

# AIR MANAGEMENT PROGRAM FACT SHEET



## Printing, Coating, and Dyeing of Fabrics and Other Textiles

April 2023

### What facilities are affected by this rule?

If a facility that prints, coats or dyes fabrics and other textiles is a major source of hazardous air pollutants (HAPs), the facility may be an affected source under the Printing, Coating, and Dyeing of Fabrics and Other Textiles National Emission Standards for Hazardous Air Pollutants (NESHAP) [40 CFR part 63 subpart OOOO](#). A facility with the potential to emit hazardous air pollutants (HAPs) in quantities greater than 10 tons per year of any single HAP, or 25 tons per year of all HAPs combined is defined as a major source of HAPs.

The [MTE and PTE Calculation Examples \(SB-113\)](#) fact sheet and an example [MTE calculation spreadsheet \(SB-300\)](#) from the Small Business Environmental Assistance Program (SBEAP) may help determine whether the facility is a major source of HAPs.

### How is a facility affected?

The U.S Environmental Protection Agency (EPA) divided the rule into three subcategories reflecting the limits and conditions that apply to fabric and other textile operations. In an amendment, the EPA clarified the rule to indicate that listed operations at synthetic fiber manufacturing facilities where the fibers are the final product of the facility is not an affected source under this rule.

The three emission limit subcategories are:

- 1) printing and coating
  - 2) slashing
  - 3) dyeing and finishing
- 1) **Printing and coating operations:** equipment used to apply cleaning materials to a web substrate to prepare it for printing/coating material application (surface preparation), to apply printing or coating material to a web substrate (printing/coating application) and to dry or cure the printing or coating material after application by exposure to heat or radiation (printing/coating drying or curing), or to clean printing/coating operation equipment (equipment cleaning). A web substrate is a continuous textile substrate flexible enough to be wound or unwound as rolls.

A single printing or coating operation may include any combination of these types of equipment, but always includes at least the point at which a printing, coating or cleaning material is applied and all subsequent points in the affected source where organic HAP emissions from that printing, coating or cleaning material occur. Affected sources may use multiple printing or coating operations.

Not included in the rule as printing and coating operations:

- Coating material application with handheld, non-refillable, aerosol containers, touch-up markers, or marking pens.

- Polyurethane foam carpet backing operations.

2) **Slashing:** the application of a chemical sizing solution to warp yarns prior to weaving to protect against snagging or abrasion that could occur during weaving.

**Slashing materials (also known as sizing):** the purchased compounds that are applied to warp yarns prior to weaving. Starch, gelatin, oil, wax, and manufactured polymers such as polyvinyl alcohol, polystyrene, polyacrylic acid and polyacetates are used as sizing compounds.

**Slashing operations:** the equipment used to mix and prepare slashing materials (sizing solution) for application and the slasher, which is the equipment used to apply and dry slashing materials (size) on warp yarn.

3) **(a) Dyeing operations:** the collection of equipment used to dye a textile substrate and includes equipment used for dye application, dye fixation, and textile substrate rinsing and drying. A single dyeing operation may include any combination of these types of equipment but always includes at least the point at which a dyeing material is applied and all subsequent points in the affected source where organic HAP emissions from that dyeing material occur. There may be multiple dyeing operations at an affected source.

**(b) Finishing operations:** the collection of equipment used to finish a textile substrate including chemical finish applicator(s), flashoff area(s), and drying or curing oven(s).

## What are the requirements?

Both one-time and continuous requirements must be met.

### Initial notification

The Initial Notification is a one-time report that must be submitted to the EPA to indicate that the rule applies. The deadline for existing sources to submit an initial notification has passed. New or reconstructed sources are required to submit an initial notification no later than 120 days after initial startup. If a deadline is missed, contact the assigned DNR Air Management Program compliance engineer to determine how to come into compliance.

### Emission limits and compliance options

The following is a summary of the compliance options.

### Emission limits

Table 1 shows the emission limits for the subcategories of fabric and textile operations affected by this rule.

| <b>Table 1. HAP Emission Limits for Subcategories</b>   |   |                         |
|---|---|-------------------------|
| <b>Subcategory</b>  | <b>Emission Limit (kg HAP/liter solids)</b> |                         |
|   | <b>New/Reconstructed</b>                    | <b>Existing Sources</b> |
| Coating and printing  | 0.08  | 0.12                    |
| Dyeing and finishing  | 0.016                                       | 0.016                   |
| • Dyeing only   | 0.016                                       | 0.016                   |
| • Finishing only  | 0.0003                                      | 0.0003                  |
| Slashing material   | 0.0 <sup>a</sup>                            | 0.0 <sup>a</sup>        |
| <p><sup>a</sup> Limit is in kg of organic HAP per kg of slashing material, as determined according to information from the supplier or manufacturer of the material. You may rely on information such as manufacturer's formulation data, if it represents each organic HAP that is present at 0.1% by mass or more for OSHA-defined carcinogens as specified in 29 CFR 1910.1200(d)(4)</p> |   |                         |

and at 1.0% by mass or more for other compounds. For example, if toluene (not an OSHA carcinogen) is 0.5% of the material by mass, you do not have to count it.

