



**Air Pollution Control Board**

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December 2, 2010

## **NOTICE OF WORKSHOP**

### **FOR DISCUSSION OF PROPOSED AMENDMENTS TO RULE 67.16 – GRAPHIC ARTS OPERATIONS, AND RELATED CHANGES TO RULE 11 – EXEMPTIONS FROM RULE 10 PERMIT REQUIREMENTS**

The San Diego Air Pollution Control District (District) will hold a public workshop to discuss proposed amendments to Rule 67.16 – Graphic Arts Operations, and related amendments to Rule 11 – Exemptions from Rule 10 Permit Requirements. Comments or questions may be submitted in writing before or made at the workshop, which is scheduled as follows:

**DATE:**            **Thursday, January 13, 2011**

**TIME:**            **10:00 a.m. to 12:00 Noon**

**PLACE:**            **San Diego Air Pollution Control District  
Main Conference Room  
10124 Old Grove Road  
San Diego, CA 92131**

Air quality in San Diego County has substantially improved over the past two decades due to comprehensive efforts to reduce air pollutant emissions. Nevertheless, State and federal air quality standards for ozone are not met in the region. Consequently, emissions of air pollutants that form ozone, including volatile organic compounds (VOCs), must be reduced. State and federal laws require the District to update its rules to control VOC emissions from stationary sources as control technologies improve or control costs are reduced.

Existing Rule 67.16 regulates VOC emissions from graphic arts operations and has not been updated since 1996. The District is now proposing to amend the rule reflecting the availability of materials with lower VOC emissions for graphic arts operations, and to implement control technique guidelines established by U.S. Environmental Protection Agency in 2006.

In summary, the proposed amendments will:

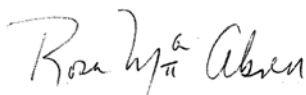
- Reduce the VOC content limit for fountain solutions to 5% VOC by volume;
- Prohibit the use of fountain solutions containing alcohol;

**OVER**

- Reduce the VOC content limit for cleaning materials to less than 100 grams/liter, although this limit does not apply if the composite VOC vapor pressure is 5 mm Hg or less at 20°C;
- Include new or revised definitions including definitions for digital printing operations;
- Exempt digital printing operations from Rule 67.16, provided that specified records are maintained for commercial operations of certain print capacity; and
- Update the test methods for determining VOC content and VOC vapor pressure of graphic arts and cleaning materials and the overall control efficiency of emission control systems.

In conjunction with the proposed amendments to Rule 67.16, the District also proposes to amend Subsection (d)(11) of current Rule 11 (Exemptions from Rule 10 Permit Requirements). The amendments will state that air quality permits are not required of digital printing operations of specified print capacity, provided that records required by the proposed amended Rule 67.16 are maintained.

The District requests that workshop participants bring their own copies of proposed amended Rules 67.16 and 11. Copies may be downloaded from the District's website at [http://www.sdapcd.org/homepage/public\\_part/workshops/public\\_workshops.pdf](http://www.sdapcd.org/homepage/public_part/workshops/public_workshops.pdf). Those without internet access may contact Janet McCue at (858) 586-2712. If you have any questions concerning the proposal, please contact Angela Durr at (858) 586-2753, Natalie Yates at (858) 586-2756 or Robert Reider at (858) 586-2640.



ROSA MARIA S. ABREU, Assistant Director  
Air Pollution Control District

RMA:RR:jlm

**RULE 11. EXEMPTIONS FROM RULE 10 PERMIT REQUIREMENTS**

(Effective 1/1/69: Rev. Adopted & Effective 10/17/95  
Rev. Adopted & Effective 7/30/96  
Rev. Adopted & Effective 5/21/97  
Rev. Adopted & Effective 11/15/00  
Rev. Adopted & Effective 4/25/07

Rev. Adopted & Effective (date of adoption)

**(11) PRINTING AND REPRODUCTION EQUIPMENT**

(i) Any graphic arts operation or group of graphic arts operations located at a stationary source, that emit less than an average of 15 pounds of VOCs per operating day for each calendar month from all such operations. All records necessary to calculate average daily VOC emissions, such as emission factors or mix ratios, VOC content of each material used, number of operating days per month, and daily or monthly records of material usage, shall be maintained on-site for 3 years and be made available to the District upon request.

