

**Review of State Air VOC Regulations Governing Lithographic Printing**

<b>State Agency - Area</b>	<b>Permitting Requirements</b>	<b>VOC Controls</b>	<b>Recordkeeping &amp; Reporting</b>
<p><b>Connecticut</b></p> <p>Bureau of Air Mgt. 165 Capitol Ave. Hartford, CT 06106 860/424/4152</p>	<p>Individual pieces of equipment with Potential VOC emissions equal to or greater than 15 tons/year require a permit.</p> <p>Sources are exempt from permit if air pollution control equipment is added making the process emissions less than 15 tons/year potential.</p> <p>Title V thresholds: 25 tons/yr potential VOC for Southwestern corner 50 tons/yr. potential VOC 10 tons/yr potential single HAP 25 tons/yr all HAPs</p> <p>Air toxics part of permit review process.</p>	<p>Case-by-case determination.</p>	<p>Depends upon size of facility. Can range from daily record keeping and monthly reporting to annual.</p>
<p><b>Delaware</b></p> <p>Department of Natural Resources Air Quality Management Section 156 South State Street Dover, DE 19901 Phone: (302) 739-9402</p>	<p>Presses with actual emissions before control less than 0.2 lbs/day are exempt.</p> <p>Presses with actual emissions before control less than 10 pounds per day requires registration.</p> <p>Title V thresholds: 25 tons/yr potential VOC for New Castle and Kent Counties 50 tons/yr. potential VOC 10 tons/yr potential single HAP 25 tons/yr all HAPs</p>	<p>Applies to any facility with more than 15 lbs/day actual VOC emissions before control.</p> <p>Heatset web dryers – Use control device that reduces emissions by 90%.</p> <p>Fountain Solution: Heatset web fountain solution - 1.6% or less IPA (vol.) or 3% or less IPA with refrigeration less than 60°F. Sheetfed presses - 3% or less IPA or 5% less IPA with refrigeration less than 60°F.</p> <p>Nonheatset web – no IPA</p> <p>All – Use alcohol substitute at no more than 30% by weight</p>	<p>Annual reporting for synthetic minors and Title V permitted sources.</p>

		Cleaning Solution: VOC content shall not exceed 30% by weight or VOC composite vapor pressure is less than 10 mmHg at 68°F	
State Agency - Area	Permitting Requirements	VOC Controls	Recordkeeping & Reporting
<p><b>Dist. of Columbia</b></p> <p>Environmental Health Administration Air Quality Division 51 N Street, NE, 5th Floor Washington, DC 20002 Phone: (202) 535-2257 Fax: (202) 535-1371</p>	<p>Permit to construct and operate required.</p> <p>Sources below 15 lbs/day actual VOC emissions are exempt.</p> <p>Air toxins review part of permit process</p> <p>Title V Threshold is 50 tons/yr. VOC potential.</p> <p>Title V thresholds: 50 tons/yr. potential VOC 10 tons/yr potential single HAP 25 tons/yr all HAPs</p>	<p>Individual presses emitting more than 3 lbs./hr or 15 lbs./day of photochemically reactive compounds are required to reduce them by 85%.</p> <p>Individual presses emitting more than 8 lbs./hr or 40 lbs/day of VOC are required to reduce them by 85%.</p> <p>Heatset presses required to Install an after burner with a 90% destruction efficiency.</p>	<p>Annual emission statements from all sources with potential VOC emissions over 50 tpy.</p> <p>Annual reporting for all permitted sources.</p>
<p><b>Maine</b></p> <p>Bureau of Air Quality Dept. of Env. Prot. State House Station 17 Augusta, ME 04333 Phone:207/287-7049</p>	<p>Sources that emit less than 10 lb./hr. or 100 lb./day VOC are exempt from licensing air toxics part of permit review process.</p> <p>Title V thresholds: 50 tons/yr. potential VOC 10 tons/yr potential single HAP 25 tons/yr all HAPs</p>	<p>Case-by-case determination</p>	<p>Licensed sources are required to report annually.</p>

