EPA finalizes rule for rotogravure and wide-web flexographic printers

On May 30, 1996, the U.S. Environmental Protection Agency (EPA) finalized a new maximum achievable control technology (MACT) standard to reduce hazardous air pollutants (HAPs) from publication rotogravure printers and product and packaging rotogravure and wide-web flexographic printers. HAPs generated at a printing facility include toluene, exylene, methanol, methyl ethyl ketone, ethyl benzene, methyl isobutyl, ethlene glycol and glycol ethers.

EPA promotes compliance through pollution prevention methods such as using inks, coatings and other materials that contain low quantities or no quantities of HAPs. This can eliminate the need for printers to install additional control equipment.

Who is Affected by the New Regulation?

The printers' MACT standard applies to all gravure and wide-web flexographic printers. However, the compliance requirements differ depending on whether your facility is a major source or an area source.

Your facility is a major source if you have the potential to annually emit 10 tons or more of a listed HAP, 25 tons or more of any combination of HAPs, or 100 tons of volatile organic compounds.

You are an area source if you use no more than 10 tons per year of each HAP or 25 tons per year of any combination of HAPs for any consecutive 12-month period. If you have the potential to emit more than the 10/25-ton limit, you may request to be classified as an area source if you are committed to using no more than those levels. Area sources are subject only to record keeping and reporting requirements under this regulation.

If your facility uses product and packaging rotogravure and wide-web flexographic printing presses and is a major source of HAPs because of other primary operations, you are subject only to record keeping and reporting requirements if these printing presses are used to apply no more than:

- 1,100 pounds of total material each month, or
- 880 pounds of HAPs each month.

In this case, your reporting requirements are the same as those for an area source. Research or laboratory facilities are not regulated under this MACT standard.

Product and packaging rotogravure and wide-web flexographic proof presses are exempt from this regulation.

What equipment is excluded or included under this MACT standard?

If the following conditions are met, you may choose to either exclude product and packaging rotogravure or wide-web flexographic presses, or include stand-alone coating equipment.

You may exclude your product and packaging rotogravure and wide-web flexographic printing press from this regulation if:

- They are primarily used for coating, laminating or other operations, and
- The total weight of material applied monthly using these print stations never exceeds five percent of the total weight of materials applied by the press for all applications including coating, laminating, printing, and
- You keep records demonstrating that the conditions above have been met each month (keep these records for five years).

You have the option of including stand-alone coating equipment under this regulation if:

- The coating equipment and the press are used to apply solids-containing material to the same web or substrate, or
- The coating equipment and the press are used to apply the same solids-containing material, or
- A common control device is used to control HAPs from both the coating equipment and the press.

If one coating machine is included, then all eligible stand-alone coating equipment at your facility must be included. Also, no product and packaging rotogravure or wide-web flexographic presses may be excluded.

You may wish to include this equipment to avoid separate compliance with upcoming regulations for coating equipment.

What are my compliance options?

For publication rotogravure printers:

Limit your organic HAP emissions to 8 percent of total volatiles used in your facility. If you use only HAP-based materials, you must recover 92 percent of the HAPs used each month.

For product and packaging rotogravure and wide-web flexographic printers:

- Control 95 percent of all organic HAP emissions from presses.
- Emissions from each press cannot exceed 0.20 pounds (lbs.) of HAP per pound of solids applied; or 0.04 lb. of HAP per pound of inks and other materials applied. You can comply with this alternative standard through operating control equipment, using low-HAP materials, or a combination of these two methods.

You can comply with these limits by:

- Using low-or non-HAP materials such as water-based, lower solvent-based materials, or ultraviolet/ electron beam cure processes.
- Implementing traditional emissions capture and control methods. Using a combination of the two compliance options.

Explore options for reducing your use of HAP-based materials. Such reductions would not only help you comply with this standard, but you may also avoid additional environmental regulations associated with using and handling hazardous materials. They may also prove to be more cost effective.

