still present after treatment, conduct further treatment or dispose of the partially solid mass as a hazardous waste.

#### ***Monitoring Air Emissions During Treatment***

5. Styrene is a hazardous air-pollutant. Although styrene emissions from the treatment process should be small, calculate the emissions quantity to verify compliance with applicable air-quality permit requirements. Emissions from treatment may be less than 1 percent of total emissions from production. If you need assistance with your existing permit, or in obtaining a permit, help is available. The MPCA Air Quality Division offers

assistance to businesses, including fact sheets, site visits and help with emission calculations.

Please contact the following programs for assistance:

- Small Business Compliance Assistance Program (for businesses with 100 or fewer employees): (800) 657-3938 OR (612) 282-6143
- Permit Technical Assistance Program: (800) 646-6247 OR (612) 282-5844

## **Reporting Requirements**

### ***Obtain Approval***

6. In accordance with Minn. R. 7045.0450, subp. 3, item K, because you are treating a hazardous waste in open accumulation containers, you must submit for approval a copy of your treatment proposal to the MPCA Hazardous Waste Division, Permit and Review Unit. The treatment proposal should include relevant and appropriate information required under Minn. R. 7045.0539, subp. 2, items A to C, and Best Management Practices discussed in this fact sheet. You must receive notification by the Commissioner that the treatment activity is approved. Once approved, the treatment procedure should be maintained onsite.

### ***Keep Records***

7. You should keep a record of your treatment activities in accordance with Minn. R. 7045.0294. Examples of information you may want to keep track of include: description, date, and quantity of each hazardous waste treated, results of waste analysis, and which solid waste disposal facility you sent the treated waste for disposal.

### ***Dispose Treated Waste***

8. Before shipping your treated waste offsite, please verify with the MPCA that your solid waste disposal facility is acceptable for handling resin and gelcoat cured wastes. You may also want to contact facility personnel yourself to make sure they accept these kinds of wastes.

**For more information on:**

- Hazardous waste management and storage requirements — MPCA Hazardous Waste Division, Business Assistance Unit 297-8363, or (800) 657-3724.
- Obtaining approval to treat liquid and semi-solid resin and gelcoat wastes.— MPCA Hazardous Waste Division, Permit and Review Unit 297-8380.
- Resin and gelcoat waste treatment questions.— MNTAP 627-4646, or (800)247-0015.
- Industrial solid waste facilities that are approved to accept cured resin and gelcoat wastes.— MPCA Solid Waste Division 296-8621.