(ii) Inkjet and laser printing equipment.

(iii) Digital printing equipment as defined in Rule 67.16 with a print capacity less than 1000 ft<sup>2</sup>/hr which uses solvent based inks, or such equipment with a print capacity less than 10,000 ft<sup>2</sup> which uses water based or UV inks.

(iv) Digital printing equipment as defined in Rule 67.16 with a print capacity of 1000 ft<sup>2</sup>/hr or higher which uses solvent based inks, or such equipment with a print capacity of 10,000 ft<sup>2</sup>/hr or higher which uses water based or UV inks, provided that the records specified in Rule 67.16 (f) (4) are maintained.

~~(iii)~~ (v) Ink cartridge filling, refilling, and/or refurbishing operations.

**RULE 67.16. GRAPHIC ARTS OPERATIONS** (Effective 10/18/88;

Rev. Adopted & Effective 5/15/96; Amended (date of adoption) & Effective (6 months after date of adoption)

(a) **APPLICABILITY**

(1) This rule is applicable to all continuous web or single sheet fed graphic arts printing, processing, laminating or drying operations and digital printing operations.

(2) This rule is not applicable to printing operations on ceramic or circuit boards.  
These operations are subject to Rule 66.1.

(23) Graphic arts ~~operations~~ subject to or exempt from this rule shall not be subject to Rule 66.1 or Rule 67.5.

(b) **EXEMPTIONS**

(1) The provisions of Sections (d) and (e) of this rule shall not apply to stationary sources which emit less than an average of 15 lbs (6.8 kg) of volatile organic compounds (VOCs) from all graphic arts operations per day of operation for each calendar month. It is the responsibility of any person claiming ~~an~~ this exemption ~~pursuant to Subsection (b)(1)~~ to maintain daily or monthly records as specified in Section (f) of this rule necessary to establish average daily emissions and to make this information available to the District upon request. The average daily emission levels shall be determined by recording and taking into account the number of operational days per given month.

(2) The provisions of Sections (d) and (e) shall not apply to large digital printing operations provided that any facility claiming this exemption maintains applicable records as specified in Subsection (f) (4).

(23) The provisions of Sections (d), (e), and (f) of this rule shall not apply to:

(i) All proofing systems.

- (ii) Manufacture of:
  - (A) Solar control window film,
  - (B) Heat applied transfer decals,
  - (C) Ceramic decals manufactured for firing above 800°F, or
  - (D) Water slide decals.

~~(iii) Printing on ceramic or circuit boards.~~

~~(viii)~~ Embossing and foil stamping which do not use materials containing VOCs.

~~(v) Coating operations subject to Rule 67.5, Paper, Film and Fabric Coating Operations.~~

~~(xiv)~~ Development process associated with the preparation of lithographic printing plates.

~~(v)~~ Blanket repair material applied from non-refillable aerosol containers of four ounces or less.

(vi) Digital printing operations that are not large operations as defined in Subsection (c)(12).

(c) **DEFINITIONS** ~~(Rev. Effective 5/15/96)~~

For the purpose of this rule the following definitions shall apply:

(1) “Cleaning Material” means a VOC containing material used for cleaning hands, tools, printing presses, ink or coating application equipment and work area.

(2) "Coating" in the graphic arts operation means a layer of material applied to a substrate in a relatively unbroken film.

(3) “Digital Printing Operation” means an operation that uses a printing device guided by a computer-driven machine to transfer an electronic image to a substrate through the use of inks, toners, or other graphic arts materials. Digital printing operation also

includes associated surface preparation, solvent cleaning, and the cleaning of application equipment.

(24) "**Exempt Compound**" means the same as defined in Rule 2.  
(Rev. Effective 5/15/96)

(35) "**Exterior Marking**" means any outdoor sign printed, coated or laminated by any of the graphic arts methods.

(46) "**Flexographic Printing**" means a letterpress method utilizing flexible rubber or other elastomeric plate.