State Agency - Area	Permitting Requirements	VOC Controls	Recordkeeping & Reporting
<p><b>Maryland</b></p> <p>Department of the Environment 1800 Washington Blvd Baltimore, MD 21230 Phone:410/537-3000</p>	<p>Permit required for each sheetfed presses with roller widths less than 18 inches are exempt from construction permit.</p> <p>Nonheatset web presses requires construction permit</p> <p>Heatset web printing presses requires construction and operating permit.</p> <p>Title V thresholds: 25 tons/yr potential VOC Baltimore/Wash area 50 tons/yr. potential VOC 10 tons/yr potential for single HAP 25 tons/yr all HAPs</p> <p>State air toxics part of permit review process.</p> <p>Sheetfed facilities can use General Permit, which eliminates individual press permitting and air toxics requirement and allows changes and press additions with minimal requirements.</p>	<p>Sheetfed presses must meet the following:</p> <ol style="list-style-type: none"> <li>1. For isopropyl alcohol in fountain solution, limit is 8.5 percent by weight, and refrigerates to less than 55°F.</li> <li>2. Keep VOC containing materials in closed containers</li> </ol> <p>Web presses at facilities with more than 100 lbs/day VOC emissions from all presses must meet the following:</p> <ol style="list-style-type: none"> <li>1. Reduce dryer exhaust VOCs by 90%.</li> <li>2. Use no isopropyl alcohol in the fountain solution.</li> </ol> <p>Sheetfed <b>facilities</b> can use General Permit, which requires the following:</p> <ol style="list-style-type: none"> <li>1. The facility uses 1,000 gallons or less of fountain solution concentrate per year;</li> <li>2. The facility does not use any clean- up solvent or fountain solution concentrate containing the following chemicals: (75-09-2) Methylene chloride or Dichloromethane (64741-41-9) Heavy aliphatic petroleum distillate (29911-28-2) Dipropylene glycol butyl ether</li> <li>3. For isopropyl alcohol in fountain solution, limit is 8.5 percent by weight, and refrigerates to less than 55°F.</li> <li>4. Keep VOC containing materials in closed containers</li> </ol>	<p>Annual reporting for all operating permitted sources.</p> <p>Annual emission statement for Title V facilities</p>

State Agency - Area	Permitting Requirements	VOC Controls	Recordkeeping & Reporting
<p><b>Massachusetts</b></p> <p>Dept. of Env. Protection One Winter St., 7th Floor Boston, MA 02108 Phone: 617/292-5873</p>	<p>All printers are required to complete the Printers Environmental Certification annually.</p> <p>Printers with Heatset or Non-conforming operations with actual emissions equal to or greater than 10 tons per rolling 12-month period must obtain permit through long form application.</p> <p>Sources that are not applicable to Printers Environmental Certification must comply with the following permit requirements:</p> <p>Sources with actual VOC emissions less than 1 ton/yr. are exempt.</p> <p>Sources with actual VOC emissions greater than or equal to 1 ton/yr. or less than 5 tons/yr. must file a short form application.</p> <p>Sources with actual VOC emissions greater than or equal to 5 tons/yr. must file long form application.</p> <p>Exemption for non-heatset printing operations constructed after July 1, 1992 if:</p> <p>a) Usage of all VOC materials is less than 670 gal./mo., or VOC emissions less than 2.5 tons/month. and</p> <p>b) Web fountain solution 1.6% or less IPA (vol.) pr 3% or less IPA with refrigeration less than 60 degrees F. sheetfed presses with cylinder widths greater than 21 in. use 3% or less IPA or 5% less IPA with refrigeration less than 60 degrees F. Sheetfed presses with cylinder widths less than or equal to 21 in. use 5% or less IPA. News use 0% IPA. VOC content of and additive (excluding IPA) 2.5% or less. Fountain solution mix tanks continuously covered. and</p>	<p>BACT required for all permit applications.</p> <p>Environmental Results Program established BACT for lithographic printing as:</p> <p>(a) Press Cleanup Solution must have VOC content <math>\leq</math> 30% by weight or have a composite vapor pressure <math>\leq</math> 10 mmHg.</p> <p>(b) Fountain Solution for Webfed presses must contain no alcohol.</p> <p>(c) Fountain Solution for Sheetfed presses must contain <math>\leq</math> 5% VOC unrefrigerated or <math>\leq</math> 8% refrigerated.</p> <p>(d) Postpress adhesives must have VOC content <math>\leq</math> 300 g/L (2.5 lbs/gal)</p> <p>Environmental Results Program established BACT for screen printing as:</p> <p>Cleanup solution standard: Cleanup solution used in screen printing shall meet the following standards, except that these standards do not apply to incidental materials:</p> <ol style="list-style-type: none"> <li>1. cleanup solution shall have a VOC composite partial pressure of 5.0 mmHg or less at 20E C(68EF),</li> <li>2. cleanup solution shall be kept in covered containers during transport and storage, and</li> <li>3. shop towels contaminated with cleanup solution shall be kept, when not in use, in covered containers.</li> </ol>	<p>Daily recordkeeping for sources with VOC emissions greater than 50 ton/yr. (metro Boston); monthly for others.</p> <p>Yearly reporting.</p>

