Fact Sheet

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY • ENVIRONMENTAL ASSISTANCE DIVISION • 1-800-662-9278
John Engler, Governor • Russell J. Harding, Director
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How the Clean Air Act Affects Halogenated Solvent Cleaning Operations

FEDERAL NESHAP STANDARDS FOR HALOGENATED SOLVENT CLEANERS

One of the goals of the Clean Air Act Amendments of 1990 (CAAA) is to increase the control of hazardous air pollutants (HAPs). Control of HAPs is achieved through the promulgation of emission standards for categories of sources that emit HAPs.

As required by Section 112 of the CAAA, the United States Environmental Protection Agency (EPA) developed a list of 189 HAPs, identified 174 categories of sources that account for the majority of the releases and developed a schedule for promulgating standards. These federal standards are referred to as the National Emission Standards for Hazardous Air Pollutants (NESHAP).

The NESHAP for Halogenated Solvent Cleaning Operations was proposed in the Federal Register on November 29, 1993, and the final rule was promulgated on December 2, 1994. Corrections to the final rule were added to the Federal Register on December 30, 1994 and June 5, 1995. This fact sheet explains who is subject to the requirements, what the requirements are and when compliance must be achieved. It is to be used only as a guide. This fact sheet is not a substitute for reading and understanding the final rule. The final rule is found in the Federal Register notice published December 2, 1994 (pages 61801-61820). The notice will be published in Title 40, Part 63 Subpart T of the Code of Federal Regulation (40 CFR 63). This regulation is cross referenced throughout this fact sheet. The CFR citations are bracketed. (See the "Where To Go For Additional Help" section of this fact sheet, page 15, for ordering information.)

MICHIGAN DEPARTMENT OF
ENVIRONMENTAL QUALITY
ENVIRONMENTAL ASSISTANCE DIVISION
PO BOX 30457
LANSING MI 48909-7957

Environmental Assistance Center
1-800-662-9278

November 1997 • #9502

AUTHORITY: PA 451 OF 1994 TOTAL COPIES: 300
TOTAL COST: $597.09 COST PER COPY: $1.99
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

RECYCLED PAPER

The final rule consists of seven groups of requirements:

(1) control combinations or emission limits;
(2) equipment standards;
(3) work practice standards;
(4) testing;
(5) monitoring;
(6) recordkeeping; and
(7) reporting.

The specific requirements for each affected facility depend on the type of machine(s) (in-line cold, in-line vapor, batch vapor, or batch cold) and the date of machine installation.

Certain terms frequently used throughout this fact sheet are found in boldface print and defined on pages 15-16.

APPLICABILITY OF THE FINAL RULE

All in-line cold, in-line vapor, batch vapor, and batch cold solvent cleaning machines using solvents with at least 5 percent by weight (in any volume) of methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, chloroform, or any combination of these halogenated HAP solvents are subject to provisions of this rule. Solvent cleaning machines using less than 5 percent by weight of these HAP solvents are exempt from the requirements of the final rule. This rule does not apply to wipe cleaning activities (using a rag or a spray container) or small buckets, pails, and beakers with capacities of 7.6 liters (2 gallons) or less. (Note: On February 11, 1992, President Bush announced that the United States will accelerate the phaseout of substances that deplete the earth's ozone layer. The production of 1,1,1-trichloroethane [also known as methyl chloroform] in the United States was phased out by December 31, 1995).

TYPES OF MACHINES AFFECTED BY THE FINAL RULE

In-line (conveyorized) Solvent Cleaning Machines

An in-line (conveyorized) cleaning machine uses an automated parts handling system to provide a continuous supply of parts to be cleaned. In-line machines are fully enclosed except for the conveyor inlet and exit portals. Figure 1 shows an in-line vapor solvent cleaning machine.

Batch Solvent Cleaning Machines

In a batch cleaning machine, individual parts or a set of parts move through the entire cleaning cycle before new parts are introduced into the machine. Batch machines include open-top machines, as shown in Figures 2(a) and 2(b), and ferris wheel cleaners in which multiple batch loads are simultaneously cleaned. A diagram of a ferris wheel cleaning machine is displayed in Figure 3. Cold cleaning machines use liquid, non-boiling solvent to clean or dry parts, while vapor cleaning machines boil liquid solvent to generate solvent vapor to clean or dry parts.

COMPLIANCE DATES

Existing machines, constructed or reconstructed on or before November 29, 1993, have until December 2, 1997, to comply with all the provisions of this final rule. New machines, constructed or reconstructed after November 29, 1993, and on or before December 2, 1994, must comply by December 2, 1994. New machines, constructed or reconstructed after December 2, 1994, must be in compliance with this rule immediately upon startup.

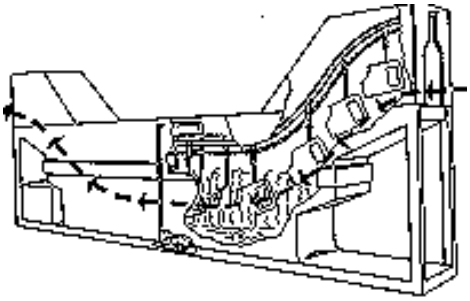

Figure 1. Example of an in-line vapor cleaning system

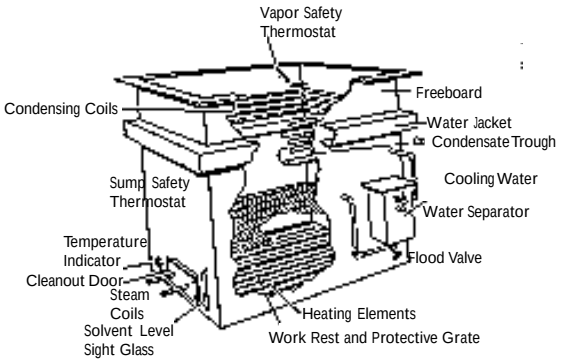

Figure 2. (a) Open top batch vapor cleaning machine

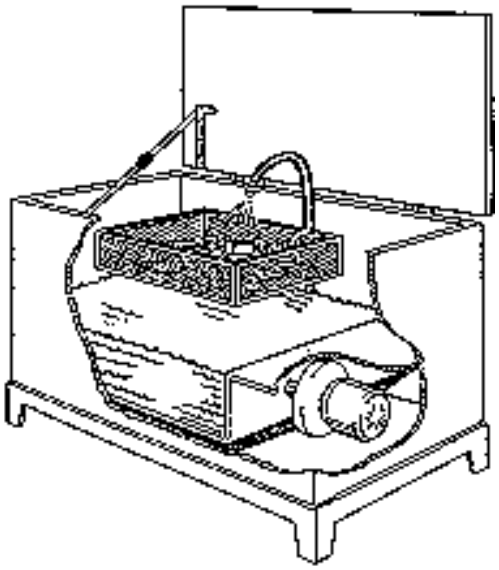

Figure 2. (b) Open top batch cold solvent cleaning machine

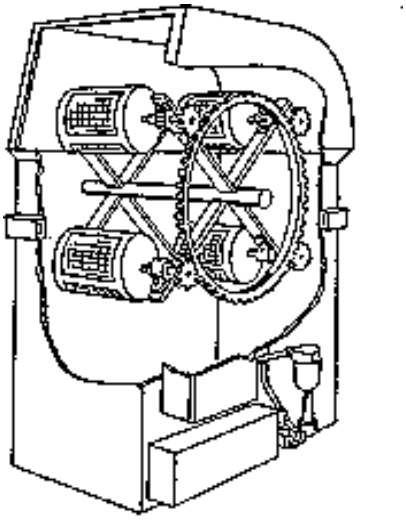

Figure 3. Ferris-wheel batch solvent cleaning machine

Table 1. Overview of Compliance Requirements

	Batch Cold Immersion	Batch Cold Remote Reservoir	Batch Vapor, In-Line Vapor, and In-Line Cold
Control combinations/ emission limits			X
Equipment standards	X	X	◆
Work practice standards	●	X	◆
Testing	X	X	X
Monitoring			◆
Recordkeeping			X
Reporting	X	X	X

● Work practice standards apply only if complying with equipment standards of having a freeboard ratio of at least 0.75.

◆ These requirements are not necessary if using an overall emission limit to comply.

X Required

OVERVIEW OF COMPLIANCE REQUIREMENTS

Compliance requirements depend on the type of machine: batch cold solvent cleaning machine (immersion or remote reservoir), batch vapor, in-line vapor, or in-line cold. Table 1 summarizes the compliance requirements for each type of solvent cleaning machine.

Batch Cold Solvent Cleaning Machines

There are different requirements for the immersion cold cleaning machine and the remote reservoir cold cleaning machine. An immersion cold cleaning machine is one in which the parts are immersed in the solvent. Remote reservoir cold cleaning machines pump liquid solvent to a sink-like work area that drains solvent back into an enclosed container while parts are being cleaned so that no solvent is allowed to pool in the work area. (Remote reservoir cold cleaning machines that are also immersion cold cleaning machines are considered to be immersion cold cleaning machines for this rule.)

Immersion cold solvent cleaning machines

Immersion cold solvent cleaning machines are subject to equipment standards, work practice standards, testing requirements (listed on page 7), and reporting requirements (listed on page 14). The equipment standards include a tight fitting cover that must always be closed except for entry and removal of parts and either a water layer at least 2.5 centimeters (1.0 inch) on the surface of the solvent within the machine OR a freeboard ratio of at least 0.75 [63.462(a)]. If a freeboard ratio of at least 0.75 exists, then the work practice standards listed on page 9 are required [63.462(c)].

Remote reservoir cold solvent cleaning machines

It is necessary for remote reservoir cold solvent cleaning machines to follow equipment standards, work practice standards (listed on page 9), testing requirements (listed on page 7), and reporting requirements (listed on page 14). The equipment standards require only a tight fitting cover over the solvent sump that is closed except when cleaning parts [63.462(b)].

