

Managing Waste Paint Booth Filters

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Using a paint spray booth can help save money and provide better results for customers while protecting workers and the environment. Spray booths with exhaust filters collect paint particles, thus preventing them from polluting the air or lodging in a worker's lungs. Solvent vapors are directed out the stack away from employees, neighboring buildings, and people.

How Are Used Filters Regulated?

No matter which type of exhaust filter you use - wet or dry, fiberglass, paper, styrene or composite - all must be evaluated prior to disposal to determine whether or not they became hazardous during use. Determining if used filters are classified as hazardous can be done in two ways: Evaluating the Material Safety Data Sheets (MSDS) for coatings/solvents used in your shop or laboratory testing using the "Toxicity Characteristic Leaching Procedure" (TCLP).

Evaluating MSDS – Regulators refer to this method as "Knowledge of Waste" and it means you use only coatings that do not contain certain "heavy" metals (listed in table below); and, you have written documentation to show this. Written documentation can include MSDS or a written statement from the paint manufacturer stating that the paint does not contain any of the metals listed in the table below, and therefore filters would not be considered hazardous.

Laboratory Testing - Using the "TCLP" means you send a representative sample of your waste paint filters to a testing lab for analysis. If TCLP test results show heavy metal levels do not exceed the limits in the table below then the filters would not be considered hazardous. If the test results show metal levels above those in the table, then they must be stored and disposed of as hazardous waste. Either way, make sure to keep copies of the lab results on file at your facility.

*Characteristic of Toxicity Maximum Concentration of Contaminants
Maximum Concentration
(mg/l)*

| | | | |
|---------------|-------|---------------|-----|
| Arsenic | 5.0 | Lead..... | 5.0 |
| Barium..... | 100.0 | Selenium..... | 1.0 |
| Cadmium | 1.0 | Chromium..... | 5.0 |
| Silver..... | 5.0 | | |

To reduce costs, laboratory testing should only focus on those metals contained in the coatings as identified on the MSDS sheets (i.e. chromium, cadmium, lead), not the complete range of metals. Testing costs can vary from one lab to another for the same analysis, typically ranging from \$100 to \$200. Please call the SBEAP for advice on collecting samples of your filters for testing and for a list of certified labs.

A filter can also be regulated as hazardous waste if it exhibits the characteristic of "ignitability". To have this characteristic of "ignitability", filters would have to be "capable, under standard temperature and pressure of causing fire through friction, absorption of moisture, or spontaneous chemical changes and, when ignited, burns so vigorously and persistently" (see USEPA 40CFR261.21, 2008) that a hazard is created. Most modern auto body finishes in use today would not render a filter ignitable under this definition. If used filters are thoroughly dry at the time of replacement, solvents will have either evaporated or become part of the polymerized coating.

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☑ **If Filters are Hazardous** they must be managed according to the New York State Hazardous Waste Management Regulations applicable to your facility's generator status. If your business is a Conditionally Exempt Generator (CESQG) or Small Quantity Generator (SQG), contact the SBEAP for additional fact sheet(s) and information on this subject.

☑ **If Filters are Non-Hazardous**, they can be managed as a commercial solid waste. Make sure they are thoroughly dry prior to disposal to minimize the chance of fire. Some dried coatings may give off vapors that can ignite other combustible materials. Minimizing or eliminating the contact between filters and natural fibers, such as paper, will reduce the chance of a fire. Take precautions during hot weather. A large quantity of filters mixed with combustible materials in a covered container sitting in the sun on a hot day can create a problem that can be avoided. Prior to transport, contact your waste hauler and the permitted landfill and follow their requirements to ensure safe transport and disposal of your waste.

Best Management Practices

To ensure that you get maximum performance from your filters, in addition to cost, consider: Capture Efficiency, Durability and Lifespan

- ✓ Store filters in a way that will protect them from dust and damage prior to use;
- ✓ Use correct filter for the type of paint, equipment and booth you use;
- ✓ Use correct air volume and velocity;
- ✓ Minimize overspray – adjust spray guns to ensure proper fan pattern and operating pressure; and
- ✓ Provide training for operators to ensure they are using correct spray techniques.

Paint Booth Stack Design

Paint booth stacks should discharge vertically above the roofline of the building, horizontal discharges are not recommended. The stack discharge must be high enough to avoid the exhaust being circulated adjacent to the building due to building downwash effects or drawn into nearby building intakes. A height of at least four feet above the roof peak is recommended. However, site conditions may warrant a higher stack if nearby buildings are higher than the discharge. The stack must not be equipped with any device that would impede the upward discharge of the exhaust air (i.e. rain caps). Other techniques may be employed to reduce water and snow in the exhaust system (i.e. butterfly caps or stack sleeves).



Finally, Part 212, **General Process Emission Sources** (NYSDEC Air Pollution Control regulations), requires that particulate emissions from any general process exhaust/ventilation stacks do not exceed 0.05 grains per dry standard cubic foot of air exhausted. Provided your spray booth is equipped with a panel filter in good condition, or has a water wall/wash system to capture paint overspray and other dust/particulates generated in the booth, your booth should be capable of meeting this limit.

The information in this fact sheet is intended for general reference only; it is not a full and complete statement of the technical or legal requirements associated with the regulation.

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