

MI DEQ & RETAP Pollution Prevention (P2) Training

P2 for Dry Cleaners

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P2 Regulatory Requirements for Dry Cleaners under CAA

- Perchloroethylene “perc” is designated as a hazardous air pollutant (HAP)**
- National Emissions Standards for HAPs (NESHAPs) require limits on perc emissions**
 - Rule known as “National Perchloroethylene Air Emissions Standards for Dry Cleaning Facilities”**
 - Requires P2 measures**
- NESHAP requirements depend on**
 - Source category: Small, Large, Major**
 - Type of cleaning machine: Dry-to-Dry or Transfer Machine**
 - Installation date of machine**

NESHAP P2 Requirements

- ❑ **Operate/maintain equipment according to manufacturer's specs**
- ❑ **Implement good housekeeping practices (i.e. drain filters for 24 hours before disposal, store Perc waste in non-leaking containers, etc.)**
- ❑ **Properly manage & dispose of wastes**



NESHAP P2 Requirements

- Implement a leak detection and repair (LDAR) program (cont'd)**
 - Inspect all system components for leaks**
 - ✓ **Major/Large sources – weekly inspections**
 - ✓ **Small sources – biweekly inspections**
 - Repair leaks within 24 hrs, if possible**
 - Order repair parts within 48 hrs**
 - Repair leaks within 5 days of receiving the ordered parts**
 - Document everything – keep receipts**

Maintenance/Preventive Maintenance



Preventive reduces:

- Breakdowns
- Inefficiency
- Leakage (Up to 25% of emissions)
- Spills
- Down-time
- Wastes

Corrective maintenance:

- Begin repair within 24 hrs. (Document It!)
- Resetting control valves
- Proper process temps
- Calibrate pollution control devices

P2 Means

- ❑ Equipment replacement or modifications;**
- ❑ Process or procedure modifications;**
- ❑ Feedstock substitutions;**
- ❑ Recycling within industrial processes;**
- ❑ Improve management practices:
housekeeping, maintenance, training &
inventory control;**
- ❑ Product reformulation.**

Equipment Modification/Replacement



- ❑ Dry-to-Dry Machine (Required when Transfer Machine needs replacement.)
- ❑ Replace top-loading washers with front-loading washers
- ❑ Retrofitting a vented system to a no-vent system

Reduces Air Emissions & Perc Consumption!

Recycling within Process

- ❑ Closed-looped distillation of perc
- ❑ Capturing perc emissions with carbon adsorption & refrigerated condensers
- ❑ Perc recovery from draining cartridge filters



Improve Management Practices (Better Operational Controls)

- Environmentally Preferable Purchasing (EPP)**
 - Raw materials review & purchasing program (SW)**
- Avoid underloading or overloading of machines**
- Place saturated lint from lint baskets in sealed waste containers**
- Clean lint screens as necessary to avoid clogging fans & condensers**
- Check the air relief valves for proper enclosure**
- Inspect waste storage containers for leaks**

Solid Waste



- Supplier Packaging
- Clothes hangers
- Plastic garment bags



Resource Conservation

- Latest technologies:
 - May require less energy, water & chemicals
 - May reduce cycle times
- Monitor electric, gas & water to determine:
 - What activities consume them?
 - What measures might reduce usage?
 - Can usage be curtailed in non-processing hrs.?
- Is there a heat reclamation system?
 - Where is heat used & where is it located?
 - Can the efficiency be improved?

Employee “Involvement”

- ❑ P2 responsibility for all employees
- ❑ Training & awareness programs
- ❑ Reward program for P2 suggestions & accomplishments



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The Next Steps:

Assess P2 Opportunities

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