



- iii. An afterburner is installed and operated so that VOM emissions from the press dryer exhaust(s) are reduced by 90 percent, by weight;
  - iv. The afterburner is equipped with Illinois EPA and USEPA approved continuous monitor that measures the temperature rise across each catalytic afterburner bed. It shall be installed, calibrated, maintained, and operated in accordance with the manufacturer's specifications and shall have an accuracy of 3°C or 5°F. Monitoring shall be performed at all times when the afterburner is operating;
  - v. Monitoring device is equipped with a continuous recorder of the temperature, such as a strip chart recorder or computer, with at least the same accuracy as the temperature monitor. It shall be installed, calibrated, operated and maintained, in accordance with manufacturer's specifications;
  - vi. The afterburner is operated at all times when at least one printing line is in operation.
- b. Non-heatset sheet-fed press:
- i. The VOM content of the as-applied fountain solution is 5 percent or less, by volume;
- c. Any lithographic printing presses:
- i. The VOM content of the as-used cleaning solution is less than or equal to 30 percent, by weight; or
  - ii. The VOM composite partial vapor pressure of the as-used cleaning solution is less than 10 mmHg at 20°C (68°F).
- d. The VOM containing cleaning materials, including used cleaning towels, associated with any lithographic printing line are kept, stored or disposed of in any manner other than in closed containers.
3. This permit is issued based on the coating operations performed on the lithographic printing presses being subject to the VOM emission limitations of 35 Ill. Adm. Code Part 218, Subpart F: Coating Operations. Compliance with the requirements of this subpart is achieved through the use of compliance coating pursuant to 35 Ill. Adm. Code 218.204(c): the VOM content of the coatings, as applied, shall not exceed 2.3 lb/gallon excluding water and any compounds which are specifically exempted from the definition of VOM, or through the use of a capture system and control device which provide 81 percent reduction in the overall VOM emissions and a control device which provides 90 percent efficiency pursuant to 35 Ill. Adm. Code 218.207(b)(1).
4. The VOM emissions from the lithographic printing and coating operations shall not exceed 1.5 tons/month and 11.5 tons/year. The VOM emissions shall be calculated using the following equations:

- a. From the heatset printing press:

$$E = \sum [I_i \times V_{ii} \times 0.8 \times (1-0.95)] + \sum [FS_j \times V_{FSj} \times (1-0.7 \times 0.95)] + \sum [CS_k \times V_{CSk} \times (1-0.4 \times 0.95)] + \sum [BW_1 \times V_{BW1} \times 0.5] + \sum [C_m \times V_{Cm} \times (1-0.95)];$$

b. From the non-heatset printing presses:

$$E = \sum(I_n \times V_{In} \times 0.05) + \sum(S_p \times V_{sp}) - (W \times C_w), \text{ where:}$$

- E - VOM emissions (ton);
- I<sub>i</sub> - heatset ink usage (ton);
- V<sub>Ii</sub> - VOM content of heatset ink (wt. fraction);
- FS<sub>j</sub> - heatset fountain solution usage (ton);
- V<sub>FSj</sub> - VOM content of heatset fountain solution (wt. fraction);
- CS<sub>k</sub> - heatset automatic cleaning solution usage (ton);
- V<sub>CSk</sub> - VOM content of heatset automatic cleaning solution (wt. fraction);
- BW<sub>l</sub> - heatset blanket wash cleaning solution usage (ton);
- V<sub>BWl</sub> - VOM content of heatset blanket wash cleaning solution (wt. fraction);
- C<sub>m</sub> - heatset coating usage (ton);
- V<sub>m</sub> - VOM content of heatset coating (wt. fraction);
- I<sub>n</sub> - non-heatset ink usage (ton);
- V<sub>In</sub> - VOM content of non-heatset ink (wt. fraction);
- S<sub>p</sub> - other VOM-containing materials usage on the non-heatset printing presses (fountain and cleaning solutions and coatings) (ton);
- V<sub>sp</sub> - VOM content of other non-heatset materials (wt. fraction);
- W - Certified amount of shipped-off waste materials;
- C<sub>w</sub> - VOM content of shipped-off waste materials.

