

RULE 66
ORGANIC SOLVENTS
WORKSHOP REPORT

A workshop notice was mailed to each company in San Diego County known to be involved in operations using organic solvents and subject to Rule 66. Notices were also mailed to all Economic Development Corporations and Chambers of Commerce in San Diego County, the U.S. Environmental Protection Agency (EPA), the California Air Resources Board (ARB), and other interested parties. The workshop was held on February 27, 1991. The comments and District responses are as follows:

WORKSHOP COMMENT

Section (k) of the rule defines organic solvents as organic materials which exhibit an initial boiling point of 450°F. How was this temperature arrived at?

DISTRICT RESPONSE

An initial boiling point higher than that for diesel fuel, which is exempt from other District rules, was chosen.

WORKSHOP COMMENT

Does the definition of organic solvent materials pursuant to Section (k) include organic compounds exempt under VOC definitions in other District rules?

DISTRICT RESPONSE

Yes, this rule has traditionally included compounds that are considered exempt in other District VOC rules.

WORKSHOP COMMENT

Is there a pressure that should be specified in Section (k).

DISTRICT RESPONSE

Yes. Section (k) has been revised to specify the initial boiling point is measured at 760 millimeter mercury.

WORKSHOP COMMENT

Rules 67.3 and 67.9 should be included in Subsection (n)(1) of Rule 66 which lists exemptions. Rule 67.9 exempts adhesives and sealants with a VOC content of less than 250 grams per liter, less water and less exempt compounds, from daily recordkeeping. However, since there is no exemption from Rule 66 for operations subject to rule 67.9, a facility would be required to maintain daily usage records for adhesives, sealants, and other VOC containing material pursuant to Section (o) of Rule 66. This seems contradictory and defeats the purpose of exempting these operations in Rule 67.9.

DISTRICT RESPONSE

Rules 67.3 and 67.9 has been included in Subsection (n)(1) of Rule 66, as requested. Sources for which other requirements are specified by these rules will be exempt from Rule 66.

WORKSHOP COMMENT

Subsection (n)(4) refers to Rule 67.3 and limits air-dried coating materials to 420 grams VOC per liter of coating excluding water, and baked coating material to 360 grams VOC per liter of coating less water. However, the limits in Rule 67.3 are 340 and 275 grams VOC per liter of coating less water and less exempt compounds for air-dried and baked coatings, respectively.

DISTRICT RESPONSE

At the time that this provision was added to the rule, 420 and 360 grams VOC per liter of coating less water and less exempt compounds were the applicable standards in Rule 67.3. It may be necessary to reduce these limits in the future, however, the District would prefer to wait until a statewide technical committee completes its work on a Best Available Retrofit Control Technology (BARCT) standard for sources subject to Rule 66. At that time these limits will be addressed.

WORKSHOP COMMENT

Does Rule 66 apply to varnish coating operations of power supplies?

DISTRICT RESPONSE

Yes, varnish coating operations that are not subject to Rule 67.3 are subject to Rule 66.

WORKSHOP COMMENT

Subsection (n)(4) seems obsolete since most operations are now subject to other rules specific to the operation.

DISTRICT RESPONSE

Yes, but because of the time restraints in meeting EPA requirements, these issues were not investigated. As stated earlier, the District prefers to wait until the statewide technical committee completes its work on a generic replacement for Rule 66.

WORKSHOP COMMENT

Will the VOC content limits in Subsection (n)(4) be revised before it goes to the District Board?

DISTRICT RESPONSE

No, the VOC limit standards of Subsection (n)(4) will not be modified in this revision of Rule 66.

WORKSHOP COMMENT

Subsection (n)(4) requires that the VOC, excluding water, be printed on containers while other rules require labeling of VOC less water and exempt solvents. Does this mean two sets of VOC labels are required for the same material? There should be some consistency in the District's labeling requirements.

DISTRICT RESPONSE

The labeling requirement in Subsection (n)(4) has been deleted.