--	--	--	--

State Agency - Area	Permitting Requirements	VOC Controls	Recordkeeping & Reporting
<p><b>Massachusetts (con't)</b></p>	<p>c) Cleanup solution VOC content shall not exceed 30% by weight. and  d) Records kept for three years. Includes daily % alcohol, VOC content of additive, temperature recorded once per shift. Monthly inventory of usage.</p> <p>Title V thresholds:  50 tons/yr. potential VOC  10 tons/yr potential single HAP  25 tons/yr all HAPs</p> <p>Air toxics policy may not be applicable to printers.</p>	<p>Midsized and large screen printing operations, as defined by the ERP, must use inks with no more than 300 grams per liter VOC for all applications except for:</p> <p>Extreme Performance Applications, a limit of 800 grams per liter was established; and</p> <p>Conductive Inks, a limit of 850 grams per liter was established.</p>	
<p><b>New Hampshire</b></p> <p>Dept. of Env. Services  Air Resource Div.  29 Hazen Drive  P.O. Box 95  Concord, NH 03302-0095  603/271-6793  Contact: Michele Andy</p>	<p>Sources with actual VOC emissions greater than or equal to 10 tons/yr must apply for temporary permit. Temporary permit applies for 18 months then source must obtain state operating permit (renewable every 5 years).</p> <p>Air toxics compliance determination required for all sources that use any of the 750 compounds on the list.</p> <p>Title V Threshold is 50 tons/yr. (potential) VOC.</p>	<p>Sources with potential VOC emissions greater than 50 tons/yr. must produce emissions.</p>	<p>Permitted sources must submit either annual or triannual reports.</p>
<p><b>New Jersey</b></p> <p>NJDEP  Air Quality Permitting Program  Bureau of Preconstruction Permits  P.O. Box 027  Trenton, NJ 08625-0027  Phone: (609) 633-2829  Fax: (609) 633-8236</p>	<p>Any press using more than one half gallon per hour of ink, fountain solution, and cleaning solution.</p> <p>Title V thresholds:  25 tons/yr potential VOC  10 tons/yr potential single HAP  25 tons/yr all HAPs</p>	<p>Any press with potential VOC emissions greater than 5 tons/yr must undergo State of the Art Technology Assessment (SOTA). SOTA guide for printing and requires:</p> <p>Sheetfed –  Inks and varnish - No level.  Coating - 2.5 lbs VOC/gal less H<sub>2</sub>O  Fountain Solution - 5.0% VOC by weight (no alcohol) or  Fountain Solution - 8.5% VOC by weight (alcohol) and  Chiller Temperature # 60°F</p>	<p>Annual report required for any facility with more than 10 tons/yr potential VOC emissions.</p> <p>Annual emission statement for Title V facilities.</p>

		For Folding Box Manufacture:	
		Adhesive - 1.25 lbs VOC/gal less H <sub>2</sub> O (Used on gluing lines. Not applied on the press.)	

