PLACER COUNTY
AIR POLLUTION CONTROL DISTRICT

STAFF REPORT

RULE 235

ADHESIVES

PROPOSED RULE AMENDMENTS

September 11, 2012

BACKGROUND

The Placer County Air Pollution Control District (District) jurisdiction is Placer County. Placer County is located in northern California, bordering Sacramento County to the west and the State of Nevada on the east. Placer County is divided into three different air basins: the Sacramento Valley Air Basin (SVAB); the Mountain Counties Air Basin (MCAB); and the Lake Tahoe Air Basin (LTAB). The portions of Placer County in the SVAB and MCAB are included in the Sacramento Federal Ozone Non-Attainment Area (SFONA). The` SFONA has been classified as "severe" non-attainment for the National Ambient Air Quality Standard (NAAQS) for eight-hour ozone, as well as non-attainment with the State of California Ambient Air Quality Standard for ozone. The U.S. Environmental Protection Agency's (EPA) Phase 2 Ozone Rule – contained in 40 CFR 51.912 and 70 FR 71612, in accordance with Clean Air Act (CAA) Amendments of 1990, Sections 182(b)(2) and 182(f) – requires that areas that are classified as moderate non-attainment or higher must demonstrate in a State Implementation Plan (SIP) that their rules fulfill Reasonably Available Control Technology (RACT) requirements for volatile organic compound (VOC) and nitrogen oxides (NOx) which are ozone precursors. The implementation of RACT requires, at a minimum, District rules covering source categories with RACT guidance documents, which include all EPA-issued Control Technique Guidelines (CTG's), where there are such sources that operate in the District.

District Rule 235, Adhesives, limits VOC emissions from adhesive and sealant products application and associated solvent cleaning operations. The Rule was originally adopted on June 8, 1995, and approved into the SIP on July 18, 1996 (61 FR 37390). Rule 235 was later amended on April 10, 1997, and last amended on April 8, 2004. Neither of these rule versions has been approved into the SIP. In September 2008, the EPA issued a CTG for Miscellaneous Industrial Adhesives (EPA-453/R-08-005). The 2004 version of our Rule did not meet all the CTG requirements, as per EPA's comments received by the District on August 31, 2010. Thus, the District is proposing amendments to Rule 235 to meet RACT SIP obligations through implementation of all CTG requirements.

The proposed Rule amendments affect all those who buy, sell, offer to sale, or apply adhesive, adhesive primer, sealant and sealant primer products within the District. This includes a wide range of businesses, wholesale and retail stores, individuals, and permitted stationary sources.

Additionally, the District has one (1) permitted non-major source in the category of Adhesives manufacturing. The business name for this source is:

- H.B. Fuller Company

DISCUSSION

Rule 235 amendments were made based on: (1) EPA's 2008 CTG for adhesives; (2) EPA's comments that were received on August 31, 2010, in response of our submittal of the current April 2004 version of Rule 235 for SIP approval; and (3) Establishment of consistency with other local Air Districts' adhesives and sealants rules.

The District reviewed Adhesives and Sealants Rules of other local Air Districts, including:

- El Dorado, Rule 236, Adhesives, last amended on July 25, 1995.
- Sacramento, Rule 460, Adhesives and Sealants, last amended on November 11, 2000.
- San Joaquin, Rule 4653, Adhesives and Sealants, last amended on September 16, 2010.
- Yolo-Solano, Rule 2.33, Adhesive Operations, last amended May 14, 2008.

Also reviewed were rules from:

- San Diego, Rule 67.21, Adhesive Material Application Operations, last amended on May 14, 2008.

- South Coast, Rule 1168, Adhesive Material Application Operations, last amended on January 7, 2005.

These Districts are designated as non-attainment areas for the Federal national ambient air quality standard for ozone. Thus, they also are required to implement CTGs in their rules.

Proposed Rule amendments, in underline/strikeout format, are shown in Attachment #1. Specific changes to the Rule include:

Section 100. General

Section 102. Applicability. Subsections 102.1 and 102.2 are consolidated into one section.

Section 104.2 Exemptions. The exemption for contact adhesives is modified to be consistent with the requirements of the EPA Consumer Product Safety Commission regulations contained in the U.S. Code of Federal Regulations, Title 16, Part 1302. Additions include a flash point requirement and clarification that the exemption only applies to consumer products contact adhesives that are used at a home, construction site, or at any location other than a stationary source.

Section 104.8. Exemptions. An exemption is added to exclude all adhesive materials that fall under other District rules.

Section 200. Definitions

Definitions that are eliminated include: Aerosol adhesive primer, Low-volume low-pressure (LVLP) application equipment, PolyVinyl Chloride (PVC) welding sealant, Volatile organic compound (VOC) as applied, Volatile organic compound (VOC) as supplied. Additionally, Solvent Welding definition is mistakenly listed twice; therefore, one of the definitions was deleted.

Definitions that are added include: Airless spray, Ethylene propylene diene monomer (EPDM), Motor vehicle, Motor vehicle adhesive, Motor vehicle weatherstrip adhesive, Perimeter bonded sheet flooring installation adhesive, Plastic foam, Reinforced plastic composite, Single-ply roof membrane adhesive, Single-ply roof membrane adhesive primer, Single-ply roof membrane sealant, Sheet rubber lining installation, VOC content, Indoor carpet adhesive, VCT and asphalt tile adhesive, Structural wood member adhesive, Rubber vulcanization bonding, Top and trim adhesive.

Definitions that are amended include: Adhesive, Architectural sealant/primer, Aerosol adhesive or Adhesive primer, Aerosol cleaning solvent, Contact adhesive, Cyanoacrylate adhesive, High-volume low-pressure (HVLP) application equipment, Household adhesive, Key system operating parameter, Indoor floor covering installation adhesive, Plastic cement welding adhesive, Porous material, Single-ply roof membrane.

Section 300. Standards

Section 301. Material Application Methods. Changes to the section include:

- Subsection 301.1.8, Low-volume low-pressure (LVLP), is removed because it is not allowed by the CTG.

- Subsections 301.1.10, 301.1.11, and 301.1.12 are consolidated into one subsection. Additionally, allowing the use of those methods for adhesives and sealants product with viscosity of 200 centipoise or greater is added.

Section 302. VOC Content Limits. Changes to the section include:

- The following new adhesives sub-categories, and appropriate VOC content limits, is added, used by the CTG and/or other Air Districts rules:

  - Indoor Carpet or Carpet Pad
  - Rubber Flooring
  - Subfloor Installation
  - VCT and Asphalt Tile Installation
  - Structural Wood Member Glazing
  - Rubber Vulcanization Bonding
  - Motor Vehicle
  - Motor Vehicle Weatherstrip
  - Top and Trim
  - Ceramic Tiles
  - Dry Wall and/or Panel
  - Plastic Foam
  - Wood
  - Reinforced Plastic Composite

- PVC Welding Sealant sub-category and VOC content limit is eliminated. The limit expired on April 8, 2002. This product is now included in the "other" sub-category.

- Adhesive primers sub-categories – Automotive Glass, Plastic Cement Welding, Single-Ply Roof Membrane, Traffic Marking Tape, and Other – as listed in Table 302-2 are moved to Table 302-1. Table 302-2 is deleted.

- Contact adhesive sub-categories as listed in Table 302-3 are moved to Table 302-1. Table 302-3 is deleted.

- Sealant sub-categories – Architectural, Marine Deck, Non-membrane Roof Installation/Repair, Roadway Sealant, Single-Ply Roof Membrane Sealant, and Other – as listed under Table 302-4 are moved to Table 302-1. Table 302-4 is deleted.

- Sealant primers categories – Architectural-Non-Porous, Architectural–Porous, Marine Deck, and Other, listed in Table 302-5 are moved to Table 302-1. Table 302-5 is deleted.

- A few VOC content limits that were provided in pounds per gallon are corrected.

Section 303. Content Limits, Aerosol Adhesives and Adhesive Primers. The title of this section is changed to VOC Content Limits for Aerosol Adhesives. Aerosol Adhesive Primers are eliminated from the title since there are no applicable VOC content limits for aerosol adhesives primers. Also, the following has been added to cite the origin of the standards provided for aerosol adhesives: "in the Air Resources Board consumer products regulation found in Title 17 of the California Code of Regulations, sections 94507 – 94517, and listed."

Section 304. VOC Content Limits, Surface Preparation, Cleanup and Stripping Solvents. Changes to this section include:

- The sub-category titles are modified to add clarity.
- The VOC content limit of Electronic Components and Medical Devices sub-categories are revised to be as stringent as that for the same sub-categories in District Rule 240, Surface Preparation and Cleanup.
- The VOC content for Soaking Application Equipment in a Closed Container sub-category was corrected to 9.5 instead of .5 Partial Pressure Millimeters of Mercury at 20°C. The 9.5 mm Hg composite partial pressure limit was the maximum allowable limit for this sub-category in our 1995 version of the Rule that was approved into the SIP on July 18, 1996. Therefore, the .5 mm Hg is believed to be a mistake occurred during the last amendment process of the Rule in 2004.

Section 305. Work Practices for Adhesive Products, Sealant Products and Solvent Cleaning Materials. New provisions have been added for work practices requirements to meet those contained in the CTG.

Section 400. Administrative Requirements

Section 404. Operation and Maintenance Plan. This section is moved to Section 306.3.

Section 405. Calculation for Determining VOC Content of Material Excluding Water and Exempt Compounds. This section is moved to Subsection 290.1.

Section 406. Calculation for Determining VOC Content of Material Including Water and Exempt Compounds. This section is moved to Subsection 290.2.

Section 407. Calculation of Percent of VOC by Weight. This section is moved to Subsection 290.3.

Section 403. Labeling Requirements for Aerosol Adhesives. This section is moved to Section 405.

Section 403. HVLP Marking. New requirements for HVLP marking are added to Section 403.

Section 409. Calculation for VOC Composite Partial Pressure. This section is moved to Section 288.