WORKSHOP COMMENT

Section (o) presents the same problems as discussed earlier with Subsection (n)(1). It is impossible to maintain daily records of usage in operations where amounts of organic solvents used are minimal.

DISTRICT RESPONSE

Section (o) cannot be eliminated completely. There are many operations which are only subject to District Rule 66 and would require daily recordkeeping. As discussed above, revisions have been made to exclude those subject to Rules 67.3 and 67.9.

WORKSHOP COMMENT

What operations in the District are not covered by source specific rules?

DISTRICT RESPONSE

There are many industries in the District that are currently subject only to Rule 66, such as automotive refinishing, electronic components manufacturing, wood furniture coating operations exempt from Rule 67.11, and plastics and composites parts coating operations.

WORKSHOP COMMENT

There needs to be some consistency in recordkeeping requirements amongst the different rules. Subsection (o)(5), for example, requires recordkeeping of oven temperatures which is not required in Rule 67.9.

DISTRICT RESPONSE

There are plans to develop a generic recordkeeping rule in the District. Regarding oven temperatures, operations that are subject exclusively to Rule 66 have an emissions limit that is dependent on the oven temperature and, therefore, there is a need to maintain these records.

WORKSHOP COMMENT

Will Rule 66 be revised in the future to eliminate the differentiation between photochemically reactive and non-photochemically reactive compounds?

DISTRICT RESPONSE

Yes, Rule 66 will likely be revised in the future to have instead a VOC limit and will have the same definition for VOC as that found in other rules.

WORKSHOP COMMENT

A compliance schedule should be included to meet recordkeeping requirements. Six months to a year is recommended.

DISTRICT RESPONSE

The rule has been revised to allow six months after date of adoption of the rule to come into compliance with recordkeeping requirements of Section (o).

WORKSHOP COMMENT

Is there any allowance in Section (p) for tolerance levels of test methods ? This should be included in the test methods section.

DISTRICT RESPONSE

No, there is currently no allowance for accuracy of test methods. This issue is addressed by current District policies regarding enforcement actions based on testing results.

WORKSHOP COMMENT

Will Material Safety Data Sheets (MSDS's) be sufficient to demonstrate VOC contents? If so, why are test methods included?

DISTRICT RESPONSE

MSDS's may be sufficient if all necessary data are supplied on the MSDS. Alternatively, a manufacturer's specification or technical data may be adequate. The cited test methods are not intended for the facilities, but for enforcement agencies if they decide to test a facility's materials or if compliance cannot be determined from available data sources.

WORKSHOP COMMENT

Section (i) requires that any person using or selling materials containing organic solvents supply written evidence of the chemical composition, physical properties, amount consumed and sold. Is there a container size exemption ? Does this mean that a store must report everything it sells?

DISTRICT RESPONSE

No, there is no exemption for container size. This is not a change to the rule. The rule does not require that records be maintained for every material, but only that this information be made available upon request. The District does not anticipate that there will be a change in past frequency in which these records have been requested.

WORKSHOP COMMENT

Are organic compounds, exempt under other District rules, regulated by Rule 66?

DISTRICT RESPONSE

At the present time exempt compounds are included in organic solvent content calculations for the purposes of Rule 66. However, ARB is working on a generic solvent rule that would have a definition of volatile organic compounds consistent with other source-specific rules.

ARB COMMENT

The term "Volatile Organic Compound (VOC)" is not defined in this rule. The same meaning should be assigned to VOC in this rule as in other District's rules.

DISTRICT RESPONSE

The term "Volatile Organic Compound" is used only in Subsection (n)(4) of the rule. There is a reference in Subsection (n)(4) specifying that the definition of VOC is the same as in District's Rule 67.3.- Coating of Metal Parts and Products. For clarification, the term "Volatile Organic Compound" in Subsection (n)(5) has been replaced by "organic solvent".

ARB COMMENT

Various sections of the rule refer to "reduction" in the discharge of organic material. Judging from the prescribed test methods the intent is to require capture and abatement of emissions with overall 85% efficiency. The term "reduction of discharge" should be defined, or clarifying language should be inserted wherever such reduction is specified.

DISTRICT RESPONSE

The emission reduction specified in the rule does not necessarily require installation of control equipment where the capture and reduction efficiency is specified. This reduction can be achieved by using materials with a low content of organic solvents or with no solvents at all. However, clarifying language has been inserted in the rule to specify the overall reduction and collection efficiency of control equipment where applicable.

ARB COMMENT

The last provision in Section (a) should be made consistent with similar provisions in Sections (b) and (c).

DISTRICT RESPONSE

The District agrees. The rule has been amended as suggested.

ARB COMMENT

Section (g) should be modified to include a requirement for the efficiency of emission reduction and emission collection systems.

DISTRICT RESPONSE

Section (g) has been amended as suggested.

ARB COMMENT

The definition of organic solvent in Section (k) involves reference to initial boiling point. This reference may conflict with the determination of the organic content of aqueous and other mixtures by EPA Method 24 since volatiles are determined by drying at 110 °C for one-hour.

DISTRICT RESPONSE

EPA Method 24 is applicable to the determination of organic compounds content in paints and related coatings only and cannot be used for determination of volatile organic compounds in organic solvents or their blends. The rule exempts high boiling materials from the definition of organic solvents and the test method for determination of an initial boiling point of such materials is therefore cited in the rule.

ARB COMMENT

EPA Method 18 measures specific organic compounds rather than organic materials as defined in this rule. The reference to Method 18 should be deleted.

DISTRICT RESPONSE

Organic materials are defined in this rule as chemical compounds of carbon excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, metallic carbonates, and ammonium carbonate. In general, Method 18 can be used to identify organic materials. However, this method is not required for determination of the control equipment efficiency and it is deleted from Sub - section (p)(1).

ARB COMMENT

The wording "compounds containing organic materials" is technically incorrect.

DISTRICT RESPONSE

The wording has been corrected.

ARB COMMENT

Since the District has experienced severe air quality problems it may wish to consider lowering the current limits in the rule which trigger a requirement for emission reduction.

DISTRICT RESPONSE

The present rule revision is undertaken to correct SIP deficiencies identified by the EPA. The District is planning to make fundamental changes in this rule after the statewide technical review group completes its work on a Best Available Control Retrofit Technology (BARCT) standard for sources subject to Rule 66.

ARB COMMENT

The wording of Subsection (n)(1) implies that sources exempt from other District rules are also exempt from Rule 66. The District should consider amending this subsection in light of severity of the air pollution problem in San Diego.

DISTRICT RESPONSE

The proposed amendment has been made.

Proposed amendments to Regulation IV, Rule 66 is to read as follows:

RULE 66. ORGANIC SOLVENTS

(a) A person shall not discharge into the atmosphere more than 15 pounds (6.8 kg) of organic materials in any one day from any article, machine, equipment or other contrivance, in which any organic solvent vapor comes into contact with flame in the presence of oxygen or in which any organic solvent is evaporated at temperatures exceeding 200° F (93.3° C) in the presence of oxygen, unless such discharge has emissions of organic materials have been reduced by at least 85 percent by weight. Those portions of any Emissions of organic materials resulting from any series of articles, machines, equipment, processes, operations or other contrivance designed for processing any item, including but not limited to, a continuous web, strip, or wire, which emit organic materials and use operations described in this section subdivision shall be collectively subject to compliance with this section subdivision.

(b) A person shall not discharge into the atmosphere more than 40 pounds (18.14 kg) in any one day of organic materials from any article, machine, equipment or other contrivance used under conditions other than described in Section Subdivision (a), for employing or applying any organic solvent or material containing organic solvent which exceeds the compositional limitations for photochemically reactive compounds set forth in Section (l) Subdivision (u), unless such discharge emissions of organic materials have has been reduced by at least 85 percent by weight.