(57) "**Fountain Solution**" means the solution which is applied to the image plate to maintain the hydrophilic properties of the non-image areas.

(68) "**Graphic Arts Operations**" means all screen, gravure, letterpress, flexographic, ~~and lithographic~~ and digital printing processes operations, or related coating, or laminating processes including coating of flexible packaging materials for food or health care products and laboratory or experimental processes.

(79) "**Graphic Arts Line**" means printing application equipment, coating equipment, laminating equipment, flash-off areas, ovens, conveyors or other equipment operating in an uninterrupted series to produce graphic arts using graphic art materials.

(810) "**Graphic Arts Material**" means any ink, coating, adhesive, ~~fountain solutions,~~ or thinners, or retarders used in printing or related coating or laminating processes.

(911) "**Gravure Printing**" means an intaglio process in which the ink is carried in minute etched or engraved wells on a roll or cylinder, with excess ink being removed from the surface by doctor blade.

(12) "**Large Digital Printing Operation**" means ~~commercial~~ a digital printing operation with an equipment print capacity of 1,000 ft<sup>2</sup>/hr or higher which uses solvent based inks, or an operation with an equipment print capacity of 10,000 ft<sup>2</sup>/hr or higher which uses water based or UV inks.

(4013) "**Lamination**" means a process of composing two or more layers of material to form a single multiple layer sheet by using adhesive.

(414) "**Letterpress Printing**" means a method where the image area is raised relative to the non-image area and the ink is transferred to the paper directly from the image surface.

(425) "**Lithographic Printing**" means a plane-o-graphic method in which the image and non-image areas are on the same plane, and the ink is offset from a plate to a rubber blanket, and then from the blanket to the substrate.

(436) "**Printing**" means any operation that imparts color, design, alphabet or numerals on a substrate.

(447) "**Printing Ink**" means any fluid or viscous composition used in printing, impressing or transferring an image onto a substrate.

(458) "**Proofing System**" means a system used only to check the quality or print color reproduction and editorial content and includes proof presses and/or off-press proofing lines.

(469) "**Publication Gravure**" means a gravure printing on paper substrate which is subsequently used to form books, magazines, catalogues, brochures, directories, and newspaper supplements or other printed material.

(4720) "**Screen Printing**" means a process where the printing ink passes through a web or a fabric to which a refined form of stencil has been applied. The stencil openings determine the form and dimensions of imprint.

(4821) "**Stationary Source**" means the same as is defined in Rule 204.

(22) "Thinner" means a solvent used to reduce viscosity of printing inks.

~~(4923) "**Volatile Organic Compound (VOC)**" means the same as defined in Rule 2. for the purpose of this rule means any volatile compound containing at least one atom of carbon, excluding methane, carbon monoxide, carbon dioxide, carbonic acid, ammonium carbonate, metallic carbides and carbonates, and exempt compounds which may be emitted to the atmosphere during the application of and/or subsequent drying or curing of graphic arts materials or cleaning materials subject to this rule.~~

(24) "**VOC Content per Volume of Graphic Arts Materials, Less Water and Exempt Compounds**" (excluding thinners) means the same as defined in Rule 2, "VOC Content per Volume of Coatings, Less Water and Exempt Compounds."

(25) "VOC Content per Volume of Thinner or Cleaning Material" means the same as defined in Rule 2, "VOC Content per Volume of Material."

(2026) "Web-fed" means an automatic system which supplies substrate from a continuous roll or from an extrusion process.

(d) **STANDARDS**

(1) Graphic Arts Materials and Fountain Solutions.

A person shall not ~~conduct~~ ~~operate~~ any printing or graphic arts operation ~~process~~ unless:

(i) Only graphic arts materials containing less than 300 grams of VOC per liter (2.5 lbs/gal) as applied, less water and exempt compounds are used; and

(ii) Only fountain solutions containing not more than 5% VOC ~~15%~~ by volume, ~~as applied, and no alcohols~~ are used.