Section 410. Product Information Requirements for Sellers. The title of this section is changed to Labeling Requirements, and new provisions are added to this section.

Section 500. Monitoring and Record

Section 502.5. Determination of Control Efficiency. Test methods to measure emissions of exempt compounds are added.

Section 502.12. Determination of Viscosity. Test methods to measure viscosity of adhesives are added.

Further, applicable test methods references are updated to the most approved current versions.

Miscellaneous

Additional miscellaneous changes are made for readability and conformance with the CTG which have no impact on the compliance requirements of the Rule.

ANALYSIS

The following Analysis and the subsequent Findings are intended to address the requirements set forth in the California Health and Safety Code relating to adoption of a new or amended District Rule, as well as other State statutes referenced herein.

1. Cost-Effectiveness of a Control Measure

California Health & Safety Code (H&S) Section 40703 requires a District to consider and make public "the cost-effectiveness of a control measure". The compliance costs of the proposed rule amendments are associated with purchasing adhesives and sealant products with complaint VOC content limits and meeting new work practices. Products that meet proposed adhesive and sealant VOC content limits are well-established to be readily available at the same price points as adhesives products that will become non-complaint when the proposed amendments will become effective on October 11, 2013. Thus, staff concludes there will be no significant adverse impacts on the profitability of business affected by the Rule. The cost effectiveness is acceptable by the EPA and other Air Districts that have already implemented the CTG requirements.

2. Socioeconomic Impact

H&S Section 40728, in relevant part, requires the Board to consider the socioeconomic impact of any new or amended rule if air quality or emission limits are significantly affected. Numerous existing adhesive operations are already operating in compliance with the amended rule standards.

3. Environmental Review and Compliance

California Public Resources Code Section 21159 requires an environmental analysis of the reasonably foreseeable methods of compliance should be conducted. Compliance of the proposed rule amendment is expected to be achieved by the replacement of current coating products with compliant compounds. Application of these compliant compounds will generally result in less VOC emissions from the coating activities. Therefore, the proposed rule amendment will reduce emissions from sources and will not cause any significant adverse effects on the environment. Staff has concluded that no adverse environmental impacts will be caused by compliance with the proposed rule amendment.

According to the above conclusion, Staff finds that the proposed rule amendment is exempt from the California Environmental Quality Act (CEQA) because: (1) it can be seen with certainty that there is no possibility that the activity in question may have a significant adverse effect on the environment (CEQA Guidelines §15061(b)(3)), and (2) it is as an action by a regulatory agency for protection of the environment (Class 8 Categorical Exemption, CEQA Guidelines §15308).

FINDINGS

A. **Necessity**: The adoption of proposed amended Rule satisfies the objective of the District to implement "Control Technique Guidelines" for the reduction of VOCs to achieve attainment with ambient air standards for ozone, and meets the District's requirements to implement "every feasible measure" and "Best Available Retrofit Control Technology" as required under California Health and Safety Code Sections 40919 and 40914.

B. **Authority**: California Health and Safety Code, Sections 40000, 40001, 40701, 40702, 40716, 41010, and 41013, are provisions of law that provide the District with the authority to adopt this proposed amended Rule.

C. **Clarity:** There is no indication, at this time, that the proposed amended Rule is written in such a manner that persons affected by the Rule cannot easily understand them.

D. **Consistency:** The proposed amended Rule is in harmony with, and not in conflict with or contradictory to, existing statutes, court decisions, or state or federal regulations.

E. **Non-duplication:** The proposed amended Rule does not impose the same requirements as an existing state or federal regulation.

F. **Reference:** All statutes, court decisions, and other provisions of law used by the District in interpreting this proposed amended Rule are incorporated into this analysis and this finding by reference.

SUMMARY

Rule 235, Adhesives, has been amended to address control guidance contained in the U.S. EPA's CTG for Miscellaneous Industrial Adhesives issued in 2008 (EPA-453/R-08-005).

ATTACHMENT #1

Subject:

Proposed Amended Rule 235, Adhesives

(Strikeout copy)

RULE 235 ADHESIVES

Adopted 06-08-95
(Amended 04-10-97, 04-08-04, 10-11-12)

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100 GENERAL

101 PURPOSE: To limit emissions of volatile organic compounds (VOCs) from the application of commercial and industrial adhesive or sealant products, and from related solvents and strippers.

102 APPLICABILITY: The provisions of this rule apply to any person who uses, applies or solicits the use or application of any adhesive or sealant product or associated solvent; or any person who supplies, sells, offers for sale, manufacturers or distributes for use or application within the District, any adhesive or sealant product or associated solvent.

~~102.1 Geographic: The provisions of this rule apply to all operations applying adhesives in Placer County~~

~~102.2 Business Category: This rule is applicable to any person who:~~

~~102.2.1 Manufactures, sells, offers for sale, or uses an adhesive or sealant product; or~~

~~102.2.2 Uses a surface preparation solvent, a cleanup solvent, or a stripper; or~~

~~102.2.3 Supplies an adhesive or sealant product to the person who applies the product (i.e., the product user); or~~

~~102.2.4 Solicits, requires the use of, or specifies the application of any adhesive or sealant product, surface preparation solvent, cleanup solvent or stripper, whether or not such material complies with this rule.~~

103 SEVERABILITY: If any section, subsection, sentence, clause, phrase, or portion of this rule is, for any reason, held invalid, unconstitutional, or unenforceable by any court of competent jurisdiction, that portion shall be deemed as a separate, distinct, and independent provision, and the holding shall not affect the validity of the remaining portions of the rule.

104 EXEMPTIONS

104.1 Aerosol Cleaning Solvents: The requirements of Section 303 shall not apply to the use of aerosol cleaning solvents at the stationary source provided that the total usage of the aerosol cleaning solvents does not exceed 160 fluid ounces per day, averaged over a calendar month.

104.2 Consumer Products Contact Adhesives: The requirements of Section 302 shall not apply to contact adhesives subject to the Consumer Product Safety Commission regulations in 16 Code of Federal Regulations, Part 1302, provided that adhesives are sold in packages of 128 fluid ounces or less and have a flash point greater than 20°F as determined pursuant to those regulations, and that are used at a home, a construction site, or at any location other than a stationary source.

104.3 Cyanoacrylate Adhesives: The requirements of this rule shall not apply to cyanoacrylate adhesives.

104.4 Equipment Cleanup: The VOC requirements in Section 304 shall not apply to ethyl acetate used to clean adhesive application equipment when:

104.4.1 The equipment is used in the manufacturing of transdermal drug delivery products, and

104.4.2 Fewer than 3 gallons per day of ethyl acetate, averaged over a calendar month, are used.

104.5 Household Adhesives: The requirements of this rule shall not apply to household adhesives that are regulated by the State of California and that are defined in Section ~~231~~232.

104.6 Low Usage: The requirements of Sections 302, 303 and 304.1 shall not apply to the materials used by the stationary source, if the total combined volume of these materials used at the stationary source does not exceed 55 gallons during any calendar year. Commercial and industrial operations that use such materials and that are exempted pursuant to this section shall comply with Section 501.

104.7 Low VOC Materials: The requirements of this rule shall not apply to materials containing 20 grams/liter or less (0.17 pounds/gallon) of VOC actual content~~, less water and exempt compounds, as applied~~.

104.8 Materials Regulated Under Other District Rules: The requirements of this rule shall not apply to any material specifically regulated under any of the other District's Rules. ~~by Rule 239, Graphic Arts Operations,~~

104.9 Medical Equipment Manufacturing: The requirements of this rule shall not apply to solvent welding operations used in the manufacturing of medical devices, including, but not limited to, catheters, heart valves, blood cardioplegia machines, tracheotomy tubes, blood oxygenators, and cardiatory reservoirs.

104.10 Research and Development Operations: Except for the work practices required pursuant to Section 305, Sections 302, 303 and 304.1 shall not apply to the testing and evaluation of materials in research and development laboratories, quality assurance laboratories, or analytical laboratories, provided that these sources maintain records that comply with Section 501.

104.11 Small Container: The requirements of this rule shall not apply to materials sold or supplied in non-reusable containers that are designed to hold no more than 8 fluid ounces of materials.

104.12 Tire Repair: The requirements of this rule shall not apply to materials used for tire repair if such products are labeled by the manufacturer: "For Tire Repair Only."

104.13 Undersea Weapons: The requirements of this rule shall not apply to the manufacture, maintenance, or repair of undersea-based weapon systems.

104.14 Ultraviolet Light-Cured Adhesives: The requirements of this rule shall not apply to reactive adhesives that are cured through the application of ultraviolet light, electron beam, visible light, radio frequency, or microwaves.

200 DEFINITIONS

201 ACRYLONITRILE-BUTADIENE-STYRENE (ABS) WELDING ADHESIVE: Any adhesive intended by the manufacturer to weld ABS pipe. ABS pipe is made by reacting

monomers of acrylonitrile, butadiene, and styrene and is normally identified with an "A~~A~~BS" marking.

202 **ADHESIVE:** Any substance that is ~~used to bond one surface to another surface by attachment.~~applied for the purpose of bonding two surfaces together other than by mechanical means.

203 **ADHESIVE OR SEALANT PRODUCT:** Any adhesive, adhesive primer, aerosol adhesive, aerosol adhesive primer, sealant, or sealant primer, as sold by the manufacturer or as applied.

204 **ADHESIVE PRIMER:** A coating applied to a substrate, prior to the application of an adhesive, to provide a bonding surface.

205 **AEROSOL ADHESIVE or ADHESIVE PRIMER:** An adhesive or adhesive primer ~~consisting of a mixture of rubber, resins, liquid and/or gaseous solvents, and propellants packaged in a hand-held, pressurized, non-refillable container. The container expels pressurized aerosol materials in a finely divided spray when a valve on the container is depressed.~~ packaged as an aerosol product in which the spray mechanism is permanently housed in a non-refillable can designed for handheld application without the need for ancillary hoses or spray equipment. Aerosol adhesives include special purpose spray adhesives, mist spray adhesives, and web spray adhesives, as defined in the California Air Resources Board consumer products regulation found in Title 17 of the California Code of Regulations, beginning at Section 94507.