Table 1 — How to Demonstrate Compliance

Compliance options	How to demonstrate compliance
Use low-HAP Materials	♦ Perform monthly mass balance.
Use control devices 1. Solvent recovery 2. Incinerator	♦ Perform monthly mass balance. ♦ Use continuous emissions monitoring system (CEM). ♦ Conduct an initial performance test and monitor operating parameters of both capture system and incinerator, including hourly records of flow rates from presses to incinerator, or ♦ Use continuous emissions
Use a combination of low-HAP materials and control devices.	♦ Perform monthly mass balance and use appropriate performance tests or CEM.

When do I need to be in compliance?

The table above lists the compliance dates for the printers' MACT standard.

If you make additions to, replacement of, or modification to existing equipment that is defined as reconstruction, the compliance deadline for the existing facility was May 30, 1999.

For using low-HAP materials:

Source type	Compliance deadline
Existing sources (in operation before May 30, 1996)	May 30, 1999
New and reconstructed sources	upon start-up

Publication rotogravure printers can comply by limiting the amount of HAP used to 8 percent (by weight) or less of the amount of volatile matter used. Demonstrate compliance by performing a monthly mass balance to verify that your HAP emissions do not exceed 8 percent (by weight) of the volatile matter used. Measure the amount of material used and determine the HAP content and volatile matter content of each material. You can get this information from the material safety data sheet.

Product and packaging rotogravure and wide-web flexography printers comply by performing a monthly mass balance to verify that their HAP emissions do not exceed 0.20 lb. of HAP per pound of solids; or 0.04 pound of HAP per pound of ink and other materials applied. Measure the amount of material used and determine the HAP content of each material. If you are demonstrating compliance with the first listed threshold (pound of HAP per pound of solids applied), you also must determine the solids content of each material used.

If using a solvent recovery system:

Demonstrate compliance using one of the following two methods:

1. Calculate a monthly liquid /liquid mass balance.
   - ♦ Measure the weight of each material used;
   - ♦ Determine both the HAP content and the volatile matter content, including water, of each material (You can use manufacturer's formulation data.);
   - ♦ Calculate the overall HAP control efficiency for the month using equations outlined in the standard.
2. Use continuous emission monitors (CEM).
   - ♦ Conduct an initial performance test of the control equipment's capture efficiency within 180 days of compliance date and use CEM at both the inlet and outlet to assure its efficiency;

- Demonstrate continued compliance by monitoring your capture system's operating parameters and by using CEM (Operating parameters are specified in the standard.);
- Record the flow rate from each press to your control device on an hourly basis;
- Inspect the CEM monthly; and
- Perform quarterly performance tests of the CEM

If using an incinerator:

1. Determine overall control efficiency.
- Conduct initial performance tests of both the incinerator's capture efficiency and its destruction efficiency.
- Demonstrate continued compliance by monitoring the operating parameters of both the capture system and the incinerator.
- Record the flow rate from press to control device on an hourly basis; and
- Calibrate or replace the incinerator monitoring thermocouple(s) quarterly.

2. Use CEM as outlined in Method 2 for solvent recovery systems.

What are my record keeping and reporting requirements?

You must comply with the applicable record keeping provisions of EPA's air toxics general provisions rule. Among other requirements, you must maintain records of all measurements used to demonstrate compliance with this MACT standard. These may include operating data or CEM data, as well as material usage, HAP usage, volatile matter usage and solids usage.

