

# Spray Painting and Coating Operations

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## Introduction

Common industries that work with spray painting and coating operations include manufacturing industries, automotive paint shops, furniture manufacturing, art departments and other commercial activities. Spray painting and coating processes generate solid and hazardous wastes that must be handled, stored and disposed of in accordance with state and federal regulations. Hazardous waste regulations are found in chs. NR 660-679 of the Wisconsin Administrative Code.

This document provides general instructions for the identification, handling and disposal of wastes commonly generated by individuals, companies or institutions that operate painting and coating processes. These processes typically utilize blasting materials, cleaning solvents or paint booth filters, and generate paint dust and waste paint.

Automotive paint shops may also offer maintenance and repair services which generate aerosol cans, used antifreeze, used oil, cleaning solvents, solvent-contaminated wipes (rags), lead acid batteries and tires.

Additional guidance on managing these waste streams can be found in the publication [WA 1578](#).

## Identifying Hazardous Wastes

Waste is a hazardous waste if it is “**characteristic**” (ignitable, corrosive, reactive, or toxic), or “**listed**” in [Subch. D of NR 661](#), Wis. Adm. Code. A non-hazardous product may pick up contaminants during use and may become hazardous waste after use. **For every waste generated, you must determine if the waste is a hazardous waste in order to properly manage it.**

To make a waste determination, the generator can use either laboratory analysis results and/or apply knowledge of the waste based on the materials and processes used to generate the waste. While sampling and analysis might not be considered as convenient as relying solely on applying knowledge, it provides advantages. An accurate waste determination is both a critical factor in demonstrating compliance with hazardous waste regulations and a factor in helping your business avoid costly over-classification of wastes.

Guidance on making waste determinations can be found in the publication [WA 1152](#).

## Generator Requirements

The amount of hazardous waste you generate determines your generator status and will impact regulatory requirements. For example, automotive paint shops are often categorized as very small quantity generators (VSQG) based on the amount of hazardous waste generated. Some reduced regulations may apply to a VSQG, as outlined on page 5.

This guidance focuses on identifying specific waste streams associated with painting and coating operations and the container requirements associated with these wastes. For more information on generator status and accumulation requirements, go to the Wisconsin Department of Natural Resources (DNR) hazardous waste program “overview” at <https://dnr.wi.gov/topic/Waste/Hazardous.html>.

## Container Requirements

The regulatory requirements for container management include:

- use a container compatible with the waste;
- keep container closed unless waste is being added or removed;
- maintain the container in good condition – if leaking transfer waste to a new container;
- label containers with the words “Hazardous Waste”; and
- separate incompatible wastes by storing them away from each other or constructing berms or dikes between containers of incompatible wastes.

Certain waste types should be collected separately to allow for recycling. Used antifreeze, used oil and spent solvents can be reclaimed or potentially reused. Specific container labeling such as “waste solvents,” “used oil” or “used antifreeze” is required and will help ensure that the collected materials can be recycled.

## Cleanup of Spills

Be prepared to clean up incidental spills with absorbent materials such as Oil-Dri or kitty litter, or absorbent pads. Designate a specific container for the absorbent wastes. Oil-containing absorbents may go to a licensed landfill if there is no free-flowing liquid coming from the absorbent and the absorbent is not a hazardous waste. Used oil absorbents may also be collected by a recycler for oil or energy recovery. Absorbents used to clean up other wastes may need to be managed as hazardous waste.

Certain spills may need to be reported to the DNR and should be cleaned up by a professional contractor, particularly if the spill has drained into a floor drain, storm drain or outside the building on the ground or parking lot. **The DNR spills hotline number is 1-800-943-0003.** For information on what type of spills must be reported visit <https://dnr.wi.gov/topic/Spills/>.

## Transport, Treatment and Disposal

### **Cradle-to-Grave under the Resource Conservation and Recovery Act (RCRA)**

As the generator, you are responsible for your hazardous wastes from the point of generation (cradle) through proper transportation, storage, treatment and finally disposal (grave). Unless you are a VSQG, a hazardous waste manifest must be used when offering hazardous waste for transport. For details on hazardous waste manifest requirements refer to [WA 1176](#).