~~**206** **AEROSOL ADHESIVE PRIMER:** A primer used exclusively to provide a bonding surface on substrates for subsequent application of aerosol adhesives. It consists of a mixture of liquid and/or gaseous materials and propellants packaged in a hand-held, pressurized, non-refillable container. The container expels pressurized aerosol primer materials in a finely divided spray when a valve on the container is depressed.~~

~~**207**~~**206** **AEROSOL CLEANING SOLVENT:** A material used as a surface preparation solvent, a cleanup solvent, or as a stripper and ~~consisting of liquid and/or gaseous solvent and propellants packaged in a hand-held, pressurized, non-refillable container. The container expels pressurized aerosol materials in a finely divided spray when a valve on the container is depressed.~~ packaged as an aerosol product in which the spray mechanism is permanently housed in a non-refillable can designed for handheld application without the need for ancillary hoses or spray equipment.

207 **AIRLESS SPRAY:** A spray method in which a pump forces the adhesive through an atomizing nozzle at high pressure (1,000 to 6,000 pounds per square inch, gauge, (psig)).

208 **APPLICATION EQUIPMENT:** A device such as a spray gun, pot, hose, brush, roller, electrostatic sprayer, non-propellant spray bottle, or squeegee, used to apply an adhesive or sealant product, a surface preparation solvent, a cleanup solvent, or a stripper.

209 **ARCHITECTURAL~~ SEALANT/PRIMER~~:** Pertaining ~~Any sealant or sealant primer intended by the manufacturer to be applied~~ to stationary structures, including mobile homes, and their appurtenances. Appurtenances to an architectural structure include, but are not limited to: hand railings, cabinets, bathroom and kitchen fixtures, fences, rain gutters and downspouts, and windows.

210 **AUTOMOTIVE GLASS ADHESIVE PRIMER:** An adhesive primer labeled by the manufacturer to be applied to automotive glass prior to installation of the glass using an

adhesive/sealant. This primer improves the adhesion to pinch weld and blocks ultraviolet light.

211 CERAMIC TILE ~~INSTALLATION~~ ADHESIVE: Any adhesive intended by the manufacturer for the installation of ceramic tiles.

212 CHLORINATED POLYVINYL CHLORIDE (CPVC) WELDING ADHESIVE: Any adhesive intended by the manufacturer to weld CPVC plastic pipe.

213 CHLORINATED POLYVINYL CHLORIDE (CPVC) PLASTIC: CPVC plastic is a polymer of the monomer that contains 67 percent chlorine and is normally identified with a CPVC marking.

214 CLEANUP SOLVENT: A VOC-containing material used to:

214.1 Remove a loosely held uncured (i.e., not dry to the touch) adhesive or sealant from a substrate, or

214.2 Clean equipment that was used to apply an adhesive or sealant product.

215 CLOSED CONTAINER: A covered receptacle, which has no visible gaps where the cover and the main body of the receptacle meet.

216 COMPUTER DISKETTE JACKET MANUFACTURING ADHESIVE: Any adhesive intended by the manufacturer to bond the fold-over flaps to the body of a vinyl computer diskette jacket.

217 CONTACT ADHESIVE: An adhesive, also known as Contact Bond Adhesive, that is intended by the manufacturer for application to both surfaces to be bonded together, is allowed to dry before the two surfaces are placed in contact with each other, forms an immediate bond that is impossible, or difficult, to reposition after both adhesive-coated surfaces are placed in contact with each other, and does not need sustained pressure or clamping of surfaces after the adhesive-coated surfaces have been brought together using sufficient momentary pressure to establish full contact between both surfaces. Contact adhesive does not include rubber cements that are primarily intended for use on paper substrates. Contact adhesive also does not include vulcanizing fluids that are designed and labeled for tire repair only.

~~An adhesive that forms an instantaneous bond that cannot be repositioned when substrates, on which the adhesive is applied and allowed to dry, are brought together using momentary pressure.~~

218 CONTROL DEVICE: Equipment that is utilized as part of an emission control system, and which destroys, absorbs or otherwise eliminates or reduces the emission of Volatile Organic Compounds from adhesive/sealant operations.

219 COVE BASE INSTALLATION ADHESIVE: Any adhesive intended by the manufacturer for the installation of cove base (or wall base), which is generally made of vinyl or rubber, onto a wall or vertical surface at floor level.

220 CURED: Dry to the touch.

221 CYANOACRYLATE ADHESIVE: An adhesive with a cyanoacrylate content of at least 95~~90~~% by weight~~ and which emits less than 20 grams per liter of VOC as determined pursuant to Section 502.11~~.

222 DRYWALL ~~INSTALLATION~~: The installation of gypsum drywall to studs or solid surfaces.

223 ENCLOSED GUN CLEANER:

223.1 A device that is used for the cleaning of spray guns, pots, cups, and hoses, that has a closed solvent container, is not open to the ambient air when in use, and has a mechanism to force the cleanup material through the gun while the cleaner is in operation; or

223.2 A device that is used for the cleaning of spray guns, pots, cups, and hoses, that has a closed solvent container, uses non-atomized solvent flow to flush the spray equipment, and collects and returns the discharged solvent to the closed container.

224 ETHYLENE PROPYLENE DIENE MONOMER (EPDM) ROOF MEMBRANE: A prefabricated sheet of elastomeric material composed of ethylene propylene diene monomer and that is field applied to a building roof using one layer of membrane material.

~~224~~225 EXEMPT COMPOUNDS: For the purposes of this rule, "Exempt Compounds" are as defined in Rule 102, Definitions.

~~225~~226 FIBERGLASS: A fiber made of fine filaments of glass that is similar in appearance to wool or cotton fiber.

~~226~~227 FLEXIBLE VINYL: A nonrigid polyvinyl chloride plastic with at least five percent, by weight, of plasticizer content, as determined per Section 502.8.

~~227~~228 FLEXIBLE VINYL ADHESIVE: An aerosol adhesive designed to bond flexible vinyl to substrates.

~~228~~229 HAND APPLICATION METHODS: The application of an adhesive or sealant product by manually held equipment. Such equipment includes: paint brushes, hand rollers, trowels, spatulas, daubers, rags, sponges, and mechanically or pneumatically driven syringes that do not atomize the applied products.

~~229~~230 HIGH PRESSURE LAMINATE: Sheets of materials, consisting of paper, fabric, or other core material, that have been laminated at temperatures exceeding 265 degrees F, and at pressures between 1,000 and 1,400 pounds per square inch.

~~230~~231 HIGH-VOLUME LOW-PRESSURE (HVLP) APPLICATION EQUIPMENT: Spray e~~E~~quipment ,permanently labeled as such, used to apply coating by means of a spray gun which is designed to be operated , ~~,~~ and which is operated between 0.1 and 10.0 ~~pounds per square inch gauge (~~psig~~)~~ air atomized pressure, measured dynamically at the center of the air cap and at the air horns.

~~231~~232 HOUSEHOLD ADHESIVE: An adhesive subject to ~~Title 17~~, the Air Resources Board consumer products regulation, Sections 94507-94517, Title 17, California Code of Regulations., ~~, Sections 94507-94517 (Consumer Products).~~ Household adhesives do not include units of product, less packaging, that weigh more than one pound or contain more than 16 fluid ounces.

233 INDOOR CARPET ADHESIVE: An adhesive intended by the manufacturer to be used during the installation of a carpet that is in an enclosure and is not exposed to ambient weather conditions during normal use.

~~232~~234 INDOOR FLOOR COVERING ~~INSTALLATION~~ ADHESIVE: Any adhesive intended by the manufacturer for the installation of wood flooring, carpet, ~~carpet pads, rubber flooring,~~ resilient tile, vinyl tile, vinyl backed carpet, resilient sheet and roll, or artificial grass. Such installed materials are in an enclosure and are not exposed to ambient weather conditions during normal use~~. Indoor floor covering installation does not include ceramic~~

~~tile installation or subfloor installation~~. Adhesives used to install ceramic tile and perimeter bonded sheet flooring with vinyl backing onto a non-porous substrate, such as flexible vinyl, are excluded from this category.

~~233~~235 **KEY SYSTEM OPERATING PARAMETER:** A variable that is critical to the operation of an emission control system and that ensures both operation of the system within the system manufacturer's specifications, and compliance with the ~~overall~~ control equipment efficiency and emission collection system efficiency standard required by Section ~~305~~306. Such variables may include, but are not limited to, hours of operation, temperature, flow rate, and pressure.

~~234~~236 **LEAK:** A visible liquid solvent loss or a solvent vapor (mist) loss from unintended openings in a container.

~~235~~237 **LOW-SOLIDS MATERIAL:** A material containing no more than 120 grams of solids per liter (1.0 pound of solids per gallon) of product.

~~236 **LOW VOLUME LOW PRESSURE (LVLP) APPLICATION EQUIPMENT:** Spray coating application equipment with air pressure between 0.1 and 10.0 pounds per square inch gauge (psig) and air volume less than 15.5 cubic feet per minute (cfm) per spray gun and which operates at a maximum fluid delivery pressure of 50 psig.~~

~~237~~238 **MARINE DECK SEALANT/SEALANT PRIMER:** Any sealant or sealant primer intended by the manufacturer to seal gaps on wooden marine decks.

~~238~~239 **MATERIAL:** Any material containing VOC including but not limited to, an adhesive, adhesive primer, aerosol adhesive, aerosol adhesive primer, sealant, sealant primer, catalyst, colorant, stripper, or solvents used in cleaning.

~~239~~240 **METAL TO URETHANE/RUBBER MOLDING OR CASTING ADHESIVE:** Any adhesive intended by the manufacturer to bond metal to high-density or elastomeric urethane or molded rubber materials, in heater molding or casting processes, to fabricate products such as rollers for computer printers or other paper handling equipment.