Table 2 and Table 3 outline the different reports you must submit depending on whether your facility is a major source or an area source. You must keep all compliance records for five years. Submit reports to both

:

Kansas Department of Health & Environment
Bureau of Air & Radiation
Building 283, Forbes Field
Topeka, KS 66620

U.S. EPA, Region 7
Air, RCRA, and Toxics
901 N. 5th Street
Kansas City, KS 66101

Table 2 — Reports Required for Major Sources

Type of report	Information required	When required
Initial notification	♦ Any facility modification ♦ 12-month HAP usage or expected usage (existing facilities) ♦ 12-month usage (new facilities) *Not required if a permit containing the same information*	May 30, 1998, for existing facilities (within 120 days for new sources)
Notification of Performance Tests and CEM Evaluation Periods	♦ Times of scheduled control device performance tests or CEM evaluations. ♦ Results of any required performance tests.	60 days prior to tests Within 60 days after tests
Notification of Compliance Status	♦ Methods used to achieve compliance ♦ Sufficient information to demonstrate compliance ♦ Method(s) used to determine continued compliance ♦ Specified range of each monitored parameter ♦ Rationale for why this range indicates compliance ♦ Statements concerning whether each source oper-	Within 60 days after final compliance date.
Start-up, Shutdown, and Malfunction Report	♦ Actions consistent with start-up, shutdown, and malfunction plan *Required only if a start-up, shutdown, or malfunction occurs in the operating period.* ♦ Actions not consistent with the plan	Semiannually (within 30 days after the end of each calendar half year) Within two working days after commencing action, followed by a letter within seven working days after the end of the event.
Summary Reports	♦ Surpassing of monitored parameters	Semiannually (within 30 days after the end of each calendar half year.)

Table 3 — Reports Required for Area Sources

Type of report	Information required	When required
Initial Notification	♦ Any facility modification ♦ 12-month HAP usage or expected usage (existing facilities) ♦ 12-month usage (new facilities.) Not required (if a permit containing the same information has been submitted	May 30, 1998, for existing facilities (within 120 days for new sources)
Summary Reports	♦ Surpassing of HAP usage	Semiannually (within 30 days after the end of each calendar half-year.)

What are the Kansas Air Permit Requirements?

If you are a major source of HAPs, you are required to get a Class I air operating permit from the Kansas Department of Health and Environment (KDHE.) A major source has the potential to emit 10 tons of a single HAP, 25 tons of a combination of HAPs, or 100 tons of volatile organic compounds. Potential-to-emit means the maximum amount of HAPs your facility could possibly emit if it operated at 100 percent design capacity; that is, all equipment running 24 hours per day, 365 days per year without pollution control devices.

If your actual emissions are above the major source threshold, you must get a Class I permit. If your actual emissions are below these thresholds, you may be able to get a Class II permit. A Class II permit is less rigorous and less expensive than a Class I permit.

The Class II permit puts a federally enforceable limit on your facility's potential-to-emit. This means that the limits are practical and can be proven by record keeping and reporting. For example, you may be able to limit your potential-to-emit by one or more of the following actions:

1. Limit your operating hours;
2. Limit your production rates;
3. Limit your material;
4. Limit material content.

If you need help determining which permit applies to you, contact SBEAP.

Table 4 — Kansas Air Permits

Type of Source	Class I permit	Class II permit
Major source (actual emission are above major source levels)	Yes	Not applicable
Major source (potential emissions are above major source levels, actual emissions are below major source levels.)	Yes Or limit potential emissions	Yes If potential emissions are limited
Area source (potential and actual emissions are below major source thresholds)	Not applicable	Not applicable

Where can I get more information?

SBEAP operates a toll-free technical hotline that you can call for additional assistance. In addition, SBEAP has specialists who review current control technologies and identify pollution prevention opportunities. They will walk through your facility and submit a confidential, non-regulatory report detailing recommendations on process change options. For free technical assistance, call SBEAP at KSU, 800.578.8898.

K-STATE Kansas State University

The Small Business Environmental Assistance Program's (SBEAP) mission is to help Kansas small businesses comply with clean air regulations, SBEAP operates through a consortium of the University of Kansas, Kansas State University and Wichita State University. This fact sheet was published by Kansas State University's Pollution Prevention Institute. For more information, call 800-578-8898 or send e-mail to SBEAP@ksu.edu. The University of Kansas, Kansas State University and Wichita State University are EEO/AA providers.

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