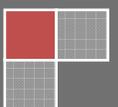


2011

Summary of the Paper and Other Web Coating MACT



Disclaimer

The Ohio EPA, Division of Air Pollution Control has developed this guidance in order to provide assistance to the regulated community concerning the applicability of U.S. EPA's paper and other web coating standards. Every effort has been made to ensure the accuracy and completeness of this guidance.

This guidance is intended for informational purposes. It cannot be relied upon to create any rights enforceable by any party in litigation with the United States or Ohio EPA. This guidance is not a final action, and it does not constitute rule making. U.S. EPA and/or Ohio EPA officials may decide to follow the guidance provided herein, or they may act at variance with the guidance, based on site-specific circumstances. The guidance may be reviewed and/or changed at any time without public notice. Before relying on the use of this guidance, parties should review the actual standards and verify that they are following the standards. If any conflict between the standards are followed and this guidance is found, it is recommended that the standards are followed and not this guidance.

Comments and Suggestions

Any comments and suggestions concerning this guidance should be sent to:

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Subpart JJJJ: National Emission Standards for Hazardous Air Pollutants Paper and Other Web Coating

This final rule applies to facilities that coat paper and other web substrates and are major sources of hazardous air pollutants (HAPs).

Subpart JJJJ for the paper and other web coating industry is the final MACT standard that establishes limits on organic HAP emissions from facilities that operate web-coating lines. All coating lines are considered to be one affected source.

A facility could have some lines subject to subpart KK (Printing and Publishing MACT) and others subject to subpart JJJJ. These facilities would be subject to both subparts. No one line should be subject to both subparts.

Subpart JJJJ:

- Requires the use of add on controls and/or low HAP coating
- Applies to all coating lines not covered by other MACTs
- Includes aqueous lines
- Regulates only organic HAPs
- Must include all HAP that are greater than 0.1% for carcinogens and 1.0% for non-carcinogens

Organic HAPs emitted from the paper and other web coating process include toluene, methanol, methyl ethyl ketone, xylenes, phenol, methylene chloride, ethylene glycol, glycol ethers, hexane, methyl isobutyl ketone, cresols, cresylic acid, dimethylformamide, vinyl acetate, formaldehyde, and ethyl benzene.

Important Dates:

Proposed: September 13, 2000

Promulgated: December 4, 2002

New affected source: This includes new lines(s) installed at new facilities and new lines at facilities with no prior paper and other web coating operation. A source is considered new if it is built after September 13, 2000.

The compliance date for new affected sources was December 4, 2002.

The compliance date for existing sources was December 5, 2005.

Initial notification forms were due December 5, 2004.

Applicability and Rule Overlap:

The paper and other web coating source category includes any facility engaged in the coating of paper, plastic film, metallic foil, and other web surfaces. According to §63.3300, the affected source is the collection of all web coating lines at a facility. Web is defined as a continuous substrate that is capable of being rolled at any point during the coating process.

Does not include:

- Web coating lines designated as stand-alone coating equipment under subpart KK
- A web coating line that is a product and packaging rotogravure or press which is subject to subpart KK
- Web coating lines that are subject to subpart EE
- Web coating lines that are subject to the metal coil coating MACT (subpart SSSS)
- Web coating lines that are subject to subpart OOOO

Process exclusions:

- lithography
- letter press
- screen printing
- narrow web flexographic printing
- research and development facilities

Predominant activity: For other web coating lines engaged in the coating of fabric and other webs on the same web coating line, a source needs to determine which MACT standard they must comply with based on the predominant surface coating activity conducted on the web coating line. Predominant activity has been determined to be 90 percent or more of the mass of substrate coated. For example, a web coating line that coats 90 percent paper and 10 percent fabric substrates would have to comply with the Paper and Other Web NESHAP (Subpart JJJJ).

Table 1. Comparison of rule applicability for related NESHAPs.