241 **MOTOR VEHICLE:** Any self-propelled vehicle, including, but not limited to cars, trucks, buses, golf carts, vans, motorcycles, tanks, and armored personnel carriers.

242 **MOTOR VEHICLE ADHESIVE:** An adhesive, including glass bonding adhesive, used at a facility that is not an automobile or light-duty truck assembly coating facility, applied for the purpose of bonding two vehicle surfaces together without regard to the substrates involved.

243 **MOTOR VEHICLE WEATHERSTRIP ADHESIVE:** An adhesive, used at a facility that is not an automobile or light-duty truck assembly coating facility, applied to weatherstripping materials for the purpose of bonding the weatherstrip material to the surface of the vehicle.

~~240~~244 **MULTIPURPOSE CONSTRUCTION ADHESIVE:** Any adhesive intended by the manufacturer for the installation or repair of various construction materials, including, but not limited to, drywall, subfloor, panel, fiberglass reinforced plastic, ceiling tile, and acoustical tile.

~~241~~245 **NONCOMPLIANT MATERIAL:** A material that:

~~241~~245.1 E~~e~~xceeds the VOC content limits specified in Sections 302, 303, and 304.1, and is not exempt pursuant to Section 104 and which is not used with emission control equipment pursuant to Section ~~305~~306; or

~~241~~245.2 E~~e~~xceeds the VOC content limit and/or composite vapor pressure limit, as applicable, in Section 304.1 and which is not used with emission control equipment pursuant to Section ~~305~~306.

~~242~~246 **NON-MEMBRANE ROOF ~~INSTALLATION/REPAIR~~ ADHESIVE/SEALANT:** Any adhesive or sealant intended by the manufacturer for the installation or repair of non-membrane roofs, but is not intended for the installation of prefabricated single-ply roof membrane. With regard to non-membrane roof installation/repair adhesives, this category includes plastic or asphalt roof cement, asphalt roof coatings, and cold application cement.

~~243~~247 **NON-POROUS MATERIAL:** A material which does not have tiny openings, often microscopic, to allow the absorption or discharge of fluids.

~~244~~248 **OUTDOOR FLOOR COVERING ~~INSTALLATION~~ ADHESIVE:** Any adhesive intended by the manufacturer for the installation of floor covering that is not in an enclosure and is exposed to ambient weather conditions during normal use. Outdoor floor covering installation does not include ceramic tile installation or subfloor installation.

~~245~~249 **PANEL ~~INSTALLATION~~:** The installation of plywood, pre-decorated hardboard, tile board, fiberglass reinforced plastic, and similar pre-decorated or non-decorated panels to studs or solid surfaces.

250 **PERIMETER BONDED SHEET FLOORING ~~INSTALLATION~~ ADHESIVE:** The installation of sheet flooring with vinyl backing onto a nonporous substrate using an adhesive designed to be applied only to a strip of up to four inches wide around the perimeter of the sheet flooring.

~~246~~251 **PLASTIC:** A synthetic material chemically formed by the polymerization of organic (carbon-based) substances.

~~247~~252 **PLASTIC CEMENT WELDING ADHESIVE:** Any adhesive made of resins and solvents that is formulated to dissolve the surfaces of plastic, except ABS, PVC, and CPVC plastic, to form a bond between mating surfaces.

~~248~~253 **PLASTIC CEMENT WELDING ADHESIVE PRIMER:** Any primer intended by the manufacturer to prepare plastic substrates prior to bonding or welding.

254 **PLASTIC FOAM:** A foam constructed of plastic material.

~~249~~255 **PLASTICIZER:** A material, such as a high boiling point organic solvent, that is incorporated into a vinyl to increase its flexibility, workability, or distensibility, as determined by ASTM Method E-260-96.

~~250~~256 **POLYVINYL CHLORIDE (PVC) WELDING ADHESIVE:** Any adhesive intended by the manufacturer to weld PVC plastic pipe.

~~251~~ ~~**POLYVINYL CHLORIDE (PVC) WELDING SEALANT:** A sealant designed to adhere to polyvinyl chloride (PVC) by dissolving its surface and to fill or seal gaps between PVC surfaces or between PVC and other surfaces.~~

~~252~~257 **POROUS MATERIAL:** A material whose surface is permeable to liquids; such materials include, but are not limited to~~, foam~~, paper ~~, corrugated~~ and card~~paper~~board~~, stone.~~, ~~and wood~~ For purposes of this rule, porous material does not include wood.

~~253~~258 **PROPELLANT:** A fluid under pressure that expels the contents of a container when a valve is opened.

~~254~~259 **REACTIVE ADHESIVE:** An adhesive containing 20 grams or less per liter (0.17 lbs/gal) of VOCs actual content~~, less water and exempt compounds, as applied~~, that cures upon exposure to ultraviolet light, electron beam, visible light, radio frequency, or microwave.

260 **REINFORCED PLASTIC COMPOSITE:** A composite material consisting of plastic reinforced with fibers.

261~~55~~ **ROADWAY SEALANT:** Any sealant intended by the manufacturer to be applied to public streets, highways, and related surfaces such as curbs, berms, driveways, and parking lots.

~~256~~262 **RUBBER:** Any natural or manmade rubber substrate, including, but not limited to: styrene-butadiene rubber, polychloroprene (neoprene), butyl rubber, nitrile rubber, chlorosulfonated polyethylene, and ethylene propylene diene terpolymer.

~~257~~263 **RUBBER FLOORING:** Flooring material in which both the back and the top surface are made of synthetic rubber, and which may be in sheet or tile form.

264 **RUBBER VULCANIZATION BONDING:** The bonding of rubber to metal, rubber, or polyester or nylon fabrics during one or more of the following vulcanization processes:

264.1 Molded vulcanization: The application of heat and pressure to uncured rubber in a mold;

264.2 Sheet-applied vulcanization: The application of heat after rubber stock sheets have been adhered to the walls of tanks, tankers, elbow joints, protective earthquake building pads, or rail cars; or the application of heat after one or more layers of rubber stock sheets have been built up to form a rubber product;

264.3 ~~Cold vulcanization~~Cold vulcanization: The chemical reaction of an adhesive with rubber stock sheets that are adhered to earthmoving equipment, other high impact/abrasion devices, or industrial belting devices, without the application of heat or pressure. Rubber vulcanization bonding does not include tire retreading.

~~258~~265 **SEALANT:** Any material with adhesive properties that is applied as a rope or bead and that is formulated for use primarily to fill, seal, waterproof, or weatherproof gaps or joints between two surfaces. Sealants include caulks. Sealants do not include sealers that are applied as continuous coatings.

~~259~~266 **SEALANT PRIMER:** Any material intended by the manufacturer for application to a substrate, prior to the application of a sealant, to enhance the bonding surface.

267 **SHEET RUBBER LINING INSTALLATION:** The process of applying sheet rubber liners by hand to metal or plastic substrates to protect the underlying substrate from corrosion or abrasion. These operations also include laminating sheet rubber to fabric by hand.

~~260~~268 **SINGLE-PLY ROOF MEMBRANE:** A prefabricated single sheet of rubber, normally ethylene-propylene diene terpolymer, that is field applied ~~in a single layer~~ to a building roof using one layer of membrane material. For the purposes of this rule, single-ply roof ~~(normally a flat roof)~~ membrane does not include membranes prefabricated from ethylene-propylene diene monomer (EPDM).

269 **SINGLE-PLY ROOF MEMBRANE ADHESIVE:** An adhesive intended by the manufacturer, and so –labeled, for use in the installation or repair of single-ply roof

membrane. Installation includes, as a minimum, attaching the edge of the membrane to the edge of the roof and applying flashings to vents, pipes and ducts that protrude through the membrane. Repair includes gluing the edges of torn membrane together, attaching a patch over a hole and reapplying flashings to vents, pipes or ducts installed through the membrane.

270 **SINGLE-PLY ROOF MEMBRANE ADHESIVE PRIMER:** A primer intended by the manufacture for use to clean and promote adhesion of the single-ply roof membrane seams or splices prior to bonding, and labeled as such.

271 **SINGLE-PLY ROOF MEMBRANE SEALANT:** A sealant intended by the manufacturer to be used for the installation or repair of single-ply roof membrane to the edge of the roof and applying flashings to vents, pipes, or ducts that protrude through the membrane.

~~261 **SOLVENT WELDING:** The softening of the surfaces of two substrates by wetting them with a solvent and/or adhesive, and joining them together using a chemical and/or physical reaction(s) to form a fused union.~~

~~262~~272 **SOLID MATERIAL:** The nonvolatile portion of an adhesive or sealant product, surface preparation solvent, cleanup solvent, or stripper that remains after heating a sample of the product at 110°C for one hour.

~~263~~273 **SOLVENT WELDING:** The softening of the surfaces of two substrates by wetting them with a solvent and/or adhesive, and joining them together with a chemical and/or physical reaction(s) to form a fused union.

~~264~~274 **STATIONARY SOURCE**: Any building, structure, facility, or emissions unit which emits or may emit any pollutant directly or as a fugitive emission. This includes all pollutant-emitting activities which:

~~264~~274.1 Belong to the same industrial grouping, and

~~264~~274.2 Are located on one property or on two or more contiguous properties, and

~~264~~274.3 Are under the same or common ownership, operation, or control or which are owned or operated by entities, which are under common control.

Pollutant-emitting activities shall be considered as part of the same industrial grouping if they:

~~264~~274.4 Belong to the same two-digit standard industrial classification code, or

~~264~~274.5 Are part of a common production process. (Common production process includes industrial processes, manufacturing processes and any connected processes involving a common material.)

~~265~~275 **STRIPPER:** A liquid used to remove cured adhesives and/or cured sealants.

~~266~~276 **STRUCTURAL GLAZING ADHESIVE:** Any adhesive intended by the manufacturer to adhere glass, ceramic, metal, stone, or composite panels to exterior building frames.

~~266~~77 **STRUCTURAL WOOD MEMBER ADHESIVE:** An adhesive intended by the manufacturer to be used for the construction of a load – bearing joint in wooden joists, trusses, or beams.