All generators who manifest their hazardous wastes must obtain an U.S. Environmental Protection Agency (EPA) identification number and properly route manifest copies. Contact your local DNR office for information on obtaining an identification number and properly manifesting shipments of hazardous waste. If you are a small or large hazardous waste generator, your wastes must be transported by a licensed hazardous waste transporter. The hazardous waste must be transported to:

- Licensed hazardous waste treatment, storage or disposal (TSD) facilities;
- Hazardous waste landfills permitted or licensed to accept hazardous waste;
- Facilities that beneficially use or reuse, legitimately recycle or reclaim the hazardous waste; or
- Facilities that treat the waste prior to beneficial use or reuse, or legitimate recycling or reclamation.

*Note: for details on VSQG transport and disposal see page 5.*

# Common Wastes

The following materials are commonly used, replaced, or collected in spray painting and coating operations and require proper management to protect workers, public health and the environment. All hazardous and non-hazardous waste determinations must be documented and retained by the generator. Additional information is available on the DNR website or in publications referenced below for specific common wastes.

1. **Blasting materials and paint dust.** Used blasting material generated from the removal of paint from structures, equipment and vehicles may contain heavy metals above the RCRA regulatory limit and therefore would need to be managed as a hazardous waste. To determine if heavy metals are present in the waste material, you will need to have a representative sample tested using the Toxicity Characteristic Leaching Procedure (TCLP).

Some blasting media companies and suppliers may claim their product is a non-hazardous waste when disposed. However, their claims do not account for contamination of the blasting material by paint chips containing heavy metals, so a waste determination must be made. Waste blasting material that is not hazardous can go to a licensed solid waste landfill for disposal.

2. **Cleaning Solvents and Thinners, On-site Reclamation and Solvent-Contaminated Wipes.**

**Cleaning solvents and thinners** (e.g., naphtha, mineral spirits, paint thinner, Stoddard solvent, chlorinated and unchlorinated solvents) are commonly used in parts washers and may be ignitable and/or toxic. Best management practices include:

- Posting the solvent use procedures near the work area.
- Keeping solvent containers closed when not in use to prevent the volatilization of solvents to the air.
- Avoiding mixing different types of solvents into the same container as it may limit recycling options, increase disposal costs, or cause adverse reactions.
- Using a two-stage cleaning process to extend the life and effectiveness of the cleaning solvent.
- Recycling waste solvents with an on-site still.
- Scheduling regular pick-ups of waste solvents by licensed, reputable recyclers or TSDs in order to prevent storing wastes for long periods of time.

Spraying excess listed solvents into filters as a means of disposal is a violation of the DNR air management regulations.

**On-site distillation units** can be used to reclaim used solvents for reuse and reduce the amount of hazardous waste sent off-site. These distillation units can be purchased or leased from solvent management companies. Still bottoms from the distillation process may be a characteristic and/or listed hazardous waste. For details, see [WA1523](#).

**Solvent-contaminated wipes** may be excluded from hazardous waste and solid waste regulations. Management must be consistent with EPA's conditional exclusions effective Jan. 31, 2014. A wipe is a woven or non-woven shop towel, rag, pad or swab made of wood pulp, fabric, cotton, polyester blends or other materials.

To qualify for the exclusion, the wipes must have been used with a specific group of solvents (F001-F005). Collection, labeling, handling and recordkeeping requirements must be met in order to qualify for the exclusion. For details, see [WA 1207](#).

3. **Paints, solvent or oil-based**

Waste solvent or oil-based paints are not considered listed hazardous wastes but are likely to be ignitable (D001) characteristic hazardous wastes. Some paints still contain barium (D005) and chromium (D007), which are RCRA metals and therefore need to be evaluated to determine if these metals are below the RCRA limit.

Purchasing and using only what is needed will limit the amount of paint waste generated. Disposable paint pot liners can be used to reduce the amount of solvents used for cleanup. In most cases, the used disposable paint pot liners containing residual paint are not a hazardous waste. Use alternative cleaning products such water-based or citrus-based cleaning solutions to avoid generating hazardous waste.

#### 4. Paint booth filters

Used paint booth filters must be evaluated to determine if they are hazardous waste.

**Characteristic hazardous waste:** Filters can exhibit a characteristic (e.g. metals or organic constituents) that would cause them to be a hazardous waste due to TCLP values or ignitability. If the filters are completely dry before removal from the spray booth, organic constituents and ignitability should not be a concern; however, certain chemicals, even when completely dry may react and spontaneously combust (see page 5). It is important to work with your paint manufacturer to address this concern.

