COMPLIANCE ASSISTANCE PROGRAM

SPOKANE REGIONAL CLEAN AIR AGENCY

Info

Solvent Cleaning & Air Quality

If you own/operate any size solvent dip tank or parts washer that uses solvents containing halogenated compounds, you are required to comply with National Emission Standards for Hazardous Air Pollutants (NESHAPs) for halogenated organic solvents, as mandated by the 1990 Clean Air Act. This means you must install required controls on equipment and adopt specific work practices, or stop using the chemicals that are regulated under the rule.

What solvents are regulated?

In 1994, the U.S. Environmental Protection Agency (EPA) adopted regulations to control toxic air emissions from solvent cleaning equipment (including dip tanks and parts washers) that use any of these halogenated solvents:

- 1,1,1-trichloroethan
- carbon tetrachloride
- chloroform
- methylene chloride
- perchloroethylene
- trichloroethylene

The rule is a pollution prevention regulation that reduces solvent usage by requiring the use of good housekeeping practices and efficient, well-controlled cleaning equipment.

Why are these solvents regulated?

The six solvents listed above are known or suspected carcinogens, and have high usage and emissions in solvent cleaning. Consequently, the EPA has determined that emissions from cleaning equipment using these solvents present a threat to human health or the environment.

In addition, Washington State Administrative Code, WAC 173-400-040(3)(a), requires reasonable precautions be taken to prevent the release of air contaminants from operations which are a source of fugitive emissions. In Spokane County, Spokane Regional Clean Air Agency considers federal, state and local air pollution control requirements when registering, permitting and inspecting businesses.

Is my facility affected?

All owners/operators at **any** size facility with solvent cleaning equipment that holds, or has a solvent capacity greater than two gallons, that uses any of the six above named solvents are affected by this regulation. (Ask your vendor or refer to your Material Safety Data Sheets [MSDSs] to determine whether you use these chemicals in your cleaning process.) How you are affected depends on the compliance option you choose. The figure below summarizes the rules governing batch cold cleaning equipment. Vapor degreasers have different requirements not covered in this Info Sheet.

Compliance Options	Required Controls	
Dip Tank (Immersion Batch Cold Cleaning Equipment)	**Option 1** 1. Install a sealed cover 2. Achieve 1 inch water layer or ¼" wax layer 3. No work practices required	**Option 2** 1. Install a sealed cover 2. Maintain a freeboard ratio of 0.75 or greater 3. Work practices required (see below)
Parts Washer (Remote Reservoir Batch Cold Cleaning Equipment)	1. Install a sealed cover 2. Work practices required (see below)	

Required Work Practices

1. Store solvent waste in closed containers.
2. Flush parts in freeboard area.
3. Reduce pooling of solvent on and in parts.
4. Do not fill cleaning equipment above fill line.
5. Clean up solvent spills immediately.
6. Store wipe rags in closed metal containers.
7. Do not agitate solvent to the point of splashing.
8. When cover is open, minimize room drafts.
9. Do not clean absorbent materials.
10. Keep cover closed and turn off fans or exhaust systems when not in use.

Are there alternatives ?

Yes. Eliminating or minimizing the use of toxic substances can help your business in many ways, including:

- ▲ meet federal regulations and cut your paperwork burden;
- ▲ reduce costs by using fewer raw materials;
- ▲ cut waste transportation and disposal costs; and
- ▲ reduce long-term liability and insurance costs.

Before looking at alternative cleaning options, it is important to understand your situation. Consider the following questions:

- ▲ What is being cleaned?
- ▲ What are the contaminants?
- ▲ How "dirty" are the parts prior to cleaning?
- ▲ How are the parts getting dirty in the first place?
- ▲ What are the minimum requirements for cleanliness that must be met for this process?
- ▲ Is a specific type of cleaning required by internal or external specifications?
- ▲ Is continuous or batch processing required?

How do I determine if an alternative method will work for me?

Alternative cleaning methods or materials include eliminating the cleaning process; using water-based or semi-water-based cleaning systems and/or materials; using citrus based or biological solvents, or using a specialty cleaning process, such as supercritical carbon dioxide or vacuum de-oiling.

The following steps will help you analyze your cleaning process and possible alternatives.

Step 1: Consider eliminating cleaning

Evaluate the necessity of cleaning your parts.

a) Check your minimum cleanliness requirements, and think carefully about those requirements. You may be "overcleaning." If you can't eliminate cleaning, you may be able to reduce the amount of cleaning (see Step 3, options 1 and 2).

b) Investigate controlling the contamination of parts. You may find that you can meet minimum cleanliness requirements without cleaning. If not, you may be able to reduce the load on the cleaning system (see Step 3, options 1, 2 and 3).

c) Investigate process changes that make cleaning unnecessary. If you are cleaning because of residue put on a part by a current process, see if there is an alternative process that meets your needs without leaving any residue (or that leaves residue that can be left on).

d) Work to change internal specifications that require cleaning, if you can prove it is not technically necessary. If external specifications require cleaning with a regulated substance, inquire with the customer if a change would be acceptable. If not, refer to the required equipment controls and work practices (listed in the box on page 1) and Step 3 on next page.