Batch Vapor, In-line Vapor, and In-line Cold Solvent Cleaning Machines

Batch vapor, in-line vapor, and in-line cold solvent cleaning machines must employ control combination or emission limits, equipment standards (listed on page 8), work practice standards (listed on page 9), testing requirements (listed on page 7), monitoring requirements (listed on page 12), recordkeeping requirements (listed on page 13), and reporting requirements (listed on page 14). For the control combination or emission limits requirement, the following three options are available:

(1) install a control combination;

(2) meet an idling mode emission limit; or

(3) meet an overall emission limit.

If option 3 is used for compliance, the equipment standards, work practice standards, and monitoring requirements DO NOT need to be followed. However, solvent additions and deletions for each machine must be logged. The control combinations, idling mode emission limits, and overall emission limits are included in the next section.

CONTROL COMBINATIONS AND EMISSION LIMITS

Batch vapor, in-line vapor, and in-line cold solvent cleaning machines can comply either by employing a control combination, meeting an idling mode emission limit, or meeting an overall emission limit. Which control combinations are available depends on how large the batch vapor machine is or whether the in-line machine (vapor or cold) is existing or new. An existing machine is one that was constructed or reconstructed on or before November 29, 1993, and a new machine is one that was constructed or reconstructed after November 29, 1993.

Table 2 lists which control combination options are available for each machine.

An idling mode emission limit is measured while the machine is turned on but not actively cleaning parts. Machines using idling emission limits to comply must conduct an initial performance test that demonstrates compliance with the applicable idling emission limit and establishes parameters that will be monitored to demonstrate compliance [63.463(f)(1)]. The parameters used to demonstrate compliance must be monitored, and the machine must be operated within these parameters. The provisions of 63.463(f)(4) must be used to determine if an exceedance has occurred. All exceedances, corrections, and adjustments must be reported (see page 14 for reporting requirements).

Overall emission limits are based on the type and size of cleaning machine. Machines using overall emission limits to comply must maintain a log of solvent additions and deletions for each machine. Every month this log must be used to determine solvent emissions. Equipment standards, work practice standards, and monitoring requirements are not applicable for the overall emission limit option.

Idling mode emission limits and overall emission limits depend on whether the machine is batch vapor (new or existing), existing in-line (vapor or cold), or new in-line (vapor or cold). Again, existing means the machine was constructed or reconstructed on or before November 29, 1993, and new means the machine was constructed or reconstructed after November 29, 1993. Table 3 lists the idling mode emission limits and overall emission limits for each machine. The overall emission limit values in Table 3 only apply to cleaning

Table 2. Control Combination Options

	Freeboard Ratio = 1.0	Freeboard Refrig. Device	Working Mode Cover	Dwell	Superheated Vapor	Reduced Room Draft	Carbon Adsorber
New and existing batch vapor with solvent/air interface area 1.21 square meters (13 sq. ft.) or less [63.463(b)(1)(i)]							
Option 1	●		●		●		
Option 2		●			●		
Option 3		●	●				
Option 4	●				●	●	
Option 5		●				●	
Option 6	●	●					
Option 7		●		●			
Option 8	●			●		●	
Option 9		●					●
Option 10	●				●		●
New and existing batch vapor with solvent/air interface area greater than 1.21 square meters (13 sq. ft.) or less [63.463(b)(2)(i)]							
Option 1	●	●			●		
Option 2		●		●		●	
Option 3		●	●		●		
Option 4	●				●	●	
Option 5		●			●	●	
Option 6	●	●				●	
Option 7		●			●		●
Existing in-line vapor and in-line cold [63.463(c)(1)(i)]							
Option 1	●				●		
Option 2	●	●					
Option 3		●		●			
Option 4				●			●
New in-line vapor and in-line cold [63.463(c)(2)(i)]							
Option 1		●			●		
Option 2		●					●
Option 3					●		●

cleaning machines with a solvent/air interface. If a machine does not have a solvent/air interface, the owner can use the cleaning capacity value in the following equation to determine the appropriate overall emission limit:

Emission limit (kg/month) =
330 * [Cleaning capacity (m^3)]$^{0.6}$

Emission limit (lb/month) =
727.6 * [Cleaning capacity (ft^3)]$^{0.6}$

For example: if your machine has a 2.0 cubic meter cleaning capacity, you would carry out the following calculation:

$(2.00)^{0.6} * 330 = 1.52 * 330 = 500$ kg/month

TESTING REQUIREMENTS

Every halogenated solvent cleaning machine is subject to testing requirements. Table 4 summarizes the requirements for each machine. However, the final rule should be referred to for the specific methods to be used.

