



No owner or operator of any sheetfed offset lithographic printing line shall apply fountain solution with the VOM content exceeding the following limits:

- i. 5 percent, by volume; or
  - ii. 8.5 percent, by volume, and the temperature of the fountain solution is maintained below 15.6EC (60EF), measured at the reservoir or the fountain tray.
  - iii. The Permittee may comply with either VOM limitation in Conditions 1.1.3(b)(i) and 1.1.3(b)(ii) as necessary without notifying the Illinois EPA, provided that records are maintained in accordance with 1.1.9.
- c. Each affected printing line is subject to limitations of 35 IAC 218.407(a)(4) for as-used cleaning solution, which provides that:

No owner or operator of the press shall cause or allow the use of a cleaning solution on the affected press unless:

- i. The VOM content of the as-used cleaning solution is less than or equal to 30 percent, by weight;
  - ii. the VOM composite partial vapor pressure of the as-used cleaning solution is less than 10 mmHg at 20EC (68EF); or
  - iii. The Permittee may comply with either limitation in Conditions 1.1.3(c)(i) and 1.1.3(c)(ii) as necessary without notifying the Illinois EPA, provided that records are maintained in accordance with 1.1.9.
- d. Each affected printing line at the source is subject to requirements of 35 IAC 218.407(a)(5) for keeping cleaning materials, which provides that:

The VOM containing cleaning materials, including used cleaning towels associated with any lithographic printing line shall be kept, stored and disposed of in closed containers.

e. An affected printing line is subject to the following limitation:

i. No owner or operator of an affected printing line shall apply at any time any coating in which the VOM content exceeds the following emission limitations for the paper coating as applied pursuant to 35 IAC 218.204(c). The following emission limitation is expressed in units of VOM per volume of coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied at each coating applicator:

<u>kg/l</u>	<u>lb/gal</u>
0.28	2.3

ii. Compounds which are specifically exempted from the definition of VOM should be treated as water for the purpose of calculating the "less water" part of the coating composites.

1.1.4 Non-Applicability of Regulations of Concern

None

1.1.5 Operational and Production Limits and Work Practices

None

1.1.6 Emission Limitations

a. The affected printing line is subject to the following:

Emissions from the affected printing line shall not exceed the following limits:

VOM Emissions	
<u>(Ton/Month)</u>	<u>(Ton/Year)</u>
0.9	8.35

These limits are based on the maximum material usage and the maximum material VOM content.

- b. Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).
- c. The source has addressed the applicability and compliance of 35 IAC Part 203, Major Stationary Sources Construction and Modification (See Attachment 1). These limits continue to ensure that the construction and/or modification addressed in this construction permit does not constitute a new major source or major modification pursuant to these rules.

#### 1.1.7 Testing Requirements

Upon request from the Illinois EPA or USEPA, testing to demonstrate compliance with the VOM content limitations for fountain and cleaning solution, and to determine the VOM content of fountain solutions, fountain solution additives, cleaning solvents, cleaning solutions, coating, inks, and manifested waste shall be conducted, as follows:

- a. The applicable test methods and procedures specified in 35 IAC 218.105(a) shall be used, provided, however, Method 24 shall be used to demonstrate compliance; or
- b. The manufacturer's specifications for VOM content for fountain solution additives, cleaning solvents, coating, and inks may be used if such manufacturer's specifications are based on results of tests of the VOM content conducted in accordance with methods specified in 35 IAC 218.105(a), provided, however, Method 24 shall be used to determine compliance.
- c. The percent concentration of VOM in the manifested waste should be initially determined by Method 24 and based on the normal operating scenario established in this permit. Retesting is not required, unless the Permittee significantly increases the amount of manifested waste or switches to a solvent with much higher VOM content.

