



Manual Cleaning Solvent VOM Emissions (Em):

$$Em = Cm * (1 - Rm/100)$$

Automatic Cleaning Solvent VOM Emissions (Ea):

$$Ea = Ca * (1 - [(K/100) * (Ja/100)])$$

UV Coating VOM Emissions (Eu):

$$Eu = Cu * (1 - Ru/100) * (1 - [(K/100) * (Ju/100)])$$

Total VOM Emissions (Et):

$$Et = Ei + Ef + Em + Ea + Eu$$

Where:

- Ci = Ink VOM consumption (where consumption is the usage \* the VOM content)
- Cf = Fountain solution VOM consumption
- Cm = Manual cleaning solvent VOM consumption
- Ca = Automatic cleaning solvent VOM consumption
- Cu = UV coating solvent VOM consumption
- Ri = Percent of ink VOM retained in printed product = 20
- Rm = Percent of manual cleaning solvent VOM retained in cleaning wipes = 50
- Ru = Percent of UV coating VOM retained in printed product = 20
- K = Control efficiency of afterburner = 95 (0 for uncontrolled presses)
- Ji = Capture efficiency of dryer and control system for ink VOM = 100 (0 for uncontrolled presses)
- Jf = Capture efficiency of dryer and control system for fountain solution VOM = 70 (0 for uncontrolled presses)
- Ja = Capture efficiency of dryer and control system for automatic cleaning solvent VOM = 40 (0 for uncontrolled presses)
- Ju = Capture efficiency of dryer and control system for UV coating VOM = 100 (0 for uncontrolled presses)

- c. The presses shall be operated such that usage of inks, fountain solutions, manual and automatic cleaning solvents, and UV coatings will result in emissions that do not exceed the limits in Condition 2a as determined by using the emissions calculations in Condition 2b.
- d. Compliance with annual limits shall be determined from a running total of 12 months of data.

3. Used cleaning wipes shall be stored in closed containers.
- 4a. All controlled presses shall be controlled by a thermal oxidizer and the thermal oxidizer operating whenever any controlled press is operating except as described in Condition 5b.
- b. The facility shall maintain all emissions during periods when the thermal oxidizer is not operating. These emissions together with the controlled emissions shall not exceed the limits in Condition 2a.
- c. The afterburner shall be operated to have a minimum destruction efficiency of 95% and the minimum combustion temperature of the afterburner shall be 1350°F or a temperature demonstrated to achieve at least 95% destruction from an acceptable emission test. This temperature shall be achieved before the printing operation is begun and shall be maintained during the printing operation.
- d. The afterburner shall be equipped with a continuous temperature indicator and strip chart recorder or disk storage for the afterburner combustion temperature. During periods when the strip chart recorder or disk storage device are inoperable, the Permittee shall manually record the afterburner combustion temperature at least one time per operating day.
- 5a. The Permittee shall maintain records of the following items:
  - i. Ink usage (tons/month and tons/year).
  - ii. Fountain solution usage (tons/month and tons/year).
  - iii. Manual cleaning solvent usage (tons/month and tons/year).
  - iv. Automatic cleaning solvent usage (tons/month and tons/year).
  - v. UV coating usage (tons/month and tons/year).
  - vi. VOM content of ink (percent VOM by weight).
  - vii. VOM content of fountain solution as-applied (percent VOM by weight).
  - viii. VOM content of manual cleaning solvent (percent VOM by weight).
  - ix. VOM content of automatic cleaning (percent VOM by weight).
  - x. VOM content of UV coating (percent VOM by weight).
  - xi. VOM emissions when the thermal oxidizer is not operating including supporting calculations (tons/incident).

- xii. Total VOM emissions including supporting calculations (tons/month and tons/year).
- xiii. Afterburner temperature.
- b. 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 Agency 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 Agency request for records during the course of a source inspection.
- 6. 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.

The following special conditions are not federally enforceable:

- 7. All reports, notifications, etc., required by this permit shall be sent to:

Illinois EPA  
Bureau of Air  
Compliance Unit (#39)  
P.O. Box 19276  
Springfield, Illinois 62794-9276

and

Illinois EPA  
Division of Air Pollution Control - Regional Office  
2009 Mall Street  
Collinsville, Illinois 62234

- 8. The VOM content of the as-applied fountain solution shall not exceed 8% by weight for all presses pursuant to 35 Ill. Adm. Code 215.408(b).
- 9. If there have been no exceedances during the prior calendar year, the Annual Emission Report shall include a statement to that effect.
- 10. The following standard conditions are not federally enforceable: Standard Conditions 3(a), 7, 8, 9, and 10.

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Please note that the printing press from Construction Permit #98090071 has been added to this permit.

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

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

DES:RBS:jar\8

cc: Region 3  
IEPA, Compliance Section  
USEPA  
PCF #4

Attachment A - Emission Summary

- 1a. Volatile organic material emissions from the printing presses as determined by the emission calculations specified in the permit:

<u>Operation</u>	<u>Emissions</u>	
	<u>(Ton/Month)</u>	<u>(Ton/Year)</u>
10 Presses	16.0	95.0

- b. Nitrogen oxide emissions from the natural gas fuel combustion units:

<u>Operation</u>	<u>Emissions</u> <u>(Ton/Year)</u>
Fuel Combustion Units	18.8

- c. Carbon monoxide emissions from the natural gas fuel combustion units:

<u>Operation</u>	<u>Emissions</u> <u>(Ton/Year)</u>
Fuel Combustion Units	15.8

- d. Particulate matter emissions from the paper trimming collection system have negligible emissions assumed to be 0.44 tons per year.

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