Table 3. Idling and Overall Emission Limits

Type of Machine	Idling Limits	Overall Emission Limits for machines with solvent/air interface *(3-month rolling average)*
New and existing batch vapor	0.22 kilograms per hour per square meter of solvent/air interface (0.045 lb/hr/sq ft) [63.463(b)(1)(ii)], [63.463(b)(2)(ii)]	150 kilograms per month per square meter of solvent/air interface (30.6 lb/month/sq ft) [63.464(a)(1)(ii)]
Existing in-line vapor and in-line cold	0.10 kilograms per hour per square meter of solvent/air interface (0.021 lb/hr/sq ft) [63.463(c)(1)(ii)]	153 kilograms per month per square meter of solvent/air interface (31.3 lb/month/sq ft) [63.464(a)(1)(ii)]
New in-line vapor and in-line cold	0.10 kilograms per hour per square meter of solvent/air interface (0.021 lb/hr/sq ft) [63.463(c)(2)(ii)]	99 kilograms per month per square meter of solvent/air interface (20.2 lb/month/sq ft) [63.464(a)(1)(ii)]

Table 4. Testing Requirements

Type of Machine	Requirements
Batch vapor, in-line vapor, and in-line cold machines using idling emission limits to comply	Determine the **idling emission rate** [63.465(a)].
Batch vapor, in-line vapor, and in-line cold machines using overall emission limits to comply	Ensure on the first operating day of every month that the system contains only **clean liquid solvent**. A fill line must be indicated during the first month the measurements are made. Immediately prior to calculating monthly emissions the solvent level must be returned to the fill-line [63.465(b)].
	On the first operating day of every month determine solvent emissions using the records of all solvent additions and deletions for the previous monthly reporting period [63.465(c)(1)].
	On the first operating day of every month determine the total amount of halogenated HAP solvent removed in solid waste [63.465(c)(2)].
	On the first operating day of every month determine the monthly rolling average for the 3 month period ending with the most recent reporting period [63.465(c)(3)].
Batch vapor, in-line vapor, and in-line cold machines using a **dwell**	Determine the appropriate **dwell time** for each part or parts basket [63.465(d)].
All machines	Determine the potential to emit from all solvent cleaning operations [63.465(e)].

EQUIPMENT STANDARDS

Batch Cold Solvent Cleaning Machines

Immersion cold solvent cleaning machines

1. *Tight fitting cover that must always be closed except for entry and removal of parts [63.462(a)].*
2. ***Water layer** at least 2.5 centimeters (1.0 inch) on the surface of the solvent within the machine OR a **freeboard ratio** of at least 0.75 [63.462(a)].*

Remote-reservoir cold solvent cleaning machines

1. *Tight fitting cover over the solvent **sump** that must always be closed except when cleaning parts [63.462(b)].*

Batch Vapor, In-line Vapor, and In-line Cold Solvent Cleaning Machines

1. *Idling and downtime cover that may be readily opened or closed, that completely covers the machine openings when in place, and is free of cracks, holes and other defects OR a **reduced room draft** [63.463(a)(1)].*
2. ***Freeboard ratio** of at least 0.75 [63.463(a)(2)].*
3. ***Automated parts handling system** capable of moving parts or parts baskets at 3.4 meters per minute (11 ft/min) or less from the initial loading of parts through removal of cleaned parts [63.463(a)(3)].*
4. *Device to shut off the sump heat if the sump liquid solvent level drops to the sump heater coils [63.463(a)(4)].*
5. *Vapor level device that shuts off sump heat if the vapor level rises above the height of the primary condenser [63.463(a)(5)].*
6. *Primary condenser [63.463(a)(6)].*
7. *If **lip exhaust** is used, route all collected solvent vapors through a **carbon adsorber** [63.463(a)(7)].*

WORK PRACTICE STANDARDS

Batch Cold Solvent Cleaning Machines

1. *Collect all waste solvent and store it in a closed container [63.462(c)(1)].*
2. *Only perform flushing within the **freeboard area** [63.462(c)(2)].*
3. *Drain cleaned parts for 15 seconds or until dripping has stopped, whichever is longer, and tip or rotate parts with cavities or blind holes while draining [63.462(c)(3)].*
4. *Ensure the solvent level does not exceed the fill line [63.462(c)(4)].*
5. *Immediately wipe up solvent spills and store wipe rags in a covered container [63.462(c)(5)].*
6. *Ensure that the agitator does not cause the solvent to splash against the walls or the parts, a rolling motion is allowed [63.462(c)(6)].*
7. *Ensure that the machine is not exposed to drafts greater than 40 meters per minute (132 feet per minute) [63.462(c)(7)].*
8. *Do not clean sponges, fabric, wood, and paper products using these machines [63.462(c)(8)].*