Emissions of organic materials resulting from any series of articles, machines, equipment, processes, operations or other contrivances designed for processing any item including, but not limited to, a continuous web, strip, or wire and using operations described in this section subdivision shall be collectively subject to compliance with this section subdivision.

(c) A person shall not discharge into the atmosphere more than 3,000 pounds (1351 kg) in any one day of organic materials from any article, machine, equipment or other contrivance used under conditions other than described in Section Subdivision (a) for employing or applying any organic solvent or material containing organic solvent which does not exceed the compositional limitations for photochemically reactive compounds set forth in Section (l) Subdivision (u), unless such discharge emissions of organic materials have has been reduced by at least 85 percent by weight. Emissions of organic materials resulting from any series of articles, machines, equipment, processes, operations or other contrivance designed for processing any item including, but not limited to, a continuous web, strip, or wire and using operations described in this section subdivision shall be collectively subject to compliance with this section subdivision.

(d) A person shall not use any organic solvent which exceeds the compositional limitations for photochemically reactive compounds set forth in Section (l) Subdivision (u), to thin or

reduce any surface coating in preparation for application of said coating. This does not exempt equipment or processes as described in Subdivision Sections (a), (b), or (c) in which any surface coating is employed, applied, or dried from the applicable emission limits of Subdivision Sections (a), (b), or (c).

(e) ~~Notwithstanding Subdivisions (a), (b) and (c) of this rule, a person shall not discharge into the atmosphere any organic material from any degreasing operation employing an organic solvent which exceeds the compositional limitations for photochemically reactive compounds set forth in Subdivision (u), unless such discharge has been reduced by at least 85 percent by weight. [Rev. 11/30/77]~~

(f) ~~Notwithstanding Subdivisions (a), (b) and (c) of this rule, a person shall not discharge into the atmosphere any organic material from any dry cleaning operation employing an organic solvent which contains photochemically reactive compounds named in Subdivision (u) in amounts, either individually or in combination, equal to or greater than 4 percent by volume of the total solvent, unless such discharge has been reduced by at least 90 percent by weight. If incineration is used as a control technique 90 percent or more of the carbon in the organic compounds being incinerated must be oxidized to carbon dioxide. [Rev. 11/30/77]~~

(g) ~~No person shall use trichloroethylene for any degreasing or dry cleaning operation unless the discharge of trichloroethylene from such operation has been reduced by at least 85 percent by weight. [Rev. 11/30/77]~~

(h) ~~(e)~~ Emissions of organic materials to the atmosphere from the cleanup with any organic solvent of any article, machine, equipment, process, operation, or other contrivance described in Subdivision Sections (a), (b), or (c), ~~(e), (f) or (g)~~ of this rule, shall be included with the discharge of organic materials into the atmosphere from that article, machine, equipment, process, operation, or other contrivance for determining compliance with Subdivision Sections (a), (b), and (c), ~~(e), (f) and (g)~~ of this rule.

(i) ~~(f)~~ A person shall not, during any one day, discard, dump, or otherwise dispose of a total of more than one and one-half gallons of any organic solvent which exceed the compositional limitations for photochemically reactive compounds set forth in Subdivision (u) by any means which will permit the evaporation of such solvent into the atmosphere. Emissions resulting from the discard, dumping, or other disposal of organic solvents used for any purpose with any article, machine, equipment, process, operation or other contrivance shall be included with the discharge of organic materials from that article, machine, equipment, process, operation or other contrivance for determining compliance with Subdivision Sections (a), (b), and (c), ~~(e), (f), and (g)~~ of this rule.

(j) ~~(g)~~ Discharge of organic materials into the atmosphere required to be controlled by Subdivision Sections (a), (b), and (c), ~~(e), (f) and (g)~~ of this rule shall be reduced by:

(1) Incineration, provided that ~~90 percent or more of the carbon in the organic material being incinerated is oxidized to carbon dioxide and the~~

~~discharge of organic materials is reduced by the combined collection and reduction efficiency of a control device~~ is at least 85 percent by weight, or

(2) Adsorption Absorption, provided that ~~the discharge of organic materials is reduced by the combined collection and reduction efficiency of a control device~~ is at least 85 percent by weight.