Step 2: If cleaning is still required, use an alternative cleaning process

Consider cleaning parts with an alternative process.

a) Determine which alternatives are compatible with your parts and will remove contaminants, based on information from vendors, peers or others. Try to identify water-based alternatives.

b) Identify which of the compatible alternatives is most economical and convenient.

c) Have enough representative parts "test cleaned" to verify that the alternative will work, and to identify any modifications you'll need to make to use the new process.

d) Work to change internal specifications that require a specific cleaning process if you can prove a viable alternative exists. If external specifications require cleaning with a regulated substance, inquire with the customer if a change is acceptable.

Step 3: If alternatives are not feasible, optimize current cleaning process

a) Consolidate multiple cleaning steps into one step.

b) Investigate ways to reduce contamination of parts prior to cleaning.

c) Extend solvent "change-out" schedule with vendor.

d) Locate cleaning tanks away from heat sources.

e) Have only trained employees use the equipment.

f) Find a less-toxic solvent.

g) Ensure that the solvent tank cover is closed during non-use.

h) Provide solvent resistant seals between cover and tank.

i) Where practicle, use a layer of water or wax floating on top of the solvent as a means of minimizing evaporation of solvent.

j) Provide a means for draining cleaned parts such that the drained solvent is returned to the solvent tank.

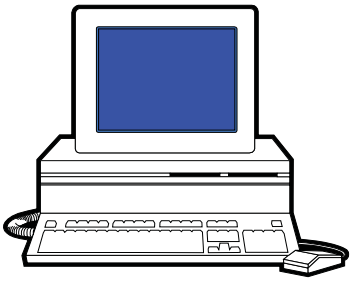
k) Provide a freeboard ratio greater than or equal to .75 (freeboard is the distance from the top of the solvent to the top of the solvent tank. Freeboard Ratio is freeboard height divided by tank width.)

l) Turn off exhaust systems when tank is not in use.

How do I find a less toxic solvent or cleanining process that will work for me?

A wide variety of research has been done on alternative solvents, and the research results can be obtained from the U.S. Environmental Protection Agency, Washington State Department of Ecology, various industry trade associations, and national laboratories (see the partial reference list at the end of this fact sheet). In addition, a variety of tools are now available on the internet. Some of the sites are listed below, where you may find more links to sites and information that may be better suited to your operations.

Solvent Alternative Guide (SAGE) http://clean.rti.org



SAGE is a comprehensive guide designed to provide pollution prevention information on solvent and process alternatives for parts cleaning and degreasing. SAGE does not recommend any ozone depleting chemicals. It is an interactive online tool that evaluates user's current operating scenario and identifies possible surface cleaning alternative solvents and processes best suited to the defined operating and material requirements.

Enviroene http://es.inel.gov

This Web site assists users in finding and implementing common-sense solutions, such as pollution prevention, to environmental problems. Enviroene has a good search mechanism that allows the user to retrieve information developed by federal agencies, other governmental organizations, manufacturers, suppliers, researchers and others. It contains information on alternative solvents that can benefit businesses.

Northwest Business Assistance Network Pacific NW Pollution Prevention Resource Center: http://www.pprc.org

This Web site contains information relating to a wide variety of business types (i.e., printing, wood furniture, metal fabrication, fiberglass fabrication) and industry processes. Information on alternative solvents and cleaning methods, including research results and links to other information sources can be found here.

Where else can I find information that will help my business?

A variety of non-regulatory assistance is available to small businesses. The purpose of these assistance programs is:

- ▲ to explain the air quality rules and recommend ways to comply;
- ▲ to provide free, on-site technical assistance visits;
- ▲ to help businesses estimate their air pollution emissions;
- ▲ to refer businesses to needed resources; and
- ▲ to provide information on potential sources of financing for compliance requirements.

For more information, refer to the contacts listed on the right.

Spokane Regional Clean Air Agency
1101 W. College Ave., Suite 403
Spokane, Washington 99201-2028
509-477-4727
www.spokanecleanair.org

Washington State Department of Ecology
4601 N. Monroe Street
Spokane, WA 99205-1295
509-329-3400
www.ecy.wa.gov

U.S. Environmental Protection Agency
Small Business Gateway
EPA's gateway to environmental information and contacts for small businesses:
www.epa.gov/smallbusiness

Pacific NW Pollution Prevention Resource Center
1326 Fifth Ave, Suite 650
Seattle, WA 98101
206-223-1151
www.pprc.org

* Some of the information in this fact sheet was provided by the Pacific NW Pollution Prevention Resource Center. It is intended for general reference only; it is not a complete statement of the technical or legal requirements

CAP.IS.SOL.6/07

Spokane Regional Clean Air Agency