Batch Vapor, In-line Vapor, and In-line Cold Solvent Cleaning Machines

1. *Control air disturbances across machine openings (e.g., have cover(s) in place during **idling mode** and **downtime mode** or reduce the room draft) [63.463(d)(1)].*
2. *In an open-top batch machine, the parts or parts baskets cannot occupy more than 50 percent of the **solvent/air interface** unless they are introduced at a speed of 0.9 meters per minute (3 feet per minute) or less [63.463(d)(2)].*
3. *Perform all spraying operations within the vapor zone or within a section of the machine that is not directly exposed to the ambient air [63.463(d)(3)].*
4. *Orient parts so the solvent drains from them freely [63.463(d)(4)].*
5. *Do not remove parts or parts baskets until the dripping has stopped [63.463(d)(5)].*
6. *During startup, turn on the primary condenser before the sump heater [63.463(d)(6)].*
7. *During shutdown, turn off the sump heater and allow the solvent vapor layer to collapse before turning off the primary condenser [63.463(d)(7)].*
8. *When adding or draining solvent, use threaded or other leakproof couplings and ensure that the end of the pipe in the solvent sump is located beneath the liquid solvent surface [63.463(d)(8)].*
9. *Maintain machine and associated controls as recommended by the manufacturer [63.463(d)(9)].*
10. *Operators must complete and pass applicable sections of the Test of Solvent Cleaning Procedures included in Appendix B of Part 63, Subpart T, if requested [63.463(d)(10)].*
11. *Collect and store waste solvent, still bottoms, and sump bottoms in closed containers [63.463(d)(11)].*
12. *Do not clean sponges, fabric, wood, and paper products using these machines [63.463(d)(12)].*

MONITORING REQUIREMENTS

Monitoring is required for all batch vapor, in-line vapor, and in-line cold solvent cleaning machines using control combinations or idling mode emission limits to comply. Along with monitoring, it must be determined if each control device meets the specified requirements. Table 5 includes the control devices that have to be monitored with their monitoring frequencies and specified requirements. If the specified requirements are not met, an exceedance may have occurred. An exceedance has occurred if any of the non-italicized requirements in Table 5 have not been met or if any of the italicized requirements have not been met and are not corrected within 15 days of detection [63.463(e)(3)]. All exceedances, corrections, and adjustments must be reported [63.463(e)(4)] (see page 14 for reporting requirements). For machines using an idling mode emission limit to comply, if a control device is used that is not listed in Table 5, then the owner must establish the monitoring frequency and submit it in the initial test report [63.463(f)(2)].

RECORDKEEPING REQUIREMENTS

Certain records must be kept for all batch vapor, in-line vapor, and in-line cold solvent cleaning machines. Recordkeeping requirements vary depending on the compliance of a machine. For example, machines using control combinations or idling mode emission limits for compliance have to keep different records than machines using overall emission limits. Table 6 describes the necessary recordkeeping requirements and the time period for which the records must be kept on file. Records can be maintained in either written or electronic form.

REPORTING REQUIREMENTS

Every halogenated solvent cleaning machine is subject to reporting requirements. Table 7 lists the reports required for each machine type and when the reports need to be submitted. The submittal dates depend on when each machine was installed. For details on information to be included in each report, refer to the regulation using the CFR citations listed in Table 7. It is recommended that a facility with solvent cleaning operations use reporting forms developed by MDEQ (see the "Where To Go For Additional Help" section of this Fact Sheet, page 15). Reports should be submitted to the appropriate Air Quality Division district office.

EQUIVALENT CONTROL SYSTEMS

Any person may request EPA to consider the use of alternative equipment and/or procedures that can provide the same amount of control that is required by the NESHAP final rule [63.469].

HOW DOES THE NESHAP FINAL RULE RELATE TO OTHER RULES?

Many halogenated solvent cleaning facilities may already meet some of the requirements for this NESHAP final rule because of state rules that have been in effect for over 10 years.

Rules 611 - 614 and Rules 707 - 710 of the Michigan Administrative Rules for Air Pollution Control apply to existing and new cold cleaners, existing and new open top vapor degreasers, existing and new conveyorized cold cleaners, and existing and new conveyorized vapor degreasers. Halogenated solvent cleaning facilities must operate in compliance with both the NESHAP final rule and the applicable state rules.

ARE AIR PERMITS REQUIRED?

There are two differing yet related air permit programs of which owners of halogenated solvent cleaning facilities should be aware: the New Source Review Permit Program and the Renewable Operating Permit Program. Both programs are administered by the Air Quality Division of the Michigan Department of Environmental Quality (MDEQ). The Air Quality Management Division of the Wayne County Department of Environment administers the permit programs for sources located in Wayne County.

New Source Review Permit Program

Rule 201 of the Michigan Administrative Rules for Air Pollution Control requires a person to obtain an air use permit prior to installation, relocation, or modification of a process that may emit air contaminants. Rule 281(h), however, exempts cold cleaners that have an air/vapor interface (solvent/air interface) of 10 square feet or less from the requirements of Rule 201. Pursuant to Rule 285(o)(iv), degreasers and cold cleaners whose emissions are only released into the general in-plant environment are also exempt from Rule 201. Owners of halogenated solvent cleaning facilities that need a permit or have permitting questions should contact the MDEQ Air Quality Division.