~~267~~278 **SUBFLOOR:** The installation of subflooring material, typically plywood, over flooring joists. Subfloor installation includes the construction of any load bearing joints in joists or trusses. Subflooring is covered by a finished surface material.

~~268~~279 **SUBSTRATE:** The material onto which an adhesive or sealant product, surface preparation solvent, cleanup solvent, or stripper is applied.

280~~269~~ **SURFACE PREPARATION SOLVENT:** Any VOC-containing material used to remove contaminants such as dust, soil, oil, grease, etc., from a substrate prior to the application of an adhesive or sealant product.

~~270~~281 **THIN METAL LAMINATING ADHESIVE:** Any adhesive intended by the manufacturer to bond multiple layers of metal to metal or metal to plastic in which the thickness of the bond line(s) is less than 0.025 mils (0.000025 inches).

~~271~~282 **TIRE REPAIR:** To mend a hole, tear, fissure, blemish, or defect in a tire casing by grinding and/or gouging, applying adhesive, and attaching replacement rubber.

~~270~~283 **TIRE RETREAD ADHESIVE:** An adhesive applied to the back of precured tread rubber and to the casing and cushion rubber. Tire retread adhesive may also be used to seal buffed tire casings to prevent oxidation while the tire is being prepared for a new tread.

~~27~~284 **TOP AND TRIM ADHESIVE:** An adhesive intended by the manufacturer to be used for installing automotive or marine trim, including, but not limited to headliners, vinyl tops, vinyl trims, sunroofs, dash covering, door covering, floor covering, panel covering and upholstery.

~~273~~285 **TRAFFIC MARKING TAPE ADHESIVE PRIMER:** An adhesive primer intended by the manufacturer to be applied to surfaces prior to the installation of traffic marking tape. Traffic marking tape is a pre-formed reflective film intended by the manufacturer to be applied to public streets, highways, and other surfaces including, but not limited to, curbs, berms, driveways, and parking lots. It is not one of the "Traffic Coatings" included in and defined in Rule 218, Architectural Coatings.

286 **VCT AND ASPHALT TILE ADHESIVE:** An adhesive intended by the manufacturer for the installation of vinyl composite tile or asphalt tile flooring.

~~409~~287 **~~CALCULATION FOR~~ VOC COMPOSITE PARTIAL PRESSURE:** The VOC composite partial pressure is the sum of the partial pressures of the compounds defined as VOCs, and shall be calculated by the following equation:

$$PP_c = \frac{\sum_{i=1}^{n} \frac{(W_i)(VP_i)}{MW_i}}{\frac{W_w}{MW_w} + \sum_{e=1}^{n} \frac{W_e}{MW_e} + \sum_{i=1}^{n} \frac{W_i}{MW_i}}$$

Where: PP_c = VOC composite partial pressure at 20°C, in mm Hg.

W_i = Weight of the "i"th VOC compound, in grams, as determined by ASTM E 260-96

W_w = Weight of water, in grams as determined by ASTM D 3792-99.

W_e = Weight of the "e"th exempt compound, in grams, as determined

MW_i = Molecular weight of the "i"th VOC compound, in grams per g-mole, as given in chemical reference literature.

MW_w = Molecular weight of water, 18 grams per g-mole.

Mw_e = Molecular weight of the "e"th exempt compound, in grams per g-mole, as given in chemical reference literature.

Vp_i = Vapor pressure of the "i"th VOC compound at 20°C, in mm Hg, as determined by Section 502.10 of this rule.

~~274~~288 **VOLATILE ORGANIC COMPOUND (VOC):** Any chemical compound containing at least one atom of carbon, except for the exempt compounds listed in Rule 102, Definitions.

289 VOC CONTENT:

289.1 VOC Regulatory Content: The weight of VOC per combined volume of VOC and material, calculated with the following equation:

VOC Regulatory Content = (Ws – Ww – Wec) / (Vm – Vw – Vec)

289.2 VOC Actual Content: The weight of VOC per volume of material, calculated with the following equation:

VOC Actual Content = (Ws – Ww – Wec) / Vm

Where:

Ws	=	Weight of volatile compounds in grams
Ww	=	Weight of water in grams
Wec	=	Weight of exempt compounds in grams
Vm	=	Volume of material in liters
Vw	=	Volume of water in liters
Vec	=	Volume of exempt compounds, as defined in Rule 102, Definitions, in liters

~~407~~289.3 ~~Calculation of~~ Percent of VOC by Weight: ~~The percent of VOC by weight is~~ T~~t~~he ratio of the weight of the VOC to the weight of the material~~the aerosol adhesive or aerosol adhesive primer as supplied by the manufacturer~~, expressed as a percent~~of VOC by weight~~. The percent of VOC by weight shall be calculated as follows:

$$Percent\ of\ VOC\ by\ Weight = \frac{W_{voc}}{W_p}\ x\ 100$$

Where: W_{voc} = Weight of VOCs in grams
W_p = Weight of material~~the adhesive or adhesive primer, as supplied by the manufacturer,~~ in grams~~.~~

~~**275 VOLATILE ORGANIC COMPOUND (VOC) AS APPLIED:** A VOC as applied, means the VOC content of the material as applied including thinners, reducers, hardeners, retarders, catalysts and additives, and calculated pursuant to Section 502.1.~~

~~**276 VOLATILE ORGANIC COMPOUND (VOC) AS SUPPLIED:** A VOC as supplied, means the VOC content of the original material as supplied by the manufacturer, and calculated pursuant to Section 502.1.~~

~~277~~290 **WATERPROOF RESORCINOL GLUE:** A two-part resorcinol resin based adhesive designed for applications where the bond line must be resistant to conditions of continuous immersion in fresh or salt water.

~~278~~291 **WIPE CLEANING:** The method of cleaning a surface by physically rubbing it with a material such as a rag, paper, abrasive pad, brush, or a cotton swab moistened with a solvent.

~~279~~292 **WOOD FLOORING:** A wood floor surface, which may be in the form of parquet tiles, planks, or strip-wood.

300 STANDARDS

301 MATERIAL APPLICATION METHODS:

301.1 A person shall not use any methods to apply any adhesive or sealant product except the following:

301.1.1~~.~~ Hand application

301.1.2~~.~~ Dip coat

301.1.3~~.~~ Flow coat

301.1.4~~.~~ Brush or roll coat

301.1.5 ~~-~~Electrodeposition

301.1.6~~.~~ Electrostatic spray

301.1.7~~.~~ High-volume low-pressure (HVLP) application equipment

~~301.1.8. Low volume low pressure (LVLP) application equipment~~

301.1.~~9~~8 ~~-~~Aerosol cans

301.1.~~10~~9 ~~-~~Airless spray~~er~~, air-assisted airless spray, air-atomized spray, only for applying adhesives and sealants with a viscosity greater than 200 centipoise, or ~~(F~~for applying contact adhesives~~, only)~~

~~301.1.11 Air-assisted airless sprayer (For applying contact adhesives, only)~~

~~301.1.12. Air-atomized sprayer (For applying contact adhesives, only)~~

301.1.~~13~~10 Any other equivalent method approved in writing by the Air Pollution Control Officer and submitted to and approved by the United States Environmental Protection Agency.

301.2 A person shall not use any methods to apply any surface preparation solvent, cleanup solvent, or stripper except the following:

301.2.1 Wipe cleaning.

301.2.2~~.~~ Non-propellant spray bottles or containers.

301.2.3 An enclosed gun cleaner as defined by Section 223.

301.2.4 Soaking application equipment parts in a closed container.

302 VOC CONTENT LIMITS, ADHESIVES, ADHESIVE PRIMERS, SEALANTS AND SEALANT PRIMERS:

302.1 ~~A~~ No person shall ~~not~~ apply a material that has a VOC regulatory content~~-~~, or a VOC actual content for low-solids material only, in excess of the following limits. VOC regulatory and VOC actual shall be calculated pursuant to Section 289.1 and Section 289.2, respectively, as applied including thinners, reducers, hardeners, retarders, catalysts, and additives.~~as applied, as determined per Section 502.1, , listed in the six tables listed in this section. the based on grams per liter of material or pounds per gallon of material including water and exempt compounds. For all other materials, the VOC content shall be calculated in grams~~

~~per liter of material or pounds per gallon of material, less water and exempt compounds.~~

TABLE 302-1 VOC CONTENT LIMITS ~~LIMITS FOR ADHESIVES~~	
Product Category~~Adhesive~~	**~~Effective April 5, 2005~~ VOC Content g~~m~~/l (lb/gal)**
Architectural Adhesives Products:	
Multipurpose Construction ~~Adhesive~~	200 (1.~~6~~7)
Ceramic Title	130 (1.1)
Cove Base ~~Installation Adhesive~~	150 (1.~~2~~3)
Dry Wall and/or Panel	50 (0.4)
Flooring~~-~~:	
Outdoor Floor Covering ~~Installation Adhesive~~	250 (2.~~0~~1)
Indoor Floor Covering ~~Installation Adhesive~~	150 (1.~~2~~3)
Ceramic Tile ~~Installation Adhesive~~	130 (1.1)
Indoor Carpet or Carpet Pad	150 (1.3)
Rubber Flooring	150 (1.3)
Perimeter Bonded Sheet Vinyl Flooring ~~Installation Adhesive~~	660 (5.5~~4~~)
Subfloor	50 (0.4)
VCT and Asphalt Tile	50 (0.4)
Roofing:	
Single-Ply Roof Membrane ~~Installation/Repair Adhesive~~	250 (2.~~0~~1)
Non-Membrane Roof ~~Installation/Repair Adhesive~~	300 (2.5)
Structural Glazing ~~Adhesive~~	100 (0.8)
Structural Wood Member Glazing	140 (1.2)
Plastic Welding:	
ABS Welding ~~Adhesive~~	400 (3.3)
CPVC Welding ~~Adhesive~~	490 (4.~~0~~1)
PVC Welding ~~Adhesive~~	510 (4.~~2~~3)
Plastic Cement Welding Primer	400 (3.3)
Other Plastic Cement Welding ~~Adhesive~~	450 (3.~~7~~8)
Specialty:	
Contact Adhesive including Specialty Substrates	200 (1.~~6~~7)
Rubber Vulcanization Bonding	850 (7.1)
Tire Retread ~~Adhesive~~	100 (0.8)
Motor Vehicle	250 (2.1)
Motor Vehicle Weatherstrip	750 (6.3)
Top and Trim	540 (4.5)
Thin Metal Laminating ~~Adhesive~~	780 (~~6.4~~6.5)
Computer Diskette Jacket Manufacturing ~~Adhesive~~	850 (~~6.9~~7.1)
Metal to Urethane/Rubber Molding or Casting ~~Adhesive~~	250 (2.~~0~~1)
Waterproof Resorcinol Glue	170 (1.4)
Adhesive Primers:	
Automotive Glass	700 (5.~~7~~8)
Single-Ply Roof Membrane	250 (2.~~0~~1)
Traffic Marking Tape	150 (1.~~2~~3)
Other	250 (2.~~0~~1)
Sealants:	
Architectural	250 (2.~~0~~1)
Marine Deck	760 (6.~~2~~3)