State Agency - Area	Permitting Requirements	VOC Controls	Recordkeeping & Reporting
New Jersey (con't)		<p>Nonheatset Web –  Inks - No level.  Fountain solution - 5.0% VOC by weight (No alcohol)  Cleaning - 30.0% VOC by weight or 100% VOC by weight if VOC composite vapor pressure 10 mm Hg at 20°C (68°F)  Coating - 2.5 lbs VOC/gal less H<sub>2</sub>O</p> <p>Heatset Web –  Add-on controls with the following performance levels:</p> <p>Capture Efficiency: 100 percent (If no in-line finishing is performed, the use of add-on controls on the dryer exhaust is considered 100 percent capture.)</p> <p>DRE for Oxidizers: 99 percent design and 95 percent demonstrated or outlet VOC concentration # 20 ppmv (excluding methane)</p> <p>DRE for Other Types of Control Devices: 95 percent or outlet VOC concentration # 20 ppmv</p> <p>Coating - 2.5 lbs VOC/gal less H<sub>2</sub>O  Fountain Solution - 1.6% VOC by weight; or 3.0% VOC by weight with Chiller Temperature 60°F; or 5.0% VOC by weight if no alcohol is used.</p> <p>If in-line finishing (post dryer) is used, emissions must be controlled by one of the following:</p> <p>1) Average VOC content limit of 2.5 lbs/gal VOC (less water) for coating and other in-line finishing materials, or</p>	



State Agency - Area	Permitting Requirements	VOC Controls	Recordkeeping & Reporting
<p><b>New Jersey (con't)</b></p>		<p>2) Capture and control system achieving 100 percent capture of the emissions and using add-on controls with the specifications listed above for oxidizers or other types of control devices.</p> <p>For Screen Printing applications, facilities must use inks that fall within these categories. The ink systems are referenced by substrates and applications:</p> <p>Fabric: 2.9 lbs VOC/gal less H2O            Printing inks: 3.3 lb VOC/gal less H2O            Metallic ink :3.3 lb VOC/gal less H2O            Coating: 3.3 lb VOC/gal less H2O            Adhesive: 3.3 lb VOC/gal less H2O            Extreme performance ink/coating: 6.7 lb VOC/gal less H2O</p>	
<p><b>New York</b></p> <p>NYSDEC            Bureau of Stationary Sources            625 Broadway, 2nd Floor            Albany, NY 12233-3254</p> <p>Phone: 518-402-8403            Fax: 518-402-9035</p>	<p>Any facility emitting less than 20 lbs/day of VOC is exempt in Upstate New York</p> <p>Any facility emitting more than 20 lbs/day and under 25 tons/yr VOC, 5 tons/yr single HAP, and 12.5 tons/yr all HAPs requires Registration.</p> <p>Any printer in NY City is requires Registration up to 12.5 tons/yr VOC, 5 tons/yr single HAP, and 12.5 tons/yr all HAPs then permit is required.</p> <p>Title V thresholds:            25 tons/yr potential NY City            50 tons/yr potential VOC            10 tons/yr potential single HAP            25 tons/yr all HAPs</p>	<p>Rule 234 applies to any facility in Upstate NY with potential emissions greater than 50 tons/yr. Rule 234 applies to any facility in NY City.</p> <p>Rule 234 requires:</p> <ol style="list-style-type: none"> <li>1. Heatset press dryer exhaust to be reduce VOCs by 90%.</li> <li>2. All press fountain solutions to use VOC at less than 10% by weight.</li> </ol> <p>Rule 234 requires screen printing operations to use inks with no more than 3.3 pounds of VOC per gallon for all applications, with the exception of serigraphs, for which a level of 5 pounds of VOC per gallon is allowed.</p>	<p>Annual report required for any facility with state permit.</p> <p>Annual emission statement for Title V facilities</p>