Renewable Operating Permit Program

All "major sources" must apply for a Renewable Operating Permit. A major source is a facility whose potential emissions of air contaminants from all processes and equipment exceed one or more emission threshold levels. Table 8 lists the major source emission thresholds.

A facility that is not a major source is referred to as an area source. Its potential to emit is less than the major source thresholds.

An owner or operator of any batch cold solvent cleaning machine that is not itself a major source and that is not located at a major source is exempt from the Renewable Operating Permit Program.

Owners or operators of all other solvent cleaning machines subject to this NESHAP final rule will be subject to the Renewable Operating Permit Program. However, when it becomes subject depends on whether the facility is a major source or an area source. If the solvent cleaning machine by itself is major or if it is located at a major source, a Renewable Operating Permit must be applied for in accordance with the schedule found in Michigan Rule 210. A decision on whether all other area sources subject to the NESHAP will be required to submit a Renewable Operating Permit application will be made within 4 to 5 years.

Table 5. Monitoring frequencies and specified requirements for control devices

Control device	Monitoring frequency	Specified requirements
Freeboard refrigeration device	Weekly: temperature at center of air blanket during idling mode [63.466(a)(1)]	*Chilled air blanket temperature (measured at the center of the air blanket) can be no greater than 30% of the solvent's boiling point* [63.463(e)(2)(i)].
Superheated vapor system	Weekly: temperature at center of superheated solvent vapor zone during **idling mode** [63.466(a)(2)]	*Temperature at the center of the superheated vapor zone must be at least 10°F above the solvent's boiling point* [63.463(e)(2)(vi)(A)].
		Determine the minimum proper **dwell time** within the superheated vapor zone using manufacturer's specifications [63.463(e)(2)(vi)(B)].
		Parts must remain within the superheated vapor for at least the minimum proper **dwell time** [63.463(e)(2)(vi)(C)].
Cover	Monthly: visual inspection [63.466(b)(1)]	**Working-mode cover**: must open only for part entry and removal, must completely cover the openings when closed, and *must be maintained free of cracks, holes, and other defects* [63.463(e)(2)(iii)].
		Idling-mode cover: must be in place whenever parts are not in machine, must completely cover the openings when closed, and *must be maintained free of cracks, holes, and other defects* [63.463(e)(2)(iv)].
Dwell	Monthly: dwell time [63.466(b)(2)]	Determine the appropriate **dwell time** for each type of part or determine the maximum **dwell** time using the most complex part type [63.463(e)(2)(v)(A)].
		Each part must be held in the **freeboard area** above the vapor zone for the **dwell time** determined for that part or for the maximum dwell time determined using the most complex part type [63.463(e)(2)(v)(B)].
Hoist	Monthly/Quarterly: hoist speed [63.466(c)]	N/A
Reduced room draft	Initial: windspeed, room parameters, enclosure [63.466(d)]	*The flow or movement of air across the top of the **freeboard area** or within the enclosure cannot exceed 15.2 meters per minute (50 ft/min) at any time* [63.463(e)(2)(ii)(A)].
	Weekly: room parameters [63.466(d)(1)]	
	Monthly: windspeed within enclosure, visual inspection of enclosure [63.466(d)(2)]	Establish and maintain the operating conditions under which the wind speed was shown to be 15.2 meters per minute (50 ft/min) or less [63.463(e)(2)(ii)(B)].
	Quarterly: windspeed [63.466(d)(1)]	
Carbon adsorbers	Weekly: solvent concentration in exhaust [63.466(e)]	The concentration of organic solvent in the exhaust cannot exceed 100 ppm of any halogenated HAP compound. If 100 ppm is exceeded, adjust the desorption schedule or replace the disposable canister [63.463(e)(2)(vii)(A)].
		The **carbon adsorber** bed cannot be bypassed during desorption [63.463(e)(2)(vii)(B)].
		The **lip exhaust** must be located above the solvent cleaning machine cover so that the cover closes below the lip exhaust level [63.463(e)(2)(vii)(C)].

Table 6. Recordkeeping Requirements

Type of Machine	Lifetime of Machine	5 years
Batch vapor, in-line vapor, and in-line cold machines using control combinations or idling mode emission limits to comply	Owner's manuals or written maintenance and operating procedures [63.467(a)(1)]	Results of control device monitoring [63.467(b)(1)]
	Date of installation of machine and all control devices [63.467(a)(2)]	Information about actions taken to monitor each control device, to ensure each control device meets the specified requirements, and to conduct the initial performance test and periodic monitoring for idling emission limit standards [63.467(b)(2)]
	Records of tests required to determine an appropriate **dwell time** for each part and parts basket [63.467(a)(3)]	
	Records of initial performance test for idling emission limit standards [63.467(a)(4)]	Estimated annual solvent consumption for each machine [63.467(b)(3)]
	Records of halogenated HAP solvent content for each solvent used [63.467(a)(5)]	Records of the date and results of solvent concentration in **carbon adsorber** exhaust [63.467(b)(4)]
Batch vapor, in-line vapor, and in-line cold using overall emission limits to comply	N/A	Dates and amounts of solvent added to each machine [63.467(c)(1)]
	N/A	Solvent composition of wastes removed [63.467(c)(2)]
	N/A	Calculation sheets showing how monthly emissions and the rolling 3-month average emissions were determined, and results of all calculations [63.467(c)(3)]
Machines without **solvent/air interface** using overall emission limits to comply	Method used to determine the **cleaning capacity** [63.467(d)]	N/A

For assistance in determining your facility's applicability with the Renewable Operating Permit Program, contact the persons listed in the "Where To Go For Additional Help" section of this fact sheet, page 15.