**Listed hazardous waste:** Waste paints, and the associated used filters, that contain listed solvents as part of the paint formulation would not be classified as a listed waste, but they may still exhibit a characteristic that would cause them to be hazardous waste. However, if a listed solvent was used for cleaning, such as cleaning paint guns and then discharging the waste paint and solvents onto the filter, the used paint filter would be a listed hazardous waste.

Paint manufacturers or suppliers may claim that their coatings do not contain metals or do not leach metals above regulatory levels. Safety Data Sheets (SDSs) provide information on the ingredients in products but typically only list ingredients with concentrations equal to or greater than 1%<sup>1</sup>. Therefore, you may need to check with the manufacturer for additional information or collect a sample for analysis to determine if it is non-hazardous.

Paint filters that are hazardous waste must be managed at a licensed, permitted or exempt hazardous waste facility such as a TSD. Non-hazardous filters may be disposed with other solid wastes. For liability reasons, persons generating non-hazardous filters may choose to dispose of the filters as hazardous waste at a licensed hazardous waste facility.

Air intake filters designed to remove dust and other small airborne particulates are not hazardous waste under normal circumstances.

#### Spontaneous combustion

Some paints and solvents (e.g., nitrocellulose lacquers, alkyd enamel resins, linseed oil, and drying oils) oxidize during the curing process and generate heat. If the heat cannot dissipate, the temperature can increase to a point where the paint filters can spontaneously combust and cause a fire. Suggested management methods for used paint filters include:

- Waiting until the curing reaction has completed before disposing waste paint filters. This may require running the spray booth fan for several hours after painting has been completed. If your facility has an air quality permit, be sure to follow any requirements which apply.
- Storing filters loosely in a leak-proof tightly sealed metal drum. This prevents the filters from becoming compressed within the drum, and from oxygen reaching the filters, decreasing the likelihood of spontaneous combustion.
- Keeping the storage containers at normal ambient temperatures as higher temperatures increase the risk of spontaneous combustion.

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<sup>1</sup> A 1% concentration is equal to 10,000 parts per million (ppm). The TCLP range for heavy metals to be a hazardous waste is from .2 ppm to 100 ppm.

## Very Small Quantity Generator Requirements

If you generate **less than 220 pounds** on a monthly basis and accumulate less than 2,205 pounds of hazardous waste on-site at any time (roughly equal to five 55-gallon drums), your business is considered a VSQG and qualifies for reduced regulations. However, if you exceed either the monthly limit or the accumulation limit, or if you are not in compliance with the VSQG regulations, more stringent hazardous waste management requirements will apply. Because of this, it is important to keep track of both how much hazardous waste you generate per month, and the total amount accumulated on-site.



To qualify for the reduced VSQG requirements in Wisconsin, you must make accurate waste determinations, use leak-tight containers, close hazardous waste containers except when adding or removing waste, label the containers with the words "hazardous waste," and ensure disposal of your hazardous waste at a licensed or approved facility.

Avoid mixing hazardous waste with non-hazardous waste. The resulting mixture could exhibit a hazardous waste characteristic and the increased volume could change your generator status, increase your hazardous waste regulatory requirements and potentially increase the waste disposal costs.

A VSQG can transport its own waste, without a transportation license, to a treatment, storage or disposal (TSD) facility or a household hazardous waste collection facility that accepts hazardous waste from VSQGs. It is recommended that receipts, or shipment records showing where the hazardous waste was disposed or accepted, be retained for at least three years.

If the VSQG does not self-transport they must use a licensed hazardous waste transporter. These wastes can be transferred through a bill of lading or a hazardous waste manifest. If using a manifest additional requirements apply and the manifest records must be maintained for at least three years. For details on hazardous waste manifest requirements see [WA 1176](#).

Contact your local clean sweep program for information on the location, dates, and times of operation, and to verify that they accept VSQG wastes. The Department of Agriculture Trade and Consumer Protection (DATCP) has a list of state-supported clean sweeps. Go to [www.datcp.wi.gov](http://www.datcp.wi.gov) and search "Clean Sweep".

## DNR Contact Information

For more information on this subject, including other publications, staff contacts and administrative codes and statutes, search by topic or WA publication number at [dnr.wi.gov](http://dnr.wi.gov), contact Waste and Materials Management staff by searching [Hazardous Waste Staff](#) at [dnr.wi.gov](http://dnr.wi.gov).

**Mailing address:** DNR Waste & Materials Management Program, PO Box 7921 Madison, WI 53707

**Email:** [DNRWasteMaterials@Wisconsin.gov](mailto:DNRWasteMaterials@Wisconsin.gov)

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