(3) Processing in a manner ~~determined by the Air Pollution Control Officer to be~~ not less effective than (1) or (2) above.

(k) (h) A person incinerating, adsorbing, or otherwise processing organic materials pursuant to this rule shall provide, properly install and maintain in calibration, in good working order and in operation, devices as specified ~~in the Authority to Construct or Permit to Operate or as specified by the Air Pollution Control Officer (APCO)~~ for indicating temperatures, pressures, rates of flow, or other operating conditions necessary to determine the degree and effectiveness of air pollution control.

(l) ~~A person shall not sell for use in San Diego County, in containers of one quart capacity or larger, any marine coating containing any organic solvent which exceeds the compositional limitations for photochemically reactive compounds set forth in Subdivision (u). [Rev. 11/30/77]~~

(m) ~~A person shall not employ, apply, evaporate, or dry in San Diego County any marine coating, purchased in containers of one quart capacity or larger, containing any organic solvent which exceeds the compositional limitations for photochemically reactive compounds set forth in Subdivision (u). [Rev. 11/30/77]~~

(n) ~~A person shall not thin or dilute any marine coating with any organic solvent which exceeds the compositional limitations for photochemically reactive compounds set forth in Subdivision (u). [Rev. 11/30/77]~~

(o) (i) Any person using, or any person selling for use in San Diego County, any organic solvents or any materials containing organic solvents shall supply the ~~Air Pollution Control Officer~~ APCO, upon request and in the manner and form prescribed by him ~~the APCO~~, written evidence of the chemical composition, physical properties and amount consumed or sold for each organic solvent.

(p) (j) For the purposes of this rule, determination of the organic solvent content and composition of a solvent or material shall be made as of the time that said solvent or material is in its final form for application or employment, notwithstanding any prior blending, reducing, thinning, or other preparations for application or employment.

(q) ~~For the purposes of this rule, degreasing means any operation using organic solvent as a surface cleaning agent prior to fabricating, surface coating, electroplating or any other process.~~

(f) ~~A dry cleaning operation means any operation wherein an organic solvent is used in cleaning of garments and other fabric materials.~~

(s) ~~For the purposes of this rule, a marine coating is defined as surface coating used for ships and boats and their appurtenances. [Rev. 11/30/77]~~

(t) (k) For the purposes of this rule, organic solvents are defined as organic materials which are liquids at standard conditions and which are used as dissolvers, viscosity reducers, extractants, or cleaning agents, or are reactants or products in manufacturing processes except that such materials which exhibit an initial boiling point of 450° F (232°C) or higher at 760 mm Hg ~~a boiling point higher than 220° F (104.4° C) at 0.5 millimeter mercury absolute pressure or having an equivalent vapor pressure shall not be considered to be solvents~~ unless exposed to temperatures exceeding 200° F (104.4° C 93.3°C).

(u) (l) The compositional limitations of any organic solvent referred to in this rule are the volume percentages of the following photochemically reactive compounds, compared to the total solvent volume:

(1) A combination of hydrocarbons, alcohols, aldehydes, esters, ethers, or ketones having an olefinic or cyclo-olefinic type of unsaturation: 5 percent.

(2) A combination of aromatic compounds with eight or more carbon atoms to the molecule, except ethylbenzene: 8 percent.

(3) A combination of ethylbenzene, ketones having branched hydrocarbon structures, trichloroethylene or toluene: 20 percent.

(4) Any aggregate of (1), (2), or (3) above, provided their individual volume percentages are not exceeded: 20 percent.

Whenever any organic solvent or constituent of an organic solvent may be classified from its chemical structure into more than one of the above groups of photochemically reactive compounds, it shall be considered as a member of the most reactive group, that is, that group having the lowest individual percentage limitation.