AIR QUALITY FEES

Recent changes in state law give the Air Quality Division of the Michigan Department of Environmental Quality the authority to collect an annual air quality fee. Facilities subject to the fee include those that are major sources and, therefore, subject to the Renewable Operating Permit Program, and/or those facilities subject to a NESHAP final rule.

Under the fee program, facilities that are subject to a NESHAP final rule but are not major sources are required to pay a $200 annual air quality fee. Facilities that are major sources are required to pay a facility charge of $2,500 or $1,000 (depending if they are a Category I or Category II facility, respectively) plus an emission charge of $25 per ton of air contaminants emitted. A Category II facility is a major source that exceeds the HAP emission thresholds, and a Category I facility is a major source that exceeds any of the other regulated air contaminant emission thresholds.

Table 7. Reporting Requirements

Type of Machine	Type of Report	Existing (before 11/29/93)	New (11/29/93 to 12/2/94)	New (after 12/2/94)
All machines	Initial notification report [63.468(a)], [63.468(b)]	August 29, 1995	No later than January 31, 1995	As soon as practical before construction
Batch cold	Compliance report [63.468(c)]	May 1, 1998	May 1, 1995	150 days after startup
Batch vapor, in-line vapor, in-line cold using control combinations or idling mode emission limits to comply	Initial Statement of Compliance [63.468(d)]	May 1, 1998	May 1, 1995	150 days after startup
	Annual Report [63.468(f)]	Feb 1 of year following that for which the report is being made	Feb 1 of year following that for which the report is being made	Feb 1 of year following that for which the report is being made
	Exceedance Report [63.468(h)]	semiannually if no exceedances, quarterly if exceedances	semiannually if no exceedances, quarterly if exceedances	semiannually if no exceedances, quarterly if exceedances
Batch vapor, in-line vapor, and in-line cold using overall emission limits to comply	Initial statement of compliance [63.468(e)]	May 1, 1998	May 1, 1995	150 days after startup
	Solvent emission report [63.468(g)]	annually	annually	annually
	Exceedance report [63.468(h)]	semiannually if no exceedances, quarterly if exceedances	semiannually if no exceedances, quarterly if exceedances	semiannually if no exceedances, quarterly if exceedances
Machines requesting equivalency determination	Equivalency request report [63.468(k)]	June 3, 1996	prior to startup	prior to startup

Table 8. Major Source Thresholds

Type of Air Contaminant	Potential To Emit (PTE) (tons/year)
One hazardous air pollutant (HAP)	10
Combination of one or more HAPs	25
Any other regulated air contaminant	100

How does the air quality fee program affect facilities subject to the NESHAP for Halogenated Solvent Cleaning Operations? Currently, all facilities that are subject to this NESHAP but are not major sources will be required to pay the $200 annual fee beginning January 1996. Facilities subject to the NESHAP final rule and are major sources will be paying the facility and emission charges.

WHY SHOULD HALOGENATED SOLVENT CLEANING FACILITIES COMPLY?

Compliance with the NESHAP final rule will reduce the public's and worker's exposure to hazardous air pollutants, provide savings in reduced solvent purchases, and will keep facilities with halogenated solvent cleaners operating within the law. The CAAA include some strong enforcement provisions with both civil and criminal sanctions for businesses that are in violation of the law.

WHERE TO GO FOR ADDITIONAL HELP

Copies of the Federal Register notice (including the Test of Solvent Cleaning Procedures), the Michigan Administrative Rules for Air Pollution Control, Recordkeeping Forms, and Reporting Forms can be obtained from the Clean Air Assistance Program. If you have any questions regarding this regulation, contact any of the following:

REBECCA SMALLDON
CLEAN AIR ASSISTANCE PROGRAM
ENVIRONMENTAL ASSISTANCE DIVISION
MICHIGAN DEPARTMENT OF ENVIRONEMTAL QUALITY
PO BOX 30457
LANSING MI 48909
(517) 335-2397

CHRIS KELLY
AIR QUALITY DIVISION
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
PO BOX 355
PLAINWELL MI 49080
(616) 685-9886

FRANCIS LIM
AIR QUALITY DIVISION
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
38980 SEVEN MILE ROAD
LIVONIA MI 48152
(313) 953-1421

For alternatives to halogenated solvent cleaners, call MDEQ's Environmental Assistance Center at 1-800-662-9278 and ask for the Aqueous and Semi-Aqueous Cleaners Fact Sheet.

