STAKEHOLDER REVIEW DRAFT 082710B GMP

OTC Model Rule for Solvent Degreasing 2011

This model rule was developed by the Ozone Transport Commission (OTC) as part of a regional effort to attain and maintain the one-hour ozone standard, address emission reduction shortfalls that were identified by the U.S. Environmental Protection Agency in specific State's plans to attain the one-hour ozone standard, and reduce eight-hour ozone levels. This is an amendment to the OTC Model Rule for Solvent Cleaning that was developed in 2000 and approved by the OTC Commissioners in 2001.

This 2011 OTC Model Rule for Solvent Degreasing was based on an amalgam of two California air district rules; Rule 1122 of the South Coast Air Quality Management District (SCAQMD)as amended May1, 2009 and Santa Barbara County Air Pollution Control District Rule 321(for Remote Reservoir Cleaner only) as amended September 18, 1997.

The compliance date for this 2011 OTC Model rule shall be January 1, 2014.

Please note that States opting to promulgate rules based on this model rule must comply with State specific administrative requirements and procedures.

Because the 2001 model rule did not provide for exemptions and certain users whose in-process parts or products may not be cleaned properly using the cleaning agents required in this 2014 model rule and may thus require exemptions, the 2001 model rule will remain in effect so those users now under a state version of the 2001 model rule who are granted specific exemptions under the 2014 model rule may continue to operate under the 2001 state version thus avoiding SIP "backsliding". Exemptions should be determined on a case-by-case basis and all solvent degreasing operations at a given facility may not qualify for exemption. Exemptions found worthy by SCAQMD have been included in this model rule principally in section 7.0. No exemptions granted under this OTC Solvent Degreasing Model Rule will exempt sources from the provisions of Subpart T.

Also, each state will need to adjust their new rule wording to handle the transition from their old rule (reflecting the 2001 OTC model rule) to the new rule (reflecting the 2011 model rule with a January 1, 2014 compliance date) as well as provide for those "exempted" sources which may stay regulated by the old rule.

Please note the 2001 OTC model rule was specific for only metal parts [see Env-Axxx.02 (a), (b) and (d); although (c) for in-line vapor cleaning machines does not specify the type of parts cleaned] and the 2011 OTC model rule regulates the cleaning (degreasing) of all types of parts.

NESHAP solvents, which include; carbon tetrachloride, chloroform, perchloroethylene, 1,1,1-trichloroethane, trichloroethylene and methylene chloride are regulated under 40 CFR Part 63 Subpart T "National Emissions Standards for Halogenated Solvent Cleaning" Section 63.461 (usually referred to as "SubpartT) . Note that only carbon tetrachloride, chloroform and trichloroethylene are currently considered VOC under federal guidelines and most state guidelines. Any NESHAP halogenated solvent that is considered a VOC must meet the requirements of this OTC model rule as well as Subpart T. In particular this means that these particular solvents cannot exceed 25 g/l when used in a batch-loaded cold cleaner, open-top vapor degreaser (or conveyorized versions) and are then not subject to Subpart T as Subpart T exempts solvent use below 5%. In order to use these NESHAP VOC in a solvent degreaser at greater than 25 g/l, an airless/air-tight cleaning system must be used. If concentrations of 5% or greater are used, then all other provisions of Subpart T may apply if the NESHAP VOC solvent concentration is 5% or above. The other NESHAP solvents regulated under Subpart T (perchloroethylene, 1,1,1-trichloroethane

and methylene chloride) are exempt compounds under federal and most state guidelines and are not considered VOC and are not regulated under the OTC Solvent Degreaser Model Rule. However, any person using these Subpart T exempt compounds in solvent degreasing equipment otherwise subject to this solvent degreasing model rule will still be subject to Subpart T if the exempt halogenated compound is used in a concentration equal to or greater than 5%.

NOTE: "XXXX" is a place holder for State-specific section numbers, title numbers, or State names.

1.0 Applicability This rule applies to all persons who own or operate batch-loaded cold cleaners, open-top vapor degreasers, all types of conveyorized degreasers, and air-tight and airless cleaning systems that carryout solvent degreasing operations with a solvent containing volatile organic compounds (VOC). Solvent degreasing operations that are regulated by this rule include, but are not limited to, the removal of dirt, grease, oil or other contaminants and coatings from parts, products, tools, and machinery.

2.0 Definitions. The following words, terms, and abbreviations used in this rule shall have the following meanings:

a. "Air-solvent Interface" means the point of contact between the exposed solvent and air.

b. "Air-vapor Interface" means the point of contact between the exposed solvent vapor and air.

c. "Air-vapor Interface Surface Area" means (1) the geometric surface area of the open-top of the degreaser for open-top vapor degreasers; or (2) the combined geometric surface areas of the projected plane surfaces of all degreaser openings for conveyorized vapor degreasers and conveyorized cold cleaners.

d. "Airless/Air-tight Cleaning System" means a sealed cleaning system that has no open air/vapor or air/solvent interface, and is designed and automatically operated in such a manner as to minimize the discharge or leakage of solvent vapor emissions to the atmosphere during all cleaning and vacuum drying operations. The system consists of devices to condense and recover solvent and solvent vapor, and control devices to remove solvent vapors from all gas streams that vent to the atmosphere.

e. "Carbon Adsorber" means a bed of activated carbon into which an air/solvent gas-vapor stream is routed and which adsorbs the solvent on the carbon.

f. "Circumferential Trough" means a receptacle located below the primary condenser that conveys condensed solvent to a water separator.

g. "Cold Cleaning Machine or Batch-Loaded Cold Cleaner" means a device or piece of equipment, containing and/or using a non-boiling solvent, where parts are placed to remove dirt, grease, oil or other contaminants and coatings, from the surfaces of the parts or to dry the parts. The term does not include machines which do not have a solvent/air interface, such as airless and air-tight cleaning systems.

h. “Condenser Water Flow Switch” means a safety switch that turns off the sump heat if the condenser water fails to circulate or the temperature of the condenser water rises above the design operating temperature.

i. “Conveyorized (In-line) Cold Degreaser” means any degreaