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Air Pollution Control Officer

February 5, 1991

TO: Rule 67.17 (Storage of Materials Containing VOC)
Workshop Participants

FROM: Richard J. Smith
Deputy Director

RULE 67.17 FINAL RULE AND WORKSHOP REPORT

Attached are the final changes to Rule 67.17 (Storage of Materials Containing VOC) and the workshop report. The rule changes will likely be scheduled for adoption by the Air Pollution Control Board in April, 1991.

If you have any questions or comments on the final proposal, please call Natalie Zlotin at (619) 694-3312 or me at (619) 694-3303.

A handwritten signature in blue ink that reads "Richard J. Smith". The signature is written in a cursive, flowing style.

RICHARD J. SMITH
Deputy Director

attachments

RJSm:rjasm

**RULE 67.17- STORAGE OF MATERIALS CONTAINING
VOLATILE ORGANIC COMPOUNDS**

WORKSHOP REPORT

A workshop notice was mailed to all permit holders 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 November 8, 1990, and was attended by 17 people. Written comments were also received. The comments and District responses are as follows:

WORKSHOP COMMENT

The test methods in Section (b) were changed. To what kind of substances do these tests apply?

DISTRICT RESPONSE

The District exempts low volatility materials such as slow cure asphalts, most cutting/machining oils, hydraulic fluids, lubricants and other petroleum products because of low emissions associated with these products. The tests outlined in this subsection apply to such substances. These tests are routinely used for quality control and material specifications provided by the manufacturers of these materials.

WORKSHOP COMMENT

The definition of VOC should include a cut-off point related to the volatility of organic compounds. As a minimum, the word "volatile" should be included in the definition.

DISTRICT RESPONSE

The VOC definition in the rule follows the recent EPA definition promulgated in "Issues Relating to VOC Regulation Cutpoints, Deficiencies and Deviations -Clarification to Appendix D of November 24, 1987 Federal Register". This definition includes all compounds of carbon that can participate in photochemical reactions to produce photochemical smog except ones designated as exempt compounds. For clarity, however, the word "volatile" has been added to the definition. The issue of low volatility compounds is addressed by the exemptions section of the rule.

WORKSHOP COMMENT

The tests mentioned in the rule refer to a special distillation procedure which requires heating of chemicals to comparatively high temperature, such as 680°F. It is preferable to have vapor pressure references since these data are readily available on the manufacturers safety data sheets.

DISTRICT RESPONSE

The vapor pressure of low volatility substances (less than 1 mm Hg at 20°C) cannot be directly measured or calculated using any of the EPA approved or ASTM methods. Therefore the specification of vapor pressure for such substances will not be approvable by the ARB or EPA.

Some alternative parameters identifying these compounds must be chosen, such as distillation range or initial boiling point. These tests are often used to provide information contained on the manufacturer's specification lists, for example in the case of petroleum products or slow cure asphalts.

WORKSHOP COMMENT

Some substances that are used have flash points lower than 680°F. It is unsafe to use the suggested test method since it will result in the ignition of a product being tested.

DISTRICT RESPONSE

The ASTM Standard Tests for determination of distillation range of petroleum products are conducted in an apparatus which excludes open flames or any other source of ignition. These methods are commonly used for petroleum based materials with much lower flash points. If properly conducted, these procedures should present no unusual safety issues. The flash point of the substance being tested is irrelevant to the test procedure.

WORKSHOP COMMENT

What is the definition of "being accessed" as used in the rule?

DISTRICT RESPONSE

The term "being accessed" is used in the rule as part of the "in use" definition. This term was chosen to generally define container operations/processes not otherwise specified. Among other things, this term was meant to cover such processes/operations as inspecting, gauging, measuring (temperature or other parameters), preparing, sampling or mixing, etc.

WORKSHOP COMMENT

The definition of "empty" container used in the rule is different from that used by the Hazardous Materials Management Division of San Diego County. There should be consistency between two agencies.

DISTRICT RESPONSE

The definition of an "empty container" in Rule 67.17 is similar to the one in the Health and Safety Code, §25143.2 with the reference to 40 CFR, Section 261.7. The local waste minimization procedure of the Hazardous Materials Management Division allows the uncontrolled drying of solvents. This procedure does not satisfy the requirements of the Air Pollution Control District since it results in unnecessary VOC emissions to the atmosphere. Accordingly, the definition of "empty" will not be changed.

WORKSHOP COMMENT

Does the rule require a user to conduct the tests outlined in Section (e)?

DISTRICT RESPONSE

No. This is not the rule's intent. The test methods specified are to be used by the EPA, ARB or the District for enforcement purposes. Users are required to maintain records, such as material safety data sheets or manufacturer's product specifications, to provide the information used as the basis for an exemption.

WORKSHOP COMMENT

The end of the last sentence in the first paragraph of Subsection (b)(3) should read "and any of their wastes"

DISTRICT RESPONSE

The correction has been made.

WRITTEN COMMENT

The District has developed a definition of VOC which literally constitutes every organic compound, with a few listed exceptions. The definition disregards whether or not the compound is volatile. A definition which uses the word "volatile" is suggested. A definition of the term "volatile" should also be included. Such definition should reflect the compound's ability to evaporate at the temperature it is used or stored at.

DISTRICT RESPONSE

The definition of VOC in the proposed rule follows the definition outlined by the EPA in "Issues Relating to VOC Regulation Cutpoints, Deficiencies and Deviations -Clarification to Appendix D of November 24, 1987 Federal Register". This document states that "low volatility compounds cannot be excluded from the VOC definition since it would contradict the EPA reactivity policy". The EPA further states that "compounds with low volatility would volatilize under certain processes and therefore would take part in photochemical reactions". For clarity, the word "volatile" has been inserted in the VOC definition, as it stated in the previous comment. Low volatility and non-volatile substances are further addressed in the exemptions, Section (b) of the rule.

WRITTEN COMMENT

It is suggested that the vapor pressure exemption be retained, since vapor pressure is a parameter found on Material Safety Data Sheets that can be referred to. Absolute vapor pressure should be calculated utilizing the District's "Procedure for Estimating the Vapor Pressure of a Solvent Mixture" or the ASTM Test Method D 2879-83.

DISTRICT RESPONSE

The ASTM Test Method D 2879-83 is not applicable to liquid mixtures with vapor pressure less than 1 mm Hg. The District calculation procedure can be applied only if the exact composition of a mixture and partial vapor pressure of each ingredient are available, which is not the case in many instances.

WRITTEN COMMENT

An alternative parameter such as the initial boiling point could be offered utilizing the ASTM 1078-86 method.

DISTRICT RESPONSE

The use of initial boiling point as a parameter for identifying the volatility of substances exempt under the proposed rule has been incorporated, together with the corresponding ASTM Test Method D 1078-86.

WRITTEN COMMENT

The VOC test method (ASTM Standard Test Method D 402-76) is for Asphaltic Products. The suggested method is not practicable for other types of VOC's used very often. For example, mineral oils have a flash point of 444°F (229°C), i.e. mineral oils and most industrial solvents will combust well before the 360°C point required by the test method. A danger will be present to the testers because of this.

DISTRICT RESPONSE

As stated earlier, the flash point of the compounds undergoing testing is irrelevant to the test procedure since the test is conducted in the closed apparatus and in the absence of any ignition source. In addition, as stated in Subsection (b)(3) the low volatility exemption in the rule is not applicable to industrial solvents.

WRITTEN COMMENT

Based on the definition of VOC, and based on the limited exclusions, some pieces of equipment could be considered storage containers, and therefore, lubricating oils, cooling oils, cutting oils, hydraulic oils, etc. would be subject to the rule. It would be impossible to run a machine shop with these kinds of restrictions. Perhaps, a definition of a container needs to be created so that equipment which has reservoirs to store oils is exempt.

DISTRICT RESPONSE

The amended rule exempts most lubricating oils, cutting oils, hydraulic oils and other low volatile substances because their initial boiling point is higher than 400°F. However, according to the information supplied by industry, some lubricants and cutting oils contain a significant amount of low boiling volatile organic compounds, and the containers storing such materials will have to be closed when not in use.

On the other hand, drip pans for cutting oils in machine shops, are not used for storage and therefore are not intended to be subject to this rule. To clarify this, a definition of "container" has been added to the rule.

EPA COMMENT

The California SIP Rule 67.7 for San Diego County lists two ASTM Test Methods (D 402-73 and D 244-75) for determining the amount of VOC allowed in asphalt. Rule 67.17 lists two different ASTM Test Methods (D 402-76 and D 86-82) for measuring the VOC content of asphalt. Please verify that the tests methods given in the revised rule are the appropriate methods.

DISTRICT RESPONSE

Rule 67.7 - Cutback and Emulsified Asphalts - is applicable to rapid cure, medium cure cutback asphalts, and emulsified asphalts as they are defined in the rule. The ASTM Test Method D 244-75 specified in Rule 67.7 is applicable to emulsified asphalt only.

The ASTM Test Method D 402-73 in Rule 67.7 is applicable to cutback asphalts. The method specified in amended Rule 67.17 for determination of the VOC content of asphaltic (slow cure cutback asphalts) materials is ASTM Test Method D 402-76. The only difference in these two methods is the last two digits in the test numbers which indicate the year when the test was reapproved or revised. The ASTM Test Method D 402-76 referred to in amended Rule 67.17 is therefore a new version of the Test Method D 402-73 revised in 1976. Thus the test method in the amended Rule 67.17 is the appropriate method.

EPA COMMENT

The SIP Rule 67.7 refers to the amount of VOC which will evaporate at a certain temperature. The revised Rule 67.17 refers to the amount of material which will evaporate at that temperature. This discrepancy needs to be clarified.

DISTRICT RESPONSE

Rule 67.7 refers to the amount of "organic compounds" as they are defined in the District's Rule 20.2, i.e., organic compounds that do not include exempt compounds such as Freons, methane, carbonates, etc. This definition is similar to the definition of VOC in the amended Rule 67.17.

The standard ASTM test methods specified in Rule 67.7 (D 402-73) and in Rule 67.17 (D 402-76) state that the "procedure measures the amount of volatile constituents in cutback asphaltic products" evaporating at a certain defined temperature. These volatile constituents may, in general, include exempt compounds and/or inorganic materials but exclude water since the test procedure requires a dehydration of a sample before testing.

However, exempt compounds are not used in asphaltic materials. The amount of inorganic compounds in such materials which will evaporate at 680°F, as required by the rule, is insignificant. Therefore in this case the amount of "volatile constituents" determined by the ASTM Test Method D 402-76 will be identical to the amount of VOC's.

EPA COMMENTS

The ASTM methods listed in the proposed rule are not approved by the EPA. They therefore should be included in the package submitted to the EPA as a SIP revision.

DISTRICT RESPONSE

Appropriate ASTM test methods will be included in the final rule package submitted to EPA.

EPA COMMENT

The end of the last sentence in the first paragraph of Subsection (b)(3) should read "and any of their wastes"

DISTRICT RESPONSE

The sentence has been corrected.

EPA COMMENT

For the clarity of wording, "This exemption does not include any of the following. . ." should be changed to "This exemption shall not apply to any of the following. . .".

DISTRICT RESPONSE

The recommended change has been made.

Proposed amendments to Rule 67.17 are to read as follows:

**RULE 67.17. STORAGE OF MATERIALS CONTAINING
VOLATILE ORGANIC COMPOUNDS**

(a) APPLICABILITY

This rule applies to any person who stores, transfers, applies or otherwise uses materials which contain volatile organic compounds.

(b) EXEMPTIONS

(1) This rule is not applicable to equipment subject to District Rules 61.1, 61.2, 61.3, 61.4, 67.2, 67.6, 67.8, and 67.10 and 67.15.

(2) This rule is not applicable to any containers utilized exclusively in connection with any structure, which is designed and used exclusively as a dwelling for not more than four families.

(3) ~~This~~ Section (d) of this rule is not applicable to any asphaltic material which contains volatile organic compounds and which, ~~has a volatile organic compound composite true vapor pressure equal to or less than 0.1 millimeter of mercury at 68°F (20°C) if distilled, has a volume percent evaporated at 360°C (680°F) of 20% or less,~~ provided such material is stored at ambient temperatures.

(4) Section (d) of this rule is not applicable to any material which contains volatile organic compounds and which has an initial boiling point of 204°C (400°F) or more at atmospheric pressure, provided that such material is stored at ambient temperature. This exemption ~~does not include~~ shall not apply to any of the following: paints, thinners (diluent, viscosity reducers, retarders and dispersants), catalysts, any other paint additive, sealers, body fillers, resins, gel coats, inks, glues, adhesives, cleanup solvents or any of and their any of wastes.

(5) Section (d) of this rule is not applicable to any aqueous material which contains less than 10 percent by weight of volatile organic compounds.

It is the responsibility of any person claiming this exemptions (b)(3), (b)(4) and/or (b)(5) to maintain records current manufacturers' specifications or analyses which substantiate this claim. The claimant shall make these records available to the Air Pollution Control District upon request.

(c) **DEFINITIONS**

For the purposes of this rule , the following definitions shall apply:

(1) **"Volatile Organic Compound (VOC)"** means any volatile compound containing at least one atom of carbon, except: methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, methylene chloride, 1,1,1-trichloroethane, trichlorofluoromethane (CFC-11), dichlorodifluoromethane (CFC-12), chlorodifluoromethane (HCFC-22), trifluoromethane (CFC-23), trichlorotrifluoroethane (CFC-113), dichlorotetrafluoroethane (CFC-114), and chloropentafluoroethane (CFC-115), dichlorotrifluoroethane (HCFC-123), dichlorofluoroethane (HCFC-141b), tetrafluoroethane (HFC-134a) and chlorodifluoroethane (HCFC-142b) which may be emitted to the atmosphere during the storage or use of the compound or of any materials containing the compound.

(2) **"In Use"** means:

- (A) being accessed, or
- (B) being filled or emptied, or
- (C) being cleaned, maintained or repaired.

(3) **"Closed"** means:

- (A) having in place an apparatus or cover which completely covers the container and which is designed to retard VOC emissions but not necessarily provide a vapor tight seal, and
- (B) having no visible holes, breaks, openings or separations between adjoining components of the container or container cover.

(4) **"Empty"** means containing no materials which can be further drained or removed by gravity.

(5) **"Waste"** means a material which is intended to be discarded, is marked for disposal, or is no longer usable.

(6) **"Container"** means a receptacle used for storing volatile organic compounds included but not limited to cans, drums, pails, bottles or jars. This definition does not include drip pans or reservoirs used for collecting cutting and lubricating oils in machining equipment.

(d) **STANDARDS**

On and after March 6, 1990, any person subject to this rule shall comply with the following:

(1) All containers used to store, transfer, apply or otherwise employ materials containing VOC shall be closed when not in use.

(2) All containers used to store or transfer wastes containing VOC shall be closed except when being accessed or when empty.

(3) Containers specified above may be equipped with vents provided such vents are necessary to comply with applicable fire and safety codes.

(4) All wastes containing VOC (including paper or cloth impregnated with VOC) shall be stored in closed containers.

(e) **ALTERNATIVE CONTROL VOC TEST METHODS**

The VOC content of materials exempt pursuant to Subsection (b)(3) of this rule shall be determined in accordance with ASTM Standard Test Method for Distillation of Cutback Asphaltic (bituminous) Products, D402-76, or ASTM Standard Test Method for Distillation of Petroleum Products, D 86-82.

The initial boiling point of materials exempt pursuant to Subsection (b)(4) of this rule shall be determined in accordance with the ASTM Test Method 1078-86 for Distillation Range of Volatile Organic Liquids.

The VOC content of materials exempt pursuant to Subsection (b)(5) of this rule shall be determined in accordance with the ASTM Standard Recommended Practice for General Gas Chromatography Procedures, E 260-85.

~~(1) The requirements of Section (d) of this rule may be met by the use of an alternative VOC emissions control system which has been demonstrated to reduce VOC emissions from containers subject to this rule by at least 85 percent by weight, provided:~~

~~(A) the containers are designed to be an integral part of the VOC emissions capture system and cannot be used independent of the system;~~

~~(B) the alternative VOC emissions control system has been constructed pursuant to an Authority to Construct from the Air Pollution Control Officer; and~~

~~(C) the person electing to use an alternative VOC emissions control system has demonstrated, to the satisfaction of the Air Pollution Control Officer, that there are valid reasons why compliance with the requirements of Section (d) cannot be achieved except by use of an alternative control system, that the minimum 85 percent VOC emission control efficiency can be met, and that ongoing compliance with the minimum control efficiency can be reasonably enforced.~~

(2) A person electing to use an alternative VOC emission control system shall comply with the following increments:

~~(A) not later than May 7, 1990, submit an application for an Authority to Construct and Permit to Operate;~~

~~(B) provide additional information within 30 days of request by the Air Pollution Control Officer for such information;~~

~~(C) within 90 days of receipt of an Authority to Construct, complete construction in accordance with the Authority to Construct; and~~

~~(D) within 60 days of completion of construction, demonstrate compliance with the requirements of this rule to the satisfaction of the Air Pollution Control Officer.~~