### Compliance options

A facility may comply with emission limits by doing any of the following:

- 1) **Compliant material option:** Each coating, printing, slashing, dyeing, or finishing material used must not exceed the HAP limit in Table 1, determined for the subcategory during the 1-month compliance period. Each thinner and cleaning material used must contain no organic HAP.
- 2) **Emission rate without add-on controls:** The organic HAP emission rate, calculated as a 12-month rolling average, for coating, printing, dyeing, finishing, thinners, and cleaning materials must not exceed the HAP limits in Table 1. This option cannot be used for slashing operations.
- 3) **Emission rate with add-on controls:** The organic HAP emission rate, calculated as a 12-month rolling average, for coating, printing, thinners, and cleaning materials (including emission capture and control efficiency) must not exceed the HAP limits in Table 1. This option cannot be used for slashing operations.
- 4) **Organic HAP overall control efficiency option:** HAP emissions must be reduced by an overall control efficiency of at least 98% for new or reconstructed sources and 97% for existing sources. This option cannot be used for slashing, dyeing, or finishing operations.
- 5) **Oxidizer outlet organic HAP concentration limit:** If an oxidizer is used to control organic HAP emissions, the oxidizer must be operated so that the outlet organic HAP concentration is no greater than 20 parts per million by volume on a dry basis, and the capture efficiency of the system is 100%. This option cannot be used for slashing, dyeing, or finishing operations.
- 6) **Equivalent emission rate option:** For the entire dyeing and finishing source, the fraction of applied organic HAP that is discharged to wastewater must be at least 90%. The wastewater must be discharged to a Publicly Owned Treatment Works (POTW) or to secondary wastewater treatment. The total organic HAP emissions must be less than 10 tpy. To use this option, the facility must also meet the requirements for Compliance Option No. 2 above.

### Compliance calculations

- For Compliance Option No. 1, the data collected on the regulated materials are used to calculate the organic HAP content of each material used each month.
- For Compliance Option Nos. 2 and 3, an organic HAP emission rate for the 12-month rolling average compliance period is calculated.
- For Compliance Option No. 4, an overall organic HAP control efficiency is calculated for the compliance period.
- Compliance Option No. 5 may be used if an oxidizer is used to control HAP emissions from a coating or printing operation.

The calculations described are too complex to include in a brief summary. Depending on which compliance option chosen, refer to the rule itself for complete information.

### Compliance testing

Compliance options No. 4 and 5 require emissions testing to demonstrate the efficiency of the capture and control device used. The initial performance test must be completed within 180 days of the compliance date. Unless already required in a Title V operating permit to conduct periodic performance tests, existing facilities must conduct a performance test by March 15, 2022, and every five years following the anniversary date of the previous test. An amendment to the rule in 2019 added the requirement for periodic performance testing. In addition, the amendment required that for all performance test reports where data was collected using test methods supported by the EPA's Electronic Reporting Tool (ERT) as listed on the [EPA's ERT website](#) at the time of the test, the facility must submit the results of the performance test to the EPA via the Compliance and

Emissions Data Reporting Interface (CEDRI). The CEDRI interface can be accessed through the EPA's [Central Data Exchange \(CDX\)](#).

Refer to the rule for details on the performance test requirements, establishing or reestablishing the operating parameters for the control devices, and submitting test reports.

## Initial compliance demonstration

The initial compliance deadline for existing sources has passed. New or reconstructed sources must comply on the date of initial startup. If any compliance deadline is missed, contact the facility-assigned DNR Air Management Program compliance engineer to determine how to come into compliance.

## Notification of compliance status

A notification of compliance status is due to EPA within 30 days of the initial compliance deadline in the rule. In addition, semiannual compliance reports are required. The semiannual compliance reports can be satisfied by other reporting required under the Clean Air Act, such as those required under a Title V operation permit. Once the reporting template has been available on the CEDRI website for one year, the facility shall submit the semiannual compliance report to the EPA via CEDRI. Refer to the rule for what must be included in these reports.

## For more information:

For more assistance and information on the Printing, Coating, and Dyeing of Fabrics and Other Textiles National Emission Standards for Hazardous Air Pollutants (NESHAP):

- Visit EPA's [Printing, Coating and Dyeing Fabrics NESHAP](#) webpage
- Review DNR's [FAQ: National Emission Standards for Hazardous Air Pollutants \(NESHAP\)](#) webpage
- Review the SBEAP webpage on [Painting and Coating](#) operations or contact the SBEAP at [DNRsmallbusiness@wi.gov](mailto:DNRsmallbusiness@wi.gov) or 855-889-3021

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