TABLE 302-1 VOC CONTENT LIMITS ~~LIMITS FOR ADHESIVES~~	
Product Category~~Adhesive~~	**~~Effective April 5, 2005~~ VOC Content g~~m~~/l (lb/gal)**
Non-membrane Roof ~~Installation/Repair~~	300 (2.5)
~~PVC Welding Sealant~~	~~Note 1~~
Roadway ~~Sealant~~	250 (2.~~0~~1)
Single-Ply Roof Membrane ~~Sealant~~	450 (3.~~7~~8)
Other	420 (3.~~4~~5)
Sealant Primers:	
Architectural - Non-Porous	250 (2.~~0~~1)
Architectural - Porous	775 (6.~~3~~5)
Marine Deck	760 (6.~~2~~3)
Other	750 (6.3~~1~~)

~~TABLE 302-2~~ ~~VOC CONTENT FOR ADHESIVE PRIMERS~~		
~~Adhesive Primer~~	~~Effective December 1, 1998 VOC Content gm/liter (lb/gal) less water and exempt compounds~~	~~Effective April 8, 2005 VOC Content gm/l (lb/gal)~~
~~Automotive Glass~~	~~700 (5.7)~~	~~700 (5.7)~~
~~Plastic Cement Welding~~	~~650 (5.3)~~	~~400 (3.3)~~
~~Single-Ply Roof Membrane~~	~~250 (2.0)~~	~~250 (2.0)~~
~~Traffic Marking Tape~~	~~150 (1.2)~~	~~150 (1.2)~~
~~Other~~	~~250 (2.0)~~	~~250 (2.0)~~

~~TABLE 302-3~~ ~~VOC CONTENT FOR CONTACT ADHESIVES~~	
~~Product~~	~~VOC Content gm/liter (lb/gal)~~
~~Contact Adhesive including Specialty Substrates~~	~~200 (1.6)~~

~~TABLE 302-4~~ ~~VOC CONTENT FOR SEALANTS~~		
~~Type of Sealant~~	~~Effective December 1, 1998 VOC Content gm/liter (lb/gal) less water and exempt compounds~~	~~Effective April 8, 2005 VOC Content gm/l (lb/gal)~~
~~Architectural~~	~~250 (2.0)~~	~~250 (2.0)~~
~~Marine Deck~~	~~760 (6.2)~~	~~760 (6.2)~~
~~Non-membrane Roof Installation/Repair~~	~~300 (2.5)~~	~~300 (2.5)~~

~~PVC Welding Sealant~~	~~480 (3.9)~~	~~Note 1~~
~~Roadway Sealant~~	~~250 (2.0)~~	~~250 (2.0)~~
~~Single-Ply Roof Membrane Sealant~~	~~450 (3.7)~~	~~450 (3.7)~~
~~Other~~	~~420 (3.4)~~	~~420 (3.4)~~

~~Note 1: PVS Welding Sealant shall comply with the VOC content limitation for other sealant.~~

~~TABLE 302-5~~ ~~VOC CONTENT FOR SEALANT PRIMERS~~		
~~Type of Sealant Primer~~	~~**Effective December 1, 1998 VOC Content gm/liter (lb/gal) less water and exempt compounds**~~	~~**Effective April 8, 2005 VOC Content gm/l (lb/gal)**~~
~~Architectural - Non-Porous~~	~~250 (2.0)~~	~~250 (2.0)~~
~~Architectural - Porous~~	~~775 (6.3)~~	~~775 (6.3)~~
~~Marine Deck~~	~~760 (6.2)~~	~~760 (6.2)~~
~~Other~~	~~750 (6.1)~~	~~750 (6.1)~~

302.2~~:~~ The standards in Table 302-2 apply to applications not specifically identified in Table 302-1. In Table 302-2, if an adhesive is used to bond two different types of substrates with different VOC limits, then the higher of the two VOC limits shall apply.

TABLE 302-~~6~~2 **VOC CONTENT LIMITS FOR ADHESIVE APPLICATIONS ONTO SUBSTRATES**	
~~The standards in this table apply to applications not specifically identified in Tables 302-1, 302-2, 302-3, 302-4, or 302-5. In this table, if an adhesive is used to bond two different types of substrates with different VOC limits, then the higher of the two VOC limits shall apply.~~	
~~**Type of** **Substrate**~~	~~**Effective April 8, 2005**~~ **VOC Content** **g~~m~~/l (lb/gal)**
Flexible Vinyl	250 (2.~~0~~1)
Fiberglass	200 (1.~~6~~7)
Metal	30 (0.3~~2~~)
Porous Material (except wood)	120 (1.0)
Plastic Foam	80 (0.7)
Wood	30 (0.3)
Reinforced Plastic Composite	200 (1.7)
Rubber	250 (2.~~0~~1)
Other ~~Substrates~~	250 (2.1~~0~~)

303 VOC CONTENT LIMITS FOR~~,~~ AEROSOL ADHESIVES ~~AND ADHESIVE PRIMERS:~~

303.1 A person shall not use an aerosol adhesive ~~and adhesive primers~~ unless the adhesive complies with the VOC limit specified in the California Air Resources Board consumer products regulation found in Title 17 of the California Code of Regulations, sections 94507 – 94517, and listed in the table below, in percent by weight, as determined by Sections ~~407~~ 289.3 and 502.2.

~~Table~~ TABLE 303~~.~~-1 ~~MAXIMUM~~ VOC CONTENT LIMITS FOR AEROSOL ADHESIVES ~~AND ADHESIVE PRIMERS~~	
Type of Aerosol Adhesive	**VOC % by Weight**
Adhesives – Aerosol:	
~~–~~Mist Spray Adhesives	65%
~~–~~Web Spray Adhesives	55%
Special Purpose Spray Adhesives:	
~~–~~Mounting, Automotive Engine Compartment, and Flexible Vinyl Adhesives	70%
~~–~~Polystyrene Foam and Automobile Headliner Adhesives	65%
~~–~~Polyolefin and Laminate Repair/Edgebanding Adhesives	60%

303.2 No person shall manufacture for use in the District any aerosol adhesive which contains methylene chloride, perchloroethylene, or trichloroethylene, except that an aerosol adhesive manufactured before January 1, 2002 may be sold, supplied, or offered for sale until January 1, 2005, as long as the product container or package displays the date on which the product was manufactured, or a code indicating such date.

304 VOC CONTENT LIMITS, SURFACE PREPARATION, CLEANUP, AND STRIPPER SOLVENTS: A person shall comply with the following requirements:

304.1 Materials used for surface preparation, cleaning, or stripping shall not exceed the VOC actual content ~~and~~ or the VOC composite partial~~vapor~~ pressure limits specified in the table below. Where VOC limits are shown as both VOC actual content (grams/liter) and VOC composite ~~vapor~~ partial pressure, either may be used as the content limit for the specific application shown. The VOC actual content ~~of the material as applied~~ shall be calculated ~~determined~~ pursuant to Section ~~502.1.~~ 289.2. The composite partial pressure shall be determined using Section 502.9.

TABLE 304-1 **VOC CONTENT ~~OF~~ LIMITS FOR SURFACE PREPARATION, CLEANUP, AND STRIPPER SOLVENTS** ~~Note: Where VOC limits are shown as both grams/liter and composite vapor pressure, either may be used as the content limit for the specific application shown.~~		
Adhesive or Sealant Product Activity For Which the Solvent Is Used	**Actual VOC Content g/l (lb/gal)** **~~gm/liter (lb/gal) less water and exempt compounds~~**	**VOC Composite Partial Pressure Millimeters of Mercury at 20°C (68°F)**
Substrate Preparation ~~Activity~~		
Single-Ply Roof Membrane Installation/Repair	--	45
Electrical Apparatus Components and Electronic Components	500 (4.2)~~900 (7.53)~~	~~33~~18

Medical Devices and Pharmaceuticals	~~900~~ 800 (~~7.3~~6.7)	33	
Other Substrates	70 (0.6)	--	
Cleanup ~~Activity~~			
Application Equipment			
~~Cleaning a~~ Spray Gun in an Enclosed Gun Cleaner	--	~~less than~~ 45	
Soaking ~~Application Equipment~~ in a Closed Container	--	9.5	
~~Application Equipment - No Closed Container, No Enclosed Gun Cleaner~~Other	70 (0.6)	--	
~~**Equipment Other Than Adhesive or Sealant Product Application Equipment**~~Other (Not Application Equipment)	--	~~less than~~ 45	
Solvent Stripping Activity			
~~Adhesive or Sealant Products on~~ Wood Substrates	~~less than~~ 350 (2.9)	2	
~~Adhesive or Sealant Products on Substrates~~ Other ~~Than Wood~~	~~--~~	9.5	

304.2 A person applying any surface preparation solvent, cleanup solvent, or any stripper must use only the following methods:

304.2.1 Wipe cleaning.

304.2.2 Non-propellant spray bottles or containers.

304.2.3 An enclosed gun cleaner as defined by Section 223.

304.2.4 Soaking application equipment parts in a closed container provided that the container does not exceed five gallons in size and the container is kept tightly covered at all times except when accessing the container.