State Agency - Area	Permitting Requirements	VOC Controls	Recordkeeping & Reporting
<p><b>Pennsylvania</b></p> <p>PADEP Bureau of Air Quality Rachel Carson State Office Building 12th Floor, P.O. Box 8468 Harrisburg, PA 17105-8468 Phone: (717) 787-9702 Fax: (717) 772-2303</p>	<p>Any press actually emitting less than:</p> <p>2.7 tpy VOC 1 tpy single HAP 2.5 tpy all HAPs</p> <p>is exempt and if the entire facility actually emits less than 8 tons/yr of VOC</p> <p>Title V thresholds: 50 tons/yr. potential VOC 10 tons/yr potential single HAP 25 tons/yr all HAPs</p>	<p>Any press exceeding press thresholds must under Best Available Control Technology review. BACT set in general permits and requires:</p> <p>Fountain Solution:</p> <p>Web fountain solution - 1.6% or less VOC by weight or 3% by weight or VOC with refrigeration less than 60°F.</p> <p>Sheetfed presses - 3% or less VIC by weight or 5% or less VOC by weight with refrigeration less than 60°F.</p> <p>Cleaning Solution:</p> <p>VOC content shall not exceed 30% by weight or VOC composite vapor press is less than 10 mmHg at 68°F</p> <p>110 gallons of solvent not meeting limits allowed per year.</p> <p>Heatset web press permit proposed.</p>	<p>Annual report required for any facility with more than 10 tons/yr VOC emissions or for any source deemed necessary to report by PADEP.</p>
<p><b>Rhode Island</b></p> <p>Division of Air 235 Promenade Street Providence, RI 02908-5767 401/277-2808 Contact: Douglas McVay</p>	<p>Sources emitting less than 10 lb./hr. or 100 lb./day VOC. Emissions are exempt.</p> <p>Specific list of air toxics with emission limits. (example, Ethylene Glycol: 400 lbs/yr).</p> <p>Any air pollution control device.</p> <p>Title V thresholds: 50 tons/yr. potential VOC 10 tons/yr potential single HAP 25 tons/yr all HAPs .</p>	<p>BACT applies to all permitted sources and requires 85% reduction.</p>	<p>Annual Emission statements for all permitted sources.</p>

State Agency - Area	Permitting Requirements	VOC Controls	Recordkeeping & Reporting
<p><b>Vermont</b></p> <p>Air Pollution Control Div.  Agency of Natural Res.  103 S. Main Street  Waterbury, VT 05671-0402  802/241-3846  Contact: Jennifer Bryan</p>	<p>All new sources must contact ANR for case-by-case determination.</p> <p>Sources that emit more than 5 tons/yr. (actual) VOCs require registration.</p> <p>Sources with potential VOC emissions greater than 50 tons/yr. require permit.</p> <p>Specific list of air toxics whose release requires review.</p> <p>Title V thresholds:  50 tons/yr. potential VOC  10 tons/yr potential single HAP  25 tons/yr all HAPs</p>	<p>Case-by-case determination</p>	<p>Annual emission statements for permitted and some registered sources.</p>
<p><b>Virginia</b></p> <p>Department of Environmental Quality  629 East Main Street, 8th Floor  Richmond, Virginia 23219  Phone: (804) 698-4000  Fax: (804) 698-4510</p>	<p>New greenfield sources with potential VOC emissions less than 25 tons/yr are exempt.</p> <p>Existing operations that add presses or modify presses resulting in net potential increases of VOC less than 10 tons/yr are exempt.</p> <p>Air Toxics – Chemical by chemical analysis</p> <p>Title V thresholds:  25 tons/yr potential VOC Wash DC area  50 tons/yr. potential VOC  10 tons/yr potential single HAP  25 tons/yr all HAPs</p>	<p>Sources exceeding permit thresholds must undergo Best Available Control Technology review.</p>	<p>All permitted facilities are required to submit annual consumption information.</p> <p>Annual emission statements for major sources in nonattainment area.</p>