Subpart JJJJ	Subpart OOOO	Subpart KK
<p>The collection of <i>all web coating lines</i> located at a major source facility. Affected lines include lines engaged in the coating of fabric substrates for use in pressure sensitive tape and abrasive materials. This rule applies to web coating lines engaged in the coating of fabric for use in flexible packaging, pressure sensitive tapes and abrasive materials.</p>	<p>This rule applies to a fabric or other textile coating, printing, slashing, dyeing, or finishing operation or group of such operations that is a major source.</p> <p>This rule defines the affected source as the <i>collection of all equipment</i> associated with the web coating and printing, the slashing, or the dyeing and finishing performed on a textile substrate.</p> <p>This rule covers web coating and printing equipment used to apply cleaning materials to prepare substrate, apply coating/printing materials, dry or cure coating/printing materials after application, and web coating and printing equipment used to clean coating/printing equipment.</p> <p>This rule also applies to storage containers, mixing vessels and conveying equipment/containers for coating, printing, thinning, or cleaning materials. Also, storage containers and conveying equipment or containers for waste materials are applicable to this rule. Equipment/structures/devices used to convey/treat/dispose of wastewater streams or residuals are subject to this rule as well.</p>	<p>This rule applies to all new and existing rotogravure and wide-web flexographic facilities.</p> <p>The rule applicability includes all of the publication rotogravure presses and all affiliated equipment, including proof presses, cylinder and parts, cleaners, ink and solvent mixing and storage equipment, and solvent recovery equipment at a facility.</p> <p>Also, all of the product and packaging rotogravure or wide-web flexographic printing presses at a facility, plus any other equipment at that facility which the owner or operator chooses to include, except proof presses, and any product and packaging rotogravure or wide-web flexographic press which is used primarily for coating, laminating, or other operations which the owner or operator chooses to exclude.</p>

Facilities may comply with the emissions limits contained in subpart JJJJ by one of three ways.

1. Capture and control of HAP emissions using an add-on control device
2. Use of compliant coatings
3. A combination of add-on control and lower-HAP coatings

Emission Limits:

Facilities can choose to comply through one of three options. The HAP emission limits are based on emission capture and control technology that can reduce total organic HAP by 95% at existing sources and 98% at new sources.

Table 2. Compliance options for sources subject to subpart JJJJ.

Existing sources have 3 options	New sources have 3 options
Reduce emissions by 95%	Reduce emissions by 98%
Meet limit of 0.04 kg HAP/kg coating applied	Meet limit of 0.016 kg HAP/kg coating applied
Meet limit of 0.20 kg HAP/kg solids applied	Meet limit of 0.08 kg HAP/kg solids applied
<p>Alternative emission limit: If a facility can demonstrate 100% capture efficiency from coating and can demonstrate that less than 20 ppmv is emitted from the outlet of the oxidizer, this facility is in compliance with JJJJ.</p>	

Operating limits (§63.3321):*Category 1: Use add-on control device*

- Thermal oxidizer: The average combustion temperature in any 3 hour period must not fall below the combustion temperature limit established according to the operating limits established during the performance test
- Catalytic oxidizer: The average temperature of the inlet to the catalyst bed in any 3-hour period must not fall below the combustion temperature limit according to the operating limits established during a performance test. The temperature rise across the catalyst bed must not fall below the limit established according to operating limits established during a performance test.
- Emission capture system: Submit a monitoring plan to the Administrator that identifies operating parameters.

*Category 2: Use add-on control device not listed above or you wish to monitor an alternative parameter, alternative monitoring can be approved by the Administrator**Category 3: Use a solvent recovery system and conduct a liquid-liquid material balance***Figure 1. Operating limit options for compliance.****Options to meet MACT (§63.3370):**

Option 1 (§63.3370(b) or (c)(1) and (2)): No Control Device: demonstrate compliance for each individual coating

1. Identify each coating material used.
2. Collect data concerning the organic HAP content for each coating material
3. Calculate the HAP content for each coating either as-purchased or as-applied. There are two separate equations for as-purchased or as-applied HAP content.

Option 2 (§63.3370(c)(3) and (4)): No Control Device: demonstrate compliance by averaging across all coatings

1. Identify each coating material used and mass used
2. Collect data concerning the organic HAP content for each coating material
3. Calculate the monthly average content of all coatings

Option 3 (§63.3370(e) and (k)): One Capture and Control System-Oxidizer:

1. Demonstrate capture efficiency
2. Demonstrate control efficiency
3. Calculate overall control efficiency by multiplying steps 1 and 2 together.
4. Compliance is demonstrated through initial performance tests for capture efficiency and control device efficiency.