305 WORK PRACTICES FOR ADHESIVE PRODUCTS, SEALANT PRODUCTS, AND SOLVENT CLEANING MATERIALS: A person applying any adhesive products, sealant products, surface preparation, solvent cleaning, cleanup solvent, or any stripper shall comply with the following:

~~304.3~~305.1 Closed containers or pipes shall be used for the disposal of all VOC-containing cloth, sponges, papers, or other materials used for solvent cleaning.

~~304.4~~305.2 All VOC-materials shall be stored in closed containers ~~when not in use~~except when adding, removing, or mixing contents.

305.3 Minimize spills of all VOC-containing materials.

305.4 Convey all VOC-containing materials from one location to another in closed containers or pipes.

305.5 Minimize VOC emission from cleaning of application, storage, mixing, and conveying equipment by ensuring that equipment cleaning is performed without atomizing the cleaning solvent and all spent solvent is captured in closed containers.

~~305~~306 **EMISSION CONTROL EQUIPMENT:** As an alternative to utilizing materials that comply with the VOC limits in Sections 302 through 304.1, a person may use approved air pollution control equipment provided that ~~the equipment complies with~~ the following conditions are met:

~~305~~306.1 The air pollution control equipment is approved by the Air Pollution Control Officer pursuant to Rule 501, General Permit Requirements, and

~~305~~306.2 The air pollution control equipment is designed and operated with:

~~305~~306.2.1 A control equipment efficiency of at least 95 percent on a mass basis, as determined pursuant to Sections 404~~8~~ and 502.5, and

~~305~~306.2.2 An emission collection efficiency of at least 90 percent on a mass basis, as determined pursuant to Section 502.6.

~~404~~306.3 ~~**OPERATION AND MAINTENANCE PLAN:** A person using emission control equipment pursuant to Section 305 shall~~ Submit an Operation and Maintenance Plan to the Air Pollution Control Officer for approval at least 90 days in advance of the date on which VOC emission control system is to be used in lieu of compliance with VOC content limitations. ~~for the emissions control device~~The~~is~~ plan shall specify operation and maintenance procedures that demonstrate continuous operation and compliance of the emissions control equipment during periods of emissions-producing operations. The~~is~~ Plan shall specify key system operating parameters necessary to determine compliance with this rule and describe in detail procedures to maintain the approved control equipment. The plan shall also specify which records must be kept to document these operations and maintenance procedures. The records shall comply with the requirements of Section 501~~ RECORDKEEPING~~. This Plan shall be implemented upon approval by the Air Pollution Control Officer.

400 ADMINISTRATIVE REQUIREMENTS

401 PROHIBITION OF SALE: A person shall not supply, sell, solicit, or offer for sale, any noncompliant materials as defined in Section 245~~1~~. The prohibition in this section shall apply to any material, which will be applied at any physical location within the District.

402 PROHIBITION OF SPECIFICATION: No person shall solicit, require the use of, or specify the application of any material subject to this rule, if the use or application would violate this rule. The prohibition in this section shall also apply to all written or oral contracts under the terms of which any such product or solvent is to be applied within the District.

~~**403 LABELING REQUIREMENTS FOR AEROSOL ADHESIVES:** All aerosol adhesives regulated under Section 303 shall comply with the labeling requirements, applicable to aerosol adhesives, specified in the California Consumer Regulations.~~

403 HVLP MARKING: A person shall not sell, offer for sale, or distribute for use within the District any HVLP gun without a permanent marking, or accurate information provided on company letterhead or in the form of technical literature clearly identifying the spray gun manufacturer, salesperson or distributer, denoting the maximum inlet air pressure in psig at which the gun will operate within the parameters specified in Section 231.

~~**404 OPERATION AND MAINTENANCE PLAN:** A person using emission control equipment pursuant to Section 305 shall submit an Operation and Maintenance Plan for the emissions control device to the Air Pollution Control Officer for approval. This Plan shall specify operation and maintenance procedures that demonstrate continuous operation and compliance of the emissions control equipment during periods of emissions-producing operations. This Plan shall specify key system operating parameters~~

~~necessary to determine compliance with this rule and describe in detail procedures to maintain the approved control equipment. The plan shall specify which records must be kept to document these operations and maintenance procedures. The records shall comply with the requirements of Section 501 RECORDKEEPING. This Plan shall be implemented upon approval by the Air Pollution Control Officer.~~

~~405 CALCULATION FOR DETERMINING VOC CONTENT OF MATERIAL EXCLUDING WATER AND EXEMPT COMPOUNDS:~~ ~~For the VOC content as applied, the volume of material is defined as the volume of the original material plus any material (e.g., thinners, reducers, or catalysts) added to the original material. The weight of VOC per combined volume of VOC and material solids shall be calculated using the following equation:~~

$$G_1 = \frac{W_v - W_w - W_{ec}}{V_m - V_w - V_{ec}}$$

~~Where:~~

~~G_1~~	~~=~~	~~Weight of VOC per volume of material, less water and exempt compounds, in grams per liter~~
~~W_v~~	~~=~~	~~Weight of all volatile compounds, including any volatile materials added to the original material supplied by the manufacturer when calculating the VOC content as applied, in grams~~
~~W_w~~	~~=~~	~~Weight of water, in grams~~
~~W_{ec}~~	~~=~~	~~Weight of exempt compounds, in grams~~
~~V_m~~	~~=~~	~~Volume of material, in liters~~
~~V_w~~	~~=~~	~~Volume of water, in liters~~
~~V_{ec}~~	~~=~~	~~Volume of exempt compounds, in liters~~

~~406 CALCULATION FOR DETERMINING VOC CONTENT OF MATERIAL INCLUDING WATER AND EXEMPT COMPOUNDS:~~ ~~For the VOC content as applied, the volume of material is defined as the volume of the original material, plus any material added to the original material (e.g., thinners or reducers). For the VOC content as supplied, the volume of material is defined as the volume of the original material. The weight of VOC per total volume of material shall be calculated by the following equation:~~

$$G_2 = \frac{W_v - W_w - W_{ec}}{V_m}$$

~~Where:~~

~~G_2~~	~~=~~	~~Weight of VOC per total volume of material, in grams per liter~~
~~W_v~~	~~=~~	~~Weight of all volatile compounds, in grams~~
~~W_w~~	~~=~~	~~Weight of water, in grams~~
~~W_{ec}~~	~~=~~	~~Weight of exempt compounds, in grams~~
~~V_m~~	~~=~~	~~Volume of material, in liters~~

~~407 CALCULATION OF PERCENT OF VOC BY WEIGHT:~~ ~~The percent of VOC by weight is the ratio of the weight of the VOC to the weight of the aerosol adhesive or aerosol adhesive primer as supplied by the manufacturer, expressed as a percent of VOC by weight. The percent of VOC by weight shall be calculated as follows:~~

$$Percent\ of\ VOC\ by\ Weight = \frac{W_{voc}}{W_p}\ x\ 100$$

~~Where:~~

~~W_{voc}~~	~~=~~	~~Weight of VOCs in grams~~
~~W_p~~	~~=~~	~~Weight of the adhesive or adhesive primer, as supplied by the manufacturer, in grams.~~

~~408~~404 CALCULATION FOR DETERMINING PERCENT CONTROL EFFICIENCY AND VOC MASS EMISSION RATE: The VOC mass emission rate shall be calculated both upstream and downstream of the emissions control device and shall be based on the VOC mass concentration and volumetric flowrate, pursuant to Section 502.5 and the following equations:

~~408~~404.1 VOC Mass Emission Rate:

$$M = (Q) * (C) * (60 \frac{m}{hr}) \ (calculated\ upstream\ and\ downstream)$$

Where: M = VOC mass emission rate (upstream and downstream), in lb/hr.
Q = the volumetric flowrate at the inlet (upstream) or exhaust stack outlet (downstream), in standard cubic feet per minute as determined by Section 502.5.
C = the VOC mass concentration at the inlet (upstream) or outlet (downstream), in pounds per standard cubic feet, as determined pursuant to Section 502.5.

~~408~~404.2 The percent control efficiency is calculated as follows:

$$\%CE = \left(\frac{M_u - M_d}{M_u} \right) * 100$$

Where: CE = control efficiency.
M_u = the upstream VOC mass emission rate, in lb/hr.
M_d = the downstream VOC mass emission rate, in lb/hr.

~~409 CALCULATION FOR VOC COMPOSITE PARTIAL PRESSURE: The VOC composite partial pressure is the sum of the partial pressures of the compounds defined as VOCs, and shall be calculated by the following equation:~~

$$\cancel{PP_c = \frac{\sum_{i=1}^{n} \frac{(W_{i)}(VP_i)}{MW_i}}{\frac{W_w}{MW_w} + \sum_{e=1}^{n} \frac{W_e}{MW_e} + \sum_{i=1}^{n} \frac{W_i}{MW_i}}}$$

~~Where: PP_e = VOC composite partial pressure at 20°C, in mm Hg.~~
~~W_i = Weight of the "i"th VOC compound, in grams, as determined by ASTM E 260-96~~
~~W_w = Weight of water, in grams as determined by ASTM D 3792-99.~~
~~W_e = Weight of the "e"th exempt compound, in grams, as determined~~
~~MW_i = Molecular weight of the "i"th VOC compound, in grams per g-mole, as given in chemical reference literature.~~
~~MW_w = Molecular weight of water, 18 grams per g-mole.~~
~~Mw_e = Molecular weight of the "e"th exempt compound, in grams per g-mole, as given in chemical reference literature.~~
~~Vp_i = Vapor pressure of the "i"th VOC compound at 20°C, in mm Hg, as determined by Section 502.10 of this rule.~~

~~410~~405 ~~PRODUCT INFORMATION REQUIREMENTS FOR SELLERS:~~LABELING REQUIREMENTS: ~~Any person who sells~~ A~~a~~ny material subject to this rule shall be

labeled pursuant to Sections 405.1 through 405.4 as appropriate.~~shall make available to the purchaser at the time of sale the following information:~~

~~410.1 The material type by name/code/manufacturer;~~

~~410~~405.1~~2~~ VOC Content: Each container of any material subject to this rule shall display the maximum VOC regulatory content, or the maximum VOC actual content for solvents and low-solids products, expressed in grams per liter or pounds per gallon.~~For materials subject to Section 302: The maximum VOC content of the material as applied. The VOC content shall be displayed as grams of VOC per liter of material (or pounds of VOC per gallon), excluding water and exempt compounds. For low solids materials, the VOC content shall be displayed as grams of VOC per liter of material (or pounds of VOC per gallon), including water and exempt compounds;~~

~~410.3 For aerosol adhesives regulated under Section 303: The maximum VOC content as applied. The VOC content shall be displayed as percent by weight;~~

~~410.4~~405.2 For materials subject to Section 304.1: Manufacturers of any solvents subject to this rule shall indicate on the solvent container, or on a separate product data sheet or material safety data sheet, the name of the solvent, manufacturer's name, t~~T~~he maximum VOC actual content, density of the solvent, and the total VOC composite partial pressure of the material~~ as applied~~. The VOC actual content shall be displayed as grams ~~of VOC~~ per liter ~~of material (~~or pounds ~~of VOC~~ per gallon~~), including water and exempt compounds as determined pursuant to Section 502.1~~. The composite ~~vapor~~ partial pressure shall be displayed in millimeters of mercury at 20 ^{o}C (68 ^{o}F) as determined pursuant to Section 502.9~~;~~.

~~410.5~~405.3 Thinning recommendation: Each container of adhesive product or sealant product subject to this rule shall display a statement of a manufacture's recommendations regarding thinning, or reducing, or mixing of the adhesive product with any other VOC containing material. Mixing recommendations shall specify a ratio which results in a compliant, as applied, adhesive product, or sealant product.~~For all materials subject to Sections 302 and 304.1: Manufacturers' and Suppliers' recommendations regarding thinning, reducing, or mixing.~~

40~~3~~5.4 ~~———~~Labeling requirements for aerosol adhesives: All aerosol adhesives regulated under Section 303 shall comply with the labeling requirements, applicable to aerosol adhesives, specified in the California Air Resources Board consumer products regulation found in Title 17 of the California Code of Regulations.

500 MONITORING AND RECORDS

501 RECORDKEEPING:

In addition to any applicable record-keeping requirements of either Rule 502, New Source Review, Rule 507, Federal Operating Permit Program, Rule 511, Potential to Emit, or any other District rule which may be applicable, any person applying adhesive or sealant products, surface preparation solvents, cleanup solvents, or strippers subject to any provision of this rule shall maintain the following records, for non-exempt materials in order to evaluate compliance:

501.1 Product Data: A list of currently used adhesive or sealant products, surface preparation solvents, cleanup solvents, or strippers shall be provided and maintained. The list shall include all of the following items for each material used:

501.1.1 The material's manufacturer, product name, and product number or code.

501.1.2 Classification according to the terminology used in Sections 302, 303, and 304. of this rule (e.g.,"PVC Welding Adhesive", "Adhesive Applied to Metal", "Substrate Preparation", "Medical Devices", etc.).

501.1.3 The material's VOC regulatory content, or VOC ~~content~~actual content, or weight percentage of volatiles ~~as applied~~, determined according to Sections 289.1, 289.2, and 289.3, ~~405,406 and 407,~~ when used in the mixing ratios recommended by the manufacturer. Labeling of aerosol adhesive containers shall comply with the requirements of Section ~~403~~405.4.

501.1.4 The actual mixing ratio, if different from the manufacturer's recommendation, used in applying the material.

501.2 Product Usage and Frequency: Any person using materials regulated by this rule shall record and maintain records of the monthly usage of each individual material as listed pursuant to Section 501.1.

501.3 Emission Control Equipment Records:

501.3.1 A person using emission control equipment as a means of alternate compliance pursuant to Section ~~305~~306, shall maintain records on a daily basis, showing the type and volume of coatings and solvents used.

501.3.2 A person using emission control equipment as a means of alternate compliance with this rule pursuant to Section ~~305~~306, shall maintain daily records of key system operating and maintenance procedures which will demonstrate continuous operation and compliance of the emission control system during periods of emission-producing activities. Key system operating parameters are those necessary to ensure compliance with the requirements of Section ~~305~~306, and are defined in Section ~~233~~235.

501. ~~5~~4 Retention of Records: All records required by this rule shall be retained for at least three years, except for sources subject to Rule 507, Federal Operating Permit Program, which shall be retained for at least five years. Such records shall be made available to the Air Pollution Control Officer upon request.

502 TEST METHODS:

502.1 Determination of VOC Content: Except as provided in Sections 502.2 and 502.3, VOC content of non-aerosol adhesive or sealant products, surface preparation solvents, cleanup solvents, or strippers shall be determined in accordance with United States Environmental Protection Agency (U.S. EPA) Method 24 or ~~United States Environmental Protection Agency~~U.S. EPA Method 24A.

502.2 Determination of VOC Content of Aerosol Adhesives Primers: The VOC content of aerosol adhesive primers shall be determined using South Coast Air Quality Management District Test Method 305 ~~for aerosol coatings~~, "Determination of Volatile Organic Compounds (VOC) in Aerosol Applications," California Air Resources Board Method 310, "~~Determination of Volatile Organic Compounds~~

~~(VOC) in Consumer Products~~Products and Reactive Organic Compounds (VOC) in Consumer Products,"~~,~~ or equivalent methods approved by the ~~United States Environmental Protection Agency~~U.S. EPA.

502.3 Determination of VOC Content of Plastic Welding Cement Adhesive/Primer: The VOC content of ABS, CPVC, PVC, or other plastic welding cement adhesive or any plastic welding cement primer shall be determined by using the South Coast Air Quality Management District's "Determination of Volatile Organic Compounds (VOC) in Materials Used for Pipes and Fittings", Method ~~316a~~316A.

502.4 Determination of Compounds Exempt From VOC Definition: Exempt compounds referenced in Section 224 and listed in Rule 102, Definitions, shall be determined in accordance with ASTM Method D~~-~~4457-85, "Test Method for Determination of Dichloromethane and 1,1,1-Tricholoroethane in Paints and Coatings by Direct Injection into a Gas Chromatograph," or California Air Resources Board Method 432, "Determination of Dichloromethane and 1,1,1-Trichoroethane in Paint and Coatings." If any of the perfluorocarbons or volatile cyclic and linear methyl siloxanes are being claimed as exempt compounds, the person making the claim must state in advance which compounds are present, and the ~~United States Environmental Protection Agency~~U.S. EPA approved test method used to make the determination of these compounds.

502.5 Determination of Control Efficiency: Control efficiency of emissions control equipment shall be determined in accordance with ~~United States Environmental Protection Agency~~U.S. EPA Method 18, 25, or 25A; or ~~United States Environmental Protection Agency Method~~U.S. EPA 2 or 2C (whichever is applicable). The U.S. EPA Method 18 or CARB Method 422 "Determination of Volatile Organic Compounds Emissions from Stationary Sources" shall be used to determine emissions of exempt compounds.

502.6 Determination of Collection Efficiency: Efficiency of the collection system shall be determined in accordance with the ~~United States Environmental Protection Agency's~~U.S. EPA "Guidelines for Determining Capture Efficiency, January 9, 1995". Individual collection efficiency test runs subject to the ~~United States Environmental Protection Agency's~~U.S. EPA technical guidelines shall be determined by:

502.6.1 Applicable U.S. EPA M~~m~~ethods 204, 204A, 204B, 204C, 204E, and/or 204F; or

502.6.2 The South Coast Air Quality Management District "Protocol for Determination of Volatile Organic Compound (VOC) Capture Efficiency"; or

502.6.3 Any other method approved by the U.S. EPA, the California Air Resources Board, and the Air Pollution Control Officer.

502.7 Determination of VOC Content of Emissions: The VOC content of emissions shall be determined by ~~United States Environmental Protection Agency~~U.S. EPA Method 18.

502.8 Determination of Plasticizer Content: The test method used to determine plasticizer content of flexible vinyls shall be ASTM Method E260-~~73~~96, "General Gas Chromatography Procedures".

502.9 Determination of VOC Composite Partial Pressure: VOC composite partial pressure shall be determined in accordance with ASTM Method E260-~~91~~ 96 for organic compounds, and ASTM Method D~~-~~3792-86, "Test Method for Water and

Water Reducible Paints by Direct Injection into a Gas Chromatograph" ~~for water content as applicable~~, and Sections ~~409~~288, and 502.10 of this rule.

502.10 Determination of Vapor Pressure: Vapor pressure of a VOC shall be determined in accordance with ASTM Method D2879-~~86~~10, "Test Method for Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature or Liquids by Isoteniscope", or may be obtained from standard reference texts, such as:

502.10.1 "The Vapor Pressure of Pure Substances", Boublik, Fried, and Hala; Elsevier Scientific Publishing Company, New York.

502.10.2 "Perry's Chemical Engineer's Handbook", McGraw-Hill Book Company.

502.10.3 "CRC Handbook of Chemistry and Physics", Chemical Rubber Publishing Company.

502.10.4 "Lange's Handbook of Chemistry", John Dean, editor, McGraw-Hill Book Company.

502.11 Determination o~~O~~f VOC Content o~~O~~f Cyanoacrylate Adhesives: The VOC content of cyanoacrylate adhesives shall be determined by the South Coast Air Quality Management District's Method 316B.

502.12 Determination of Viscosity: The viscosity shall be determined by ASTM Method D1084-88, "Standard Test Methods for Viscosity of Adhesives".

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