DEFINITIONS

Air blanket: The layer of air inside the solvent cleaning machine freeboard located above the solvent/air interface. The centerline of the air blanket is equidistant between the sides of the machine.

Automated parts handling system: A mechanical device that carries all parts and parts baskets at a controlled speed from the initial loading of soiled or wet parts through the removal of the cleaned or dried parts, includes hoists and conveyors.

Batch cleaning machine: Solvent cleaning machine in which individual parts or a set of parts move through the entire cleaning cycle before new parts are introduced into the machine, includes open-top vapor machines and ferris wheel cleaners (cleans multiple batch loads simultaneously and is manually loaded).

Carbon adsorber: Bed of activated carbon into which an air/solvent gas vapor stream is routed and which adsorbs the solvent on the carbon.

Cleaning capacity: For a cleaning machine without a solvent/air interface, the maximum volume of parts that can be cleaned at one time (usually the volume of the cleaning chamber).

Clean liquid solvent: Fresh unused solvent, recycled solvent, or used solvent that has been cleaned of soils.

Cold cleaning machine: Uses liquid (non-boiling) solvent to clean or dry parts.

Downtime mode: Time period when machine is not cleaning parts and the sump heating coils are off.

Dwell: Technique of holding parts within the freeboard area but above the vapor zone, occurs after cleaning to allow solvent to drain back into machine.

Dwell time: Required minimum length of time a part must dwell.

Existing Machine: Construction or reconstruction was commenced on or before November 29, 1993.

Freeboard area: For a batch cleaning machine, the area extending from the solvent/air interface to the bottom of the entrance or exit opening, whichever is lower.

Freeboard height: For a batch cleaning machine, the distance from the solvent/air interface measured during idling mode to the top of the machine; for an in-line machine, the distance from the solvent/air interface to the bottom of the entrance or exit opening, whichever is lower, measured during the idling mode.

Freeboard ratio: Ratio of the freeboard height to the smaller interior dimension (length, width, or diameter) of the machine.

Freeboard refrigeration device (Chiller): Set of secondary coils mounted in the freeboard area that carries a refrigerant or other chilled substance to provide a chilled air blanket above the solvent vapor.

Idling emission rate: Halogenated solvent emissions from solvent vapor cleaners in the idling mode.

Idling mode: Time period when machine is not actively cleaning parts and the sump heating coils are on.

Idling-mode cover: Any cover or design that allows the cover to shield the machine openings during the idling mode, may double as a working-mode cover.

Immersion cold cleaning machine: Cold cleaner in which the parts are immersed in the solvent, includes remote reservoir cold cleaning machines that are also immersion cold cleaning machines.

In-line (conveyorized) cleaning machine: Machine that uses an automated parts handling system to automatically provide a continuous supply of parts to be cleaned, fully enclosed except for the conveyor inlet and exit portals.

Lip exhaust: Device installed at the top of the opening of the machine that draws in air and solvent vapor from the freeboard area and ducts the air and vapor away from the solvent cleaning area.

New machine: Machine constructed or reconstructed after November 29, 1993.

Open-top cleaning machine: Batch machine with its upper surface open to the air.

Reconstructed: Machine in which components were replaced to an extent that the fixed capital cost of the new components exceeded 50% of the fixed capital cost that would be required to construct a comparable new source and it is technologically and economically feasible for the machine to meet the requirements of the final rule.

Reduced room draft: Decreasing the flow or movement of air across the top of the freeboard area, methods include redirecting fans and/or air vents to not blow across the machine, moving the machine to a corner where there is less room draft, and constructing a partial or complete enclosure around the machine.

Remote reservoir cold cleaning machine: Any device in which liquid solvent is pumped to a sink-like work area that drains solvent back into an enclosed container while parts are being cleaned, allowing no solvent to pool in the work area.

Solvent/air interface: For a vapor cleaning machine, the location of contact between the concentrated solvent vapor layer and the air, location of contact defined as the mid-line height of the primary condenser coils; for a cold cleaning machine, the location of contact between the liquid solvent and the air.

Sump: Part of the machine where the liquid solvent is located.

Superheated vapor system: System that heats the solvent vapor to a temperature above the solvent's boiling point. Parts are held in the superheated vapor before exiting the machine to evaporate the liquid solvent on them.

Three month rolling average: The 3-month rolling average monthly emission limit is the sum of the emission limit for the three months immediately prior to the current month divided by three.

Vapor cleaning machine: Batch or in-line machine that boils liquid solvent generating solvent vapor that is used as a part of the cleaning or drying cycle.

Water layer: Layer of water that floats above the denser solvent and provides control of solvent emissions.

Working-mode cover: Any cover or design that shields the machine openings from outside air disturbances while parts are being cleaned, only opened during parts entry and removal, can double as idling-mode cover.