#### 1.1.8 Monitoring Requirements

- a. Fountain Solution
  - i. Fountain Solution Temperature

- A. The owner or operator of any lithographic printing line relying on the temperature of the fountain solution shall install, maintain, and continuously operate a temperature monitor of the fountain solution in the reservoir or fountain tray, as applicable [35 IAC 218.410(a)(1)].
  - B. The temperature monitor must be capable of reading with an accuracy of 0.3EC or 0.5EF, and must be attached to an automatic, continuous recording device such as a strip chart, recorder, or computer, with at least the same accuracy, that is installed, calibrated and maintained in accordance with the manufacturer's specifications. If the automatic, continuous recording device malfunctions, the owner or operator shall record the temperature of the fountain solution at least once every two operating hours. The automatic, continuous recording device shall be repaired or replaced as soon as practicable [35 IAC 218.410(a)(2)].
- ii. Fountain Solution VOM Content
- A. For a fountain solution to which VOM is not added automatically:
    - 1. Maintain records of the VOM content of the fountain solution; or
    - 2. Take a sample of the as-applied fountain solution from the fountain tray or reservoir, as applicable, each time a fresh batch of fountain solution is prepared or each time VOM is added to an existing batch of fountain solution in the fountain tray or reservoir, and shall determine compliance with the VOM content limitation of the as-applied fountain solution by using one of the following options:

- With a refractometer or hydrometer with a visual, analog, or digital readout and with an accuracy of 0.5 percent. The refractometer or hydrometer must be calibrated with a standard solution for the type of VOM used in the fountain solution, in accordance with manufacturer's specifications, against measurements performed to determine compliance. The refractometer or hydrometer must be corrected for temperature at least once per 8-hour shift or once per batch of fountain solution prepared or modified, whichever is longer; or
  
- With a conductivity meter if it is demonstrated that a refractometer and hydrometer cannot distinguish between compliant and noncompliant fountain solution for the type and amount of VOM in the fountain solution. A source may use a conductivity meter if it demonstrates that both hydrometers and refractometers fail to provide significantly different measurements for standard solutions containing 95 percent, 100 percent and 105 percent of the applicable VOM content limit. The conductivity meter reading for the fountain solution must be referenced to the conductivity of the incoming water. A standard solution shall be used to calibrate the conductivity meter for the type of VOM used in the fountain solution, in accordance with manufacturer's specifications;

- B. For fountain solutions to which VOM is added at the source with automatic feed equipment, determine the VOM content of the as-applied fountain solution based on the setting of the automatic feed equipment which makes additions of VOM up to a pre-set level. The equipment used to make automatic additions must be installed, calibrated, operated and maintained in accordance with manufacturer's specifications.
- C. The Permittee may comply with either method described in Conditions 1.1.8(a)(ii)(A) and 1.1.8(a)(ii)(B) as necessary without notifying the Illinois EPA, provided that records are maintained in accordance with 1.1.9.

b. Cleaning Solution

- i. The owner or operator of any lithographic printing line relying on the VOM content of the cleaning solution must:
  - A. For cleaning solutions that are prepared at the source with equipment that automatically mixes cleaning solvent and water (or other non-VOM materials):
    - Install, operate, maintain, and calibrate the automatic feed equipment in accordance with manufacturer's specifications to regulate the volume of each of the cleaning solvent and water (or other non-VOM materials), as mixed; and
    - Pre-set the automatic feed equipment so that the consumption rates of the cleaning solvent and water (or other non-VOM materials), as applied, comply with Condition 1.1.3.
  - B. For cleaning solutions that are not prepared at the source with automatic feed equipment, keep records of the usage of cleaning solvent and water (or other non-VOM materials).

- ii. The owner or operator of any lithographic printing line relying on the vapor pressure of the cleaning solution to comply with 35 IAC 218.407(a)(4)(B) must keep records for such cleaning solutions used on any such line(s).
- iii. The Permittee may comply with either method described in Conditions 1.1.8(b)(i) and 1.1.8(b)(ii) as necessary without notifying the Illinois EPA, provided that records are maintained in accordance with 1.1.9.

1.1.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items for the affected printing line to demonstrate compliance with conditions of this permit:

a. Fountain Solution

- i. The Permittee shall collect and record the name and identification of each batch of fountain solution prepared for use on one or more lithographic printing lines or centralized reservoir using such batch of fountain solution, and the applicable VOM content limitation for the batch [35 IAC 218.411(c)(2)(A)].
- ii. For each batch of as-applied fountain solution, the following information shall be collected and recorded, pursuant to 35 IAC 218.411(c)(2)(C):
  - A. Date and time of preparation and each subsequent modification of the batch;
  - B. Volume and VOM content of each component used in, or subsequently added to, the fountain solution batch;
  - C. Calculated VOM content in terms of volume percent of the as-applied fountain solution; and
  - D. Any other information necessary to demonstrate compliance with the applicable VOM content limits.

iii. As an alternative to (ii), the Permittee shall collect and record the following when a hydrometer, refractometer or conductivity meter is used to comply with the monitoring requirements [35 IAC 218.411(c)(2)(B)].

- A. The date and time of preparation of each batch of fountain solution, and each subsequent modification, of the batch;
- B. The results of each measurement taken in accordance with 35 IAC 218.410(b)(1)(B). Measurements are required to be taken each time a fresh batch of fountain solution is prepared or each time VOM is added to an existing batch of fountain solution;
- C. Documentation of the periodic calibration of the meter in accordance with the manufacturer's specifications, including date and time of calibration, personnel conducting, identity of standard solution, and resultant reading; and
- D. Documentation of the periodic temperature adjustment of the meter, including date and time of adjustment, personnel conducting and results.

b. Cleaning Solution

i. For each batch of cleaning solution for which the owner or operator relies on the vapor pressure of the cleaning solution to comply with Condition 1.1.3(c)(ii), the Permittee shall collect and record the following information, pursuant to 35 IAC 218.411(d)(2)(C):

- A. The name and identification of each cleaning solution;
- B. Date and time of preparation, and each subsequent modification, of the batch;
- C. The molecular weight, density, and VOM composite partial vapor pressure of each cleaning solvent, as determined in accordance with 35 IAC 218.409(e);

- D. The total amount of each cleaning solvent used to prepare the as-used cleaning solution; and
  - E. The VOM composite partial vapor pressure of each as-used cleaning solution, as determined in accordance with 35 IAC 218.409(e).
- ii. The Permittee shall record the date, time and duration of scheduled inspections performed to confirm the proper use of closed containers to control VOM emissions, and any instances of improper use of closed containers, with descriptions of actual practice and corrective action taken, if any [35 IAC 218.411(d)(2)(D)].
- c. The Permittee shall collect and record the following information for the affected printing line:
    - i. Monthly and annual VOM usage separately for the affected printing line, in terms of pounds;
    - ii. The VOM and HAP content of each ink, coating, fountain solution, and cleaning solution used, accompanied by a copy of the supporting information, e.g., supplier data sheet or laboratory analysis reports;
    - iii. Total emissions of VOM and HAPs from all affected lithographic printing lines calculated in accordance with procedures given in Condition 1.1.12 for the current plus the preceding 11 months;
    - iv. Amount of manifested waste (lb/year) generated on the affected printing line and VOM content of waste (wt. %); and
    - v. The Permittee shall maintain an operating log that states which method of compliance is being used for the cleaning and fountain solutions and the dates each method is used.

1.1.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of noncompliance with applicable requirements as follows:

a. Report of Deviations

If there is an exceedance of the requirements of this permit as determined by the records required by this permit, the Permittee shall submit a report to the Illinois EPA's Compliance Section in Springfield, Illinois within 30 days after the exceedance. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedance or violation and efforts to reduce emissions and future occurrences.

b. Report for Changing Method of Compliance

If the Permittee changes the method of demonstrating compliance with the applicable VOM content limitations in 35 IAC 218.407 or changes the method of demonstrating compliance with the VOM content limitations for fountain solutions or cleaning solutions, the Permittee shall certify compliance for such new methods in accordance with the requirements of the certification reports of Condition 9.8 within 30 days after making such change, and perform all tests and calculations necessary to demonstrate that such printing line(s) will be in compliance with the applicable requirements of 35 IAC 218.407 and the requirements of this permit [35 IAC 218.411(c)(4) and (d)(4)].

1.1.11 Operational Flexibility/Anticipated Operating Scenarios

The Permittee is authorized to make the following physical or operational changes with respect to an affected printing line without prior to notification the Illinois EPA or revision of this permit. This condition does not affect the Permittee's obligation to properly obtain a construction permit in a timely manner for any activity constituting construction or modification of the source, as defined in 35 IAC 201.102:

- a. Usage of coatings, ink, fountain solution, cleaning solvents, or other raw materials at this source with various VOM contents provided that the materials are tested in accordance with Condition 1.1.7 and the limits specified in Condition 1.1.6 are not exceeded and an affected printing line remains in compliance with Condition 1.1.3.
- b. Activities involving routine repair, replacement of parts, general maintenance, replacement of equipment and physical relocation of equipment on-site provided the emission limitations in Condition 1.1.6 are not exceeded and the affected printing line remains in compliance with 1.1.3.

1.1.12 Compliance Procedures

- a. Compliance of the affected printing line with VOM emission limitations in Condition 1.1.3 shall be based on the recordkeeping requirements in Condition 1.1.9.
- b. Compliance with annual VOM emission limits in Condition 1.1.6 and HAPs emissions from the affected lithographic printing line shall be determined by using the emission factors and formulas listed below:
  - i. The Permittee may presume 95% retention of coldset ink VOM/HAP in substrate, as stated in 35 IAC 218.411(a)(1)(B)(iii);
  - ii. The Permittee may presume 50% retention of the manual blanket wash VOM/HAP in the cleaning towels;
  - iii.  $\text{VOM/HAP Emissions from Ink Usage} = \text{VOM Ink Usage} \times 0.05 - \text{VOM Ink Waste}$
  - iv.  $\text{VOM/HAP Emissions from Fountain Solution} = \text{VOM Fountain Solution Usage} - \text{VOM Fountain Solution Waste}$
  - v.  $\text{VOM/HAP Emissions from the Manual Cleaning Solution (Manual Blanket Wash)} = \text{Manual Cleaning Solution VOM Usage} \times 0.5$
  - vi.  $\text{VOM/HAP Emissions from the Automatic Blanket Wash} = \text{Automatic Blanket Wash VOM Usage} - \text{Automatic Blanket Wash Waste}$

vii. Total VOM/HAP Emissions = Ink VOM/HAP Emissions + Fountain Solution VOM/HAP Emissions + Cleaning Solution VOM/HAP Emissions (Manual Blanket Wash VOM/HAP Emissions + Automatic Blanket Wash VOM Emissions) + Coating VOM/HAP Emissions

2. This permit is issued based on negligible emissions of volatile organic material from the five gluing machines. For this purpose, emissions shall not exceed nominal emission rates of 0.1 tons/year.

It should be noted that the die cutting machine is exempt from state permit requirements, pursuant to 35 Ill. Adm. Code 201.146(aa).

If you have any questions on this, please call Jason Schnepf at 217/782-2113.

Donald E. Sutton, P.E.  
Manager, Permit Section  
Division of Air Pollution Control

DES:JMS:jar

cc: Region 1

Attachment 1

NSR Applicability

Contemporaneous Time Period of 1996 Through 2000

Table I **B** Emissions Increases Associated With The Proposed Modification

<u>Item of Equipment</u>	<u>Installation Date</u>	<u>Permitted VOM Emissions (Tons/Year)</u>
Press 16	New	8.35
Glue Machines	New	<u>0.10</u>
		8.45

Table II **B** Source-Wide Creditable Contemporaneous Emission Decreases

<u>Item of Equipment</u>	<u>Removal Date</u>	<u>VOM* Emissions (Tons/Year)</u>
None		

Table III **B** Source-Wide Creditable Contemporaneous Emission Increases

<u>Item of Equipment</u>	<u>Operational Date</u>	<u>Permitted VOM Emissions (Tons/Year)</u>
Press 15	1996	15.11

Table IV **B** Net Emissions Change

	<u>(Tons/Year)</u>
Increases Associated With The Proposed Modification	8.45
Creditable Contemporaneous Emission Decreases	0.00
Creditable Contemporaneous Emission Increases	<u>15.11</u>
	23.56

\* Past actual emissions are based on an average of the actual emissions from the previous two calendar years prior to shutdown of equipment.

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