

**New York State's Air Pollution Control Regulations for Stand-Alone
Printing Cleaning Equipment**

Table of Contents

Introduction	3
What Does Rule 226 Require?.....	3
What Does Rule 234 Require?.....	4
Which Printing Facilities Need to Follow Rule 234?.....	Error! Bookmark not defined.
What Are the Control Requirements for Flexographic and Rotogravure Operations?	4
What Are the Control Requirements for Screen Printing Operations?	5
What Are the Requirements for Handling, Storage and Disposal of VOCs?.....	6
An owner or operator of a facility subject to this Part shall not:	6
What are Recordkeeping Requirements?	Error! Bookmark not defined.
Where Can I Get More Information?	7

Introduction

In November of 2019, the New York State Department of Environmental Conservation (NYSDEC) promulgated amendments to its regulation addressing the volatile organic compound (VOC) emissions from solvent cleaning operations. The rule, Rule 226 Solvent Cleaning Processes and Industrial Cleaning Solvents, sets out requirements for a variety of solvent cleaning activities such as cold cleaners, including parts washers.

There are several stand-alone cleaning devices used in the printing industry that are used to clean screens in the screen printing segment of the printing industry and flexographic plates, flexographic plates mounted to cylinders, anilox rolls, ink and press components such as coating application components, ink, and coating trays, etc. found in the flexographic and rotogravure segments. The concern of the printing industry is that if the NYSDEC determined that the limit on the cleaning solution that can be used in cold cleaners in Rule 226 was applied to these stand-alone cleaning units, they would become obsolete as the limit is very stringent and no formulations of cleaning solutions can be made to meet the requirements.

Because these cleaning units are integral to the production process, they should be regulated under the NYSDEC's Graphic Arts rule, Rule 234. The primary reasons are that these stand-alone systems are dedicated and differ significantly from a traditional "cold cleaner" from several respects. They are highly engineered sophisticated cleaning devices that are designed to provide a specific cleaning activity necessary for the proper functioning of the printing press in the way they are designed to operate. These stand-alone units cannot and should not be used for degreasing machine or other components.

If grease or materials other than ink or coating were introduced into the unit, it would cause performance issues with the design of the cleaning solution delivery system. The purpose of these stand-alone units is to remove either ink or coating from the press components, which are not grease or protective films that are applied to materials to lubricate or protect machine parts from rusting.

Therefore, an interpretation of applicability was required and the NYSDEC was approached about this issue in December of 2020. After several exchanges of correspondence and conference calls, a letter of interpretation was issued on July 6, 2021. The letter states that the stand-alone equipment referenced above is covered by Rule 234, Graphic Arts, and not Rule 226, Industrial Cleaning.

What Does Rule 226 Require?

Due to the November 1, 2019 amendments, the former Part 226 was re-designated as Subpart 226-1 and renamed "Solvent Cleaning Processes". Updates under adopted Subpart 226-1 were based on the Ozone Transport Commission's (OTC) 2012 Model Rule for Solvent Degreasing to implement federal guidelines aimed at reducing volatile organic compounds (VOCs) emitted by solvent cleaning processes.

Subpart 226-1 requires owners and operators of facilities that operate cold cleaners, open-top degreasers, and all types of conveyORIZED degreasers that carry out solvent cleaning processes to comply with various equipment specifications and control and operating requirements. The 2019 revisions expanded certain requirements to facilities that carry out solvent cleaning processes on metal objects.

After December 1, 2020, the rule also applies to the cleaning of all non-metal objects. The revised rule also lowers the VOC content of cleaning solution to a maximum of 25 grams per liter at 20 degrees Celsius and eliminated the optional vapor pressure limit for facilities using cold cleaning degreasing with an internal volume greater than two gallons, unless using an exempted degreaser as identified under

section 226-1.4(a)(4)(i) - (iii) or under section 226-1.7. In addition, owners and operators may seek a process specific RACT demonstration under section 226-1.6 as an alternative to compliance.

Due to COVID-19, the NYSDEC extended the deadline for compliance until [December 1, 2021](#). Facilities subject to revised Subpart 226-1 must comply with the new requirements by December 1, 2021.

What Does Rule 234 Require?

The most recent set of revisions to Part 234, Graphic Arts, became effective on July 8, 2010. Changes to the regulations apply to all lithographic, letterpress, rotogravure, flexographic, and screen printing operations in New York State. Part 234 sets emission limits and other requirements for VOC emissions from printing operations. Digital printing operations were exempt from Part 234.

Which Printing Facilities Need to Follow Rule 234?

All printing facilities located in severe ozone non-attainment areas and facilities with actual VOC emissions of greater than 3 tons per year on a 12-month rolling are required to meet all the requirements in Rule Part 234.

Printing facilities located outside a severe ozone non-attainment area with actual VOC emissions less than 3 tons per year on a 12-month rolling basis are subject to only some sections of Part 234. Those requirements include Part 234.6 Handling storage and disposal of VOC; 234.7 Recordkeeping; and 234.8 Opacity.

Operations or activities that are completely exempt from the rule are as follows:

- Digital printing presses
- Screen printing processes that only use conductive ink to produce electronic circuits that permit electric current flow through the printed line or pattern
- Screen printing processes that only use sterilization indicating ink to monitor the sterilization of medical instruments, autoclave efficiency, and the thermal processing of foods for the prevention of spoilage
- Proof presses
- The use of specialty ink, coating or adhesive where the facility's total actual annual usage of all specialty ink, coating and adhesive is no more than 55 gallons, on a 12-month rolling basis, provided that each specialty ink, coating and adhesive excluded from the requirements are recorded in accordance with section 234.7 of this Part.

