NEW REGULATION CONTROLLING AIR EMISSIONS FROM SOLVENT CLEANING MACHINES (DEGREASERS)

INTRODUCTION

In December 1994, the U.S. Environmental Protection Agency (EPA) issued national regulations to control toxic air pollutant emissions from solvent cleaning machines that use any of the following halogenated solvents: methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, and chloroform.

Solvent cleaning machines are used to dry materials and remove soils, such as grease, wax, and oil from metal parts (such as nuts, bolts, and springs), circuit boards, sheet metal, assemblies, and other materials. The regulation appeared in the December 2, 1994, edition of the Federal Register (beginning on page 61801). This regulation is a pollution prevention regulation that reduces solvent usage by requiring the use of good housekeeping practices and efficient, well-controlled cleaning machines.

Why the EPA regulated solvent cleaning machines.

The 1990 Clean Air Act (CAA) directs the EPA to regulate emissions into the air of 189 toxic chemicals, including the halogenated solvents covered by this rule, from a wide range of industrial sources. The halogenated solvents listed above are known or suspected carcinogens, and have high usage and emissions in solvent cleaning. Therefore, the EPA has determined that emissions from cleaning machines using these solvents present a threat to human health or the environment. The EPA is regulating the emissions of these machines to meet the requirements of the CAA. The EPA estimates that full compliance with this new regulation will reduce air emissions of these toxic solvents by 85,300 tons annually.

Who is covered by this regulation?

All owners and operators of any size solvent cleaning machine at any size facility that uses one of the six solvents listed above is affected by this regulation.

Owners and operators of batch cold cleaning machines have special provisions under this regulation (see inside).

How you are affected depends on the type of solvent cleaning machine you use and the compliance option that you choose (see inside).

FEATURES OF THE RULE

Flexibility - Choose one of several compliance options.

Pollution Prevention - All compliance options are based on pollution prevention. All controls are based on pollution prevention except carbon adsorbers.

Cost Savings - Savings from reduced solvent use help offset control costs.

COMPLIANCE SCHEDULE

Existing Solvent Cleaning Machines (startup on or before 11/29/93*)

New Solvent Cleaning Machines (startup after 11/29/93*)

AARF before start-up. Start-up or 120 days after whichever 150 days after compliance date.

Compliance Date

Initial Statement of Compliance

*11/29/93 = date of proposed standards

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**THE EPA’s SOLVENT CLEANING AIR TOXICS REGULATION: COMPLIANCE OPTIONS AND REQUIREMENTS**

**For Batch Vapor and In-Line Cleaning Machines**

For each machine, choose either the overall emission limit or the equipment standard (see flow chart).

- If you choose the overall emission limit:
  - meet the appropriate limit
  - there are no equipment, work practice, or operator test requirements

- If you choose the equipment standard:
  - comply by selecting a listed control combination or the idling limit
  - in addition, comply with basic design, work practice, and operator test requirements

### Design Requirements:

1. Cover or reduce room draft.
2. 0.75 freeboard ratio or greater.
4. Liquid and vapor level indicators that shut off solvent supply.
5. Primary condenser (required on vapor cleaning machines).
6. Carbon adsorber, if using a lip exhaust.

### Work Practices:

1. Minimize air disturbances in the cleaning machine and in the room.
2. Minimize solvent loss due to spraying operations.
3. Reduce the pooling of solvent on and in parts.
4. Do not fill cleaning machine above fill line.
5. Do not agitate solvent to the point of causing splashing.
6. During shutdown, turn sump heater off before the primary condenser.
7. Maintain equipment as recommended by the manufacturer.
8. Store solvent waste in closed containers.
9. Do not clean absorbent materials.
10. Take and pass an operator test, if requested.
11. Transfer solvent using leakproof couplings.

### Equipment Standard with Work Practices

<table>
<thead>
<tr>
<th>Cleaning Machine Type</th>
<th>Option</th>
<th>Chemical Storage</th>
<th>Reservoir</th>
<th>Baffle</th>
<th>Vapor</th>
<th>Condenser</th>
<th>Sump Heater</th>
<th>Carbon Adsorber</th>
<th>Room Draft</th>
<th>Work Practices</th>
</tr>
</thead>
</table>
| Batch Vapor Cleaning Machine | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1. Minimize air disturbances in the cleaning machine and in the room.
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3. Reduce the pooling of solvent on and in parts.
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5. Do not agitate solvent to the point of causing splashing.
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7. Maintain equipment as recommended by the manufacturer.
8. Store solvent waste in closed containers.
9. Do not clean absorbent materials.
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### Overall Emission Limit

<table>
<thead>
<tr>
<th>Machine Type</th>
<th>Average Monthly Emission Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Batch Vapor</td>
<td>0.22 kg/m² * hr [0.045 lb/ft² * hr]</td>
</tr>
<tr>
<td>Existing In-Line</td>
<td>0.10 kg/m² * hr [0.021 lb/ft² * hr]</td>
</tr>
</tbody>
</table>

*The amount of solvent in kilograms [pounds] emitted per square meter [foot] of solvent surface area per month.*

### IDling Limit

Demonstrate that the cleaning machine can meet and maintain the following idling mode emission limits (a test method for determining idling emissions is included in the rule):

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*The amount of solvent in kilograms [pounds] emitted per square meter [foot] of solvent surface area per month.*

### In-Line Cleaning Machines

**WORK PRACTICES**

1. 0.75 freeboard ratio or greater.
3. Liquid and vapor level indicators that shut off sump heat.
4. Transfer solvent using leakproof couplings.

**OPERATOR TEST**

**WHAT IS IT?** A short test on operating procedure requirements that must be completed and passed.

**WHO MUST TAKE IT?** Any operator of a batch vapor or in-line solvent cleaning machine that is asked to take the test by the EPA or the EPA’s designee during an inspection. Operators of batch cold cleaning machines are not required to take the test.

**WHERE IS IT?** The complete test and answers are included in Appendix A of the final rule.

**For Batch Cold Cleaning Machines**

For each machine, comply with one of the following equipment requirements and the work practices (machines with water layer are exempt from work practices). There is no operator test requirement.

### Controls

- **Immersion cold cleaning machines**
  - Cover and a 2.5 cm [1 in.] water layer
  - Cover and a 0.75 freeboard ratio or greater
- **Remote Reservoir cold cleaning machines**
  - Cover

### Work Practices

1. Store solvent waste in closed containers.
2. Flush parts in freeboard area.
3. Reduce the pooling of solvent on and in parts.
4. Do not fill cleaning machine above fill line.
5. Clean up spills immediately.
7. Do not agitate solvent to the point of causing splashing.
8. When cover is open, control room drafts.
9. Do not clean absorbent materials.

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