(2) Cleanup of Equipment

A person shall not use materials containing VOCs for the cleanup of equipment used in graphic arts operations unless:

(i) The cleaning material solvent has a VOC content of less than 100 ~~200~~ grams per liter ~~of material~~; or

(ii) The total VOC vapor pressure of the cleaning material is ~~45~~ 5 mm of Hg at 20°C or less; ~~or~~

~~(iii) A system is used that totally encloses the component parts being cleaned during the washing, rinsing, and draining processes; or~~

~~(iv) The cleaning solvent is transferred through the application equipment, without exposure to air, into a container which has in place an apparatus or cover which completely covers the container and has no visible holes, breaks, openings or separations between adjoining components of the container or container cover.~~



~~Containers may be equipped with vents provided such vents are necessary to comply with applicable fire and safety codes.~~

(e) **CONTROL EQUIPMENT**

(1) In lieu of complying with the provisions of Subsection (d)(1) or (d)(2), a person may use an air pollution control system which:

(i) Has been installed in accordance with an Authority to Construct; and

(ii) Includes an emission collection system which captures and transports ~~organic gaseous~~ emissions generated by graphic arts operations to an air pollution control device; and

(iii) Has a combined VOC emissions capture and control device efficiency of at least 85 percent by weight.

(2) A person subject to the requirements of this section shall submit to the Air Pollution Control Officer for approval an Operation and Maintenance (O&M) plan for the proposed emission control device and emission collection system. Such plan shall:

(i) Identify all key system operating parameters. Key system operating parameters are those necessary to ensure compliance with Subsection (e)(1)(iii), such as temperature, pressure, and/or flow rate.

(ii) Include proposed inspection schedules, anticipated ongoing maintenance, and proposed recordkeeping practices regarding the key system operating parameters.

(3) The Operation and Maintenance plan must be submitted to the Air Pollution Control Officer and receive written approval prior to operation of the air pollution control equipment. A person subject to the requirements of this section shall implement the plan on approval of the Air Pollution Control Officer.

(f) **RECORDKEEPING**

Any person conducting ~~applying a~~ graphic arts operation subject to this rule ~~materials~~ shall maintain records in accordance with the following requirements:

(1) Maintain a current list of graphic arts materials, fountain solutions and cleaning materials used containing VOCs ~~such as inks, adhesives, thinners, retarders, fountain~~

~~solutions and cleaning materials in use~~ which provides data necessary to evaluate compliance, including, but not limited to:

(i) Type of graphic arts materials, fountain solutions or cleaning materials used;

(ii) Dilution ratio of mixed components, if applicable;

(iii) VOC content, less water and exempt compounds and/or vapor pressure of each graphic arts material (excluding thinner), as applied; volume percent of VOC in fountain solution; and VOC content of each thinner and cleaning material and/or total VOC vapor pressure, as ~~used~~ applied.

(2) Maintain daily or monthly records showing the amount of each graphic arts material, and each fountain solution and cleaning material used ~~including, but not limited to, inks, adhesives, thinners, retarders, fountain solutions, and cleaning solutions~~.

(3) Any person using control equipment pursuant to Section (e) of this rule shall:

(i) For all graphic arts materials, fountain solutions and cleaning materials not in compliance with Subsection (d)(1) or (d)(2) of this rule, maintain daily records of the amount of each material used; and

(ii) Maintain daily records sufficient to document continuous compliance with Subsection (e)(1)(iii), including records of key system operating parameters as approved in the Operation and Maintenance plan.

(4) Any person claiming an exemption pursuant to Subsection (b)(2) for large digital printing operations shall:

(i) Maintain a current list of graphic arts materials and cleaning materials used;

(ii) Provide documentation containing the VOC content, less water and exempt compounds of each graphic arts material (excluding thinner), as applied and the VOC content of each thinner and cleaning material and/or total VOC vapor pressure, as used;

(iii) Keep monthly records of the type and amount of each graphic arts material and cleaning material used.

~~These~~ All records shall be retained on site for at least three years and shall be made available to the District upon request.

(g) **TEST METHODS**

When more than one test method or set of test methods are specified in this Section, a violation of any requirement of this rule established by any one of the specified test methods or set of test methods shall constitute a violation of this rule.