5. Compliance is maintained through continuous monitoring of capture system and control device operating parameters.

Option 4 (§63.3370(e) and (i)(1)): One Capture and Control System: Solvent Recovery System (liquid-liquid material balance):

1. Determine the total amount of volatile organic matter added to the system
2. Determine any volatile organic matter not emitted to the atmosphere
3. Determine total volatile organic matter recovered by the system
4. Calculate the overall control efficiency (collection and recovery)
5. Use the information listed above to determine a monthly liquid-liquid material balance. The information required to determine liquid-liquid material balance compliance may differ depending on which equation is used to calculate efficiency.

Option 5 (§63.3370(e) and (i)(2)): One Capture and Control System: Solvent Recovery System (CEMs)

1. Demonstrate capture efficiency
2. Using CEMs at inlet and outlet, document monthly control efficiency
3. Calculate overall control efficiency by multiplying 1 and 2 together.
4. Compliance is demonstrated through initial performance tests for capture efficiency and control device efficiency. Compliance is maintained through continuous monitoring of capture system and control device operating parameters.

Option 6 (§63.3370(f), (g) or (h)): If minimum efficiency is not attained by Options 1-5 refer to these specific sections in the rule.

Option 7 (§63.3370(n)(1)): Multiple Capture and Control Systems with one type of control device: Solvent Recovery (liquid-liquid balance):

1. Determine the total amount of volatile organic matter added to the system
2. Determine any volatile organic matter not emitted to the atmosphere
3. Determine total volatile organic matter recovered by the system
4. Calculate overall control efficiency
5. If needed, calculate emission rates based on total coatings or solids.

Option 8 (§63.3370(n)(2)): Multiple Capture and Control Systems with one type of control device: Solvent Recovery (CEMs):

1. Demonstrate capture efficiency (monitor the operating parameter)
2. Using CEMs at inlet and outlet, document monthly control efficiency
3. Calculate overall control efficiency
4. If needed, calculate emission rates based on total coatings or solids.

Option 9 (§63.3370(n)(3)): Multiple Capture and Control Systems with one type of control device: Oxidizer:

1. Demonstrate capture efficiency
2. Demonstrate control efficiency
3. Calculate overall control efficiency by multiplying steps 1 and 2 together
4. If needed, calculate emission rates based on total coatings or solids.

Option 10: Multiple Capture and Control Systems with a combination of control devices- There is no direct approach in the NESHAP to demonstrate compliance by using multiple types of control devices. A site specific alternative method would need to be approved to determine compliance.

Monitoring

If a control device is used to comply with emission standards, monitoring must be conducted. The monitoring requirements differ depending on how emissions are controlled.

Intermittently-controlled work station	<ul style="list-style-type: none"> monitor bypasses of the control device and mass of each coating material applied at the work station during any bypasses (63.3350(c))
Solvent recovery unit	<ul style="list-style-type: none"> operate continuous emission monitoring system and perform quarterly audits or determine volatile matter recovered and conduct a liquid-liquid material balance (63.3350(d))
Control device	<ul style="list-style-type: none"> operate a continuous parameter monitoring system (63.3350(e))
Capture system	<ul style="list-style-type: none"> monitor capture system operating parameter (63.3350(f))

Figure 2. Monitoring requirements for the various control devices utilized.

Notification, Recordkeeping, Reports:

Notification submissions:

1. Initial Notification
2. Notification of Performance Test: If compliance is demonstrated by using a capture and control system to reduce HAP emissions the Administrator must be notified of testing 60 days in advance prior to conducting performance tests.
3. Notification of Compliance Status: This should be submitted within 180 days after the compliance date for this rule. This report includes compliance certification, results from performance tests and monitoring, and how continuous compliance will be demonstrated.

Reports:

Each reporting year is divided into two semiannual reporting periods and semiannual reports are to be submitted for this rule. If no deviations occur during the reporting period, a semiannual compliance report should be submitted stating that the source remained in compliance.

Recordkeeping: Two options

1. Records of organic HAP, volatile organic content and solids content of each coating applied, and the amount of each coating applied to affected lines each month.
2. For capture and control technology used, records of the equipment monitoring parameter requirements must be kept on file.

If you have any questions concerning this guidance, please contact
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