(v) (m) For the purposes of this rule, organic materials are defined as chemical compounds of carbon excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, metallic carbonates, and ammonium carbonate.

(w) (n) The provisions of this rule shall not apply to:

(1) ~~The use of equipment~~ Operations for which other requirements are specified by Rules 61.0 through 61.5 ~~61.9, 67.0 through 67.2, and or Rule 65, 67.3, 67.6, 67.9, 67.12, or 67.15~~ or which are exempt from air pollution control requirements by said rules, or which are subject to and comply with rules that specifically exempt said equipment from this rule.

(2) The spraying or other employment of insecticides, pesticides, or herbicides.

(3) The use of any surface coating material in any article, machine, equipment or other contrivance described in Sections (a), (b), or (c) of this rule, if:

(i) The organic solvent content of such surface coating material does not exceed 30 percent by volume, excluding water, and

(ii) The organic solvent or any organic material in such surface coating material does not come into contact with flame.

(4) The use of any air-dried coating material which, when applied, contains less than 420 grams of volatile organic compounds per liter of coating applied (excluding water and exempt compounds) or the use of any baked coating material which, when applied, contains less than 360 grams of volatile organic compounds per liter of coating applied (excluding water and exempt compounds). For purposes of this exemption, "air-dried coating", "baked coating", "exempt compounds" and "volatile organic compounds" shall have the same meaning as defined in Rule 67.3. ~~In order to qualify for this exemption, coatings manufactured after January 1, 1986 shall have the volatile organic compound content of the coating, as grams per liter of coating (excluding water), as supplied, printed upon the coating container in such manner as to be easily identifiable by the user and the District.~~

(5) Equipment exclusively using aqueous solutions not containing volatile organic solvents ~~compounds~~ in excess of 10 percent by weight for surface preparation, cleaning, stripping or etching.

~~(6) The provisions of Section (e) shall not apply to operations and/or coatings specifically exempt from Rule 67.9~~

Any person claiming exemptions (n)(3), (n)(4), and/or (n)(5) shall maintain current manufacturers' specifications or analyses which substantiate this claim. These specifications and analyses shall be maintained on site and made available to the District upon request.

(o) *Effective (6 months after date of adoption)* an owner or operator of a stationary source using organic materials subject to this rule shall maintain daily records of operations subject to this rule. These records shall be maintained on site for not less than three years and made available to the District upon request. These records shall include, but not be limited to, the following:

(1) The method of application and substrate type;

(2) The amount and type of adhesive, coating, thinner, or other substances containing organic materials used for each operation and the equipment involved;

- (3) The organic material content of each adhesive, coating, thinner, or other material;
 - (4) The amount of diluent, surface preparation, cleanup or washup solvents used and the organic material content of each;
 - (5) Oven temperature, where applicable;
 - (6) Emission control equipment operating parameters necessary to ensure compliance with this rule including, but not limited to temperatures, pressures, and flow rates; and
 - (7) Inspection and ongoing maintenance schedules for the control equipment.
- (p) For the purpose of determining compliance with this rule, the following test methods shall be used:
- (1) Measurements of organic material emissions subject to this rule shall be conducted in accordance with Methods 18 and 25 (40 CFR 60, Appendix A), and with EPA Guidelines for Determination of Capture Efficiency as they exist on (date of adoption).
 - (2) Measurement of the initial boiling point of ~~compounds containing~~ organic solvents ~~materials~~ shall be determined using the ASTM Standard Test Method for Distillation Range of Volatile Organic Liquids, D 1078-86.
 - (3) The photochemical reactive compound content shall be determined using the ASTM Standard Recommended Practices for General Gas Chromatography Procedures, E 260-85, General Techniques of Infrared Quantitative Analysis, E 168-67, or General Techniques of Ultraviolet Quantitative Analysis, E 169-87.
 - (4) The organic material content of adhesives, coatings, ~~thinners~~, or other substances containing organic materials shall be determined using EPA Test Method 24 (40 CFR60, Appendix A) as it exists on (date of adoption).