(1) Measurements of VOC content of graphic arts materials subject to Section (d) of this rule shall be conducted and reported in accordance with the Environmental Protection Agency (EPA) Test Method 24 (40 CFR 60, Appendix A) or by the South Coast Air Quality Management District (SCAQMD) Method 304 as they exist on (date of adoption) September 20, 1994, and ASTM Test Method D 4457-85 for determination of dichloromethane and 1,1,1-trichloroethane in paints and coatings by direct injection into a gas chromatograph.

(2) Measurements of VOC content of rotogravure publication inks subject to Section (d) of this rule shall be conducted and reported in accordance with EPA Test Method 24A (40 CFR 60, Appendix A) as it exists on (date of adoption) September 20, 1994, and ASTM Test Method D 4457-85 for determination of dichloromethane and 1,1,1-trichloroethane in paints and coatings by direct injection into a gas chromatograph.

~~(3) Measurements of VOC emissions subject to Section (e) of this rule shall be conducted in accordance with EPA Methods 18, and 25 or 25A (40 CFR 60, Appendix A)~~

~~as they exist on (date of adoption) September 20, 1994. Test procedures shall be performed in accordance with a protocol approved by the Air Pollution Control Officer.~~

(3) The VOC content of cleaning materials shall be determined by the SCAQMD Method 313 (Determination of Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry), or SCAQMD Method 308 (Quantification of Compounds by Gas Chromatography) as they exist on (date of adoption).

~~(4) Measurements~~ Calculations of total VOC vapor pressures of cleaning materials ~~VOC-containing compounds~~ pursuant to Subsection (d)(2)(ii) of this rule shall be calculated using the District's "Procedure for Estimating the Vapor Pressure of a Solvent VOC Mixtures," as it exists on (date of adoption) September 20, 1994. If the vapor pressure of the liquid mixture is in excess of the limit specified in Subsection (d)(2)(ii), the vapor pressure shall be determined in accordance with ASTM Test Method D 2879-8397(2007), "Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope", or its most current version.

~~(5) Measurements of VOC content pursuant to Subsection (d)(1)(ii) shall be conducted and reported in accordance with ASTM Standard Recommended Practices for General Gas Chromatography Procedures, E 260-85.~~

(5) The content of methyl acetate, acetone and parachlorobenzotrifluoride shall be determined in accordance with the ASTM Test Method D6133-02 (2008) (Standard Test Method for Acetone, p-Chlorobenzotrifluoride, Methyl Acetate or t-Butyl Acetate Content of Solventborne and Waterborne Paints, Coatings, Resins, and Raw Materials by Direct Injection Into a Gas Chromatograph), or its most current version.

~~(6) Perfluorocarbon (PFC) compounds and other exempt compounds shall be assumed to be absent from a coating, cleaning, or surface preparation material subject to this rule unless a manufacturer of the material or a facility operator identifies the specific individual compound(s) and the amount(s) present in the material and provides an EPA and ARB approved test method which can be used to quantify the specific compounds.~~

(6) Measurements of exempt compound content, other than determined in accordance with Subsection (g)(5), shall be conducted in accordance with the SCAQMD

Test Method 303-91 (Determination of Exempt Compounds) as it exists on (date of adoption).

(7) The overall control efficiency of air pollution control equipment operated pursuant to Subsection (e)(1)(iii) shall be determined by multiplying the capture efficiency of the emission collection system by the control efficiency of the air pollution control device. The control efficiency of the air pollution control device shall be determined using EPA Test Methods 25A and/or 18 (40 CFR Part 60, Appendix A) and in accordance with a protocol approved by the Air Pollution Control Officer. Capture efficiency of an emission collection system pursuant to Subsection (e)(1)(iii) shall be determined according to EPA Test Method 204 and technical document, "Guidelines for Determining Capture Efficiency," dated January 9, 1995. Subsequent to the initial compliance demonstration period, appropriate key system operating parameters as approved by the Air Pollution Control Officer may be used as indicators of the performance of the emission control system.

(8) Other test methods which are determined to be equivalent to the test methods specified in this rule and approved, in writing, by the Air Pollution Control Officer, California Air Resources Board, and EPA may be used in place of the test methods specified in this rule.