What Are the Control Requirements for Flexographic and Rotogravure Operations?

A packaging rotogravure, publication rotogravure, or flexographic printing process that uses ink, coating or adhesive containing VOC shall not operate if it: is located in a severe ozone non-attainment area; has an annual potential to emit VOC of 25 tons per year or more; or is located in a facility that has an annual potential to emit VOC of 50 tons per year or more, unless the printing process uses one of the following strategies to control VOCs:

- (i) ink, coating, or adhesive with low VOC content equal to or less than:

(a) 0.8 kilogram of VOC per kilogram of solids as applied (0.8 kg VOC/ kg solids as applied); or

(b) 0.16 kilogram of VOC per kilogram of ink, coating and adhesive as applied (0.16 kg VOC/ kg material as applied);

VOC content limits can be met by averaging the VOC content of materials used on a single press (*i.e.*, within a line);

(ii) a capture system and control equipment that provides for overall removal efficiency of at least:

(a) 75 percent for a publication rotogravure printing process, unless a higher overall removal efficiency is required by clause (e) of this subparagraph;

(b) 65 percent for a printing process that was first installed prior to March 14, 1995, and that is controlled by an add-on capture system and air cleaning equipment that was first installed prior to the effective date of this regulation;

(c) 70 percent for a printing process that was first installed prior to March 14, 1995, and that is controlled by an add-on air capture system and air cleaning equipment that was first installed on or after the effective date of this regulation;

(d) 75 percent overall removal efficiency for a printing process that was first installed on or after March 14, 1995, and that is controlled by an add-on capture system and air cleaning equipment that was first installed prior to the effective date of this regulation;
or

(e) 80 percent for a printing process that was first installed on or after March 14, 1995, and that is controlled by an add-on capture system and air cleaning equipment that was first installed on or after the effective date of this regulation.

Radiation cured material via ultra-violet light or electron beam printing processes are not subject to the control requirements of this subdivision.

The rule contains a section (Part 234.4) that contains details about what tests need to be performed to determine the VOC content of inks, coatings, and other materials, demonstrate compliance with the requirements in (ii), and if an add-on control (e.g., oxidizer) is being used, what parameters need to be monitored.

What Are the Control Requirements for Screen Printing Operations?

A screen printing process that uses ink, coating or adhesive containing VOC shall not operate if it is located in a severe ozone non-attainment area, or is located in a facility that has an annual potential to emit VOC of 50 tons per year or more, unless the printing process uses one of the following strategies to control VOC:

(i) the maximum permitted pounds of VOC per gallon of ink, coating or adhesive, minus water and excluded compounds, at application is:

(a) 3.3 pounds as applied to paper, glass, metal, plastic, vinyl, reflective sheeting, textile/imprinted garments or pressure sensitive decals; or

(b) 5 pounds as applied for serigraph;

(ii) a capture system and control equipment that provides a minimum overall removal efficiency of 80 percent.

Screen printing ink, coating or adhesive which is applied by a hand-held squeegee (a squeegee that is not propelled through the use of mechanical conveyance and is not an integral part of the screen printing process) are not subject to the control requirements of this subdivision.

The rule contains a section (Part 234.4) that contains details about what tests need to be performed to determine the VOC content of inks, coatings, and other materials, demonstrate compliance with the requirements in (ii), and if an add-on control (e.g., oxidizer) is being used, what parameters need to be monitored.

What Are the Requirements for Handling, Storage and Disposal of VOCs?

An owner or operator of a facility subject to this Part shall not:

- Use open containers to store or dispose of cloth or paper impregnated with VOC or solvents that are used for surface preparation, cleanup or the removal of ink, coating or adhesive.
- Use open containers to store or dispose of spent or fresh VOC or solvents used for surface preparation, cleanup or the removal of ink, coating or adhesive.
- Use open containers to store, dispose or dispense ink, coating or adhesive unless production, sampling, maintenance or inspection procedures require operational access. This provision does not apply to the actual device or equipment designed for the purposes of applying an ink, coating or adhesive to a substrate.

What are Recordkeeping Requirements?

The rule requires that printing operations, unless specifically exempt, must keep a variety of records to show that the applicable provisions of the rule are being met. The following records are required to be maintained:

- Purchase, use, and production records of ink, coating, adhesive, VOCs, solvent, fountain solution and cleaning material must be maintained in a format acceptable to the department, and upon request, submitted to the department. Any other information required to determine compliance with this Part must be provided to the department in an acceptable format. Records must be maintained at the facility for five years.
- The results of an analysis or other procedure used to establish compliance with this Part must be provided to the department.
- The owner or operator of a graphic art facility which is not subject to the control requirements of this Part because its annual potential to emit VOC or its total actual VOC emissions, whichever applies is below the applicability criteria, must maintain records in a format acceptable to the department that verify the facility's annual potential to emit VOC or its total actual VOC emissions. Upon request, these records must be submitted to the department.

Where Can I Get More Information?

The regulatory language for the two rules can be found at the following links:

- [Part 226 Solvent Cleaning Processes and Industrial Cleaning Solvents](#)
- [Part 234 Graphic Arts](#)

You can also contact Printing United Alliance's Government Affairs Department by emailing Marci Kinter at mkinter@printing.org or Gary Jones at gjones@printing.org.