These limits are based on the maximum production rate, 20% of ink's VOM retention for heatset printing press and 95% for non-heatset printing presses, 100% capture efficiency of the afterburner for inks VOM, 70% for fountain solutions and 40% for cleaning solvents on heatset printing presses, 95% afterburner destruction efficiency of the afterburner and 50% VOM retention of blanket wash solvent in the cleaning towels. Compliance with annual limits shall be determined from a running total of 12 months of data.

5. This permit is issued based upon the flexographic printing and coating operations not being subject to the VOM control requirements of 35 Ill. Adm. Code 218.401: Flexographic and Rotogravure Printing. This is consequence of the maximum theoretical emission and potential to emit of VOM being limited to less than applicability thresholds of 100 and 25 tons per year, respectively, specified in Section 218.401(a).
- 6a. The catalytic afterburner controlling two flexographic printing presses shall be equipped with Illinois EPA and USEPA approved continuous monitor that measures the temperature rise across each catalytic afterburner bed. It shall be installed, calibrated, maintained, and operated in accordance with the manufacturer's specifications. Monitoring shall be performed at all times when the afterburner is operating;
  - b. Monitoring device shall be equipped with a continuous recorder of the temperature, such as a strip chart recorder or computer, with at least the same accuracy as the temperature monitor. It shall be installed, calibrated, operated and maintained, in accordance with manufacturer's specifications;
7. VOM emissions from the flexographic printing operations shall not exceed

1.5 tons/month and 10.0 tons/year. The VOM emissions shall be calculated using the following equation:

$$E = \sum[(I_i \times C_{ii}) \times (1 - 0.74)] + \sum[(M_j \times C_{mj})] - (W \times C_w),$$

where:

- E - VOM emissions (tons);
- I<sub>ii</sub> - ink usage on the controlled presses (tons);
- C<sub>ii</sub> - VOM content of the ink used on the controlled presses (fraction);
- M<sub>j</sub> - usage of other materials on flexographic presses (tons);
- C<sub>mj</sub> - VOM content of other materials (fraction);
- W - certified amount of shipped-off waste materials (tons);
- C<sub>w</sub> - VOM content of shipped-off waste materials.

These limits are based on the maximum production capacity and 74% overall control efficiency of the afterburner. Compliance with annual limits shall be determined from running total of 12 months of data.

8. VOM usage and VOM emissions from four non-contact printers and miscellaneous clean-up operations shall not exceed 0.1 tons/month and 0.4 tons/year. Compliance with annual limits shall be determined from running total of 12 months of data.
9. Operation and emissions of the natural gas firing equipment (combined) shall not exceed the following limits:

Natural Gas Usage: 11 mmscf/month, 132 mmscf/year

<u>Pollutant</u>	<u>Emission Factor</u> ( <u>Lb/mmscf</u> )	<u>Emissions</u>	
		( <u>Tons/Mo</u> )	( <u>Tons/Yr</u> )
Nitrogen Oxides (NO <sub>x</sub> )	100	0.6	6.6
Carbon Monoxide (CO)	84	0.5	5.5
Particulate Matter (PM)	7.6	0.05	0.5
Volatile Organic Material (VOM)	5.5	0.03	0.4

These limits define the potential emissions of the fuel combustion equipment and are based on actual emissions determined from the maximum firing rate, the combustion of natural gas and standard emission factors. 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.

10. The emissions of Hazardous Air Pollutants (HAPs) as listed in Section 112(b) of the Clean Air Act shall not equal or exceed 10 tons per year of any single HAP or 25 tons per year of any combination of such HAPs, or such lesser quantity as USEPA may establish in a rule which would require the Permittee to obtain a CAAPP permit from the Agency. As a result of this condition, this permit is issued based on the emissions of any HAP from this source not triggering the requirement to obtain a CAAPP permit from the Agency.
11. This permit is issued based on negligible emission of particulate matter from the waste paper collection system. For this purpose, emission shall not exceed a nominal emission rate of 0.1 lb/hour and 0.44 tons/year.
12. The Permittee shall maintain daily records of the following items:

- a. A log of operating time for the afterburners, monitoring equipment, and the associated printing line;
  - b. A maintenance log for the afterburner and monitoring equipment detailing all routine and non-routine maintenance performed, including dates and duration of any outages;
  - c. A log detailing checks on the air flow direction or air pressure of the dryer and press room to insure compliance with the requirements of Section 218.407(a) (1) (B) at least once per 24-hour period while the line is operating;
  - d. The name and identification of each batch of fountain solution prepared for use on one or more lithographic printing lines, the lithographic printing line(s) or centralized reservoir using such batch of fountain solution, and the applicable VOM content limitation for the batch;
  - e. Date and time of preparation and each subsequent modification of the batch of fountain solution;
  - f. Volume and VOM content of each component used in, or subsequently added to, the fountain solution batch;
  - g. Calculated VOM content of the as-applied fountain solution;
  - h. The name and identification of each cleaning solution;
  - i. Date and time of preparation, and each subsequent modification, of the batch of cleaning solution; and
  - j. The molecular weight, density, and VOM composite partial vapor pressure of each cleaning solvent.
13. The Permittee shall maintain monthly records of the following items:
- a. Names and amounts of inks, fountain solutions, coatings and clean-up solvents used (tons/month, tons/year), separately for each group of printing presses;
  - b. VOM and HAP content of materials in item (a) (weight %); and
  - c. Certified records of amount of waste solvent shipped-off (tons) and its VOM and HAP content (weight %).
  - d. VOM and HAP emissions with supporting calculations (tons/month, tons/year).
14. All records and logs required by this permit shall be retained at a readily accessible location at the source for at least three years from the date of entry and shall be made available for inspection and copying by the Illinois EPA and USEPA upon request. Any records retained in an electronic format (e.g., computer) shall be capable of being retrieved and printed on paper during normal source office hours so as to be able to respond to an Illinois EPA request for records during the course of a source inspection.
15. 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 and Enforcement 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 exceedances or violation and efforts to reduce emissions and future occurrences.

16. Two (2) copies of required reports and notifications concerning equipment operation or repairs, performance testing or a continuous monitoring system shall be sent to:

Illinois Environmental Protection Agency  
Division of Air Pollution Control  
Compliance and Enforcement Section (#40)  
P.O. Box 19276  
Springfield, IL 62794-9276

and one (1) copy shall be sent to the Illinois EPA's regional office at the following address unless otherwise indicated:

Illinois Environmental Protection Agency  
Division of Air Pollution Control  
9511 West Harrison  
Des Plaines, Illinois 60016

If you have any questions on this permit, please call Valeriy Brodsky at 217/782-2113.

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

DES:VJB:lsm

cc: IEPA, FOS Region 1  
Lotus Notes

Attachment A - Emissions Summary

This attachment provides a summary of the maximum emissions from printing plant operating in compliance with the requirements of this federally enforceable permit. In preparing this summary, the Agency used the annual operating scenario which results in maximum emissions from such a plant. The resulting maximum emissions are below the levels (25 tons per year of VOM, 10 tons/year for a single HAP and 25 tons/year for totaled HAPs) at which this source would be considered a major source for purposes of the Clean Air Act Permit Program. Actual emissions from this source will be less than predicted in this summary to the extent that less material is used and control measures are more effective than required in this permit.

<u>Emission Units</u>	<u>VOM</u>	<u>Emissions (Tons/Year)</u>				
		<u>NO<sub>x</sub></u>	<u>CO</u>	<u>PM</u>	<u>Single HAP</u>	<u>Total HAP</u>
Flexographic presses	10.0	--	--	--	--	--
Lithographic presses	11.5	--	--	--	--	--
Non-contact printers	0.4	--	--	--	--	--
Paper collection system	--	--	--	0.4	--	--
Combustion equipment	0.4	6.6	5.5	0.5	--	--
Plant-wide	--	--	--	--	<10	<25
Total	22.3	6.6	5.5	0.9	<10	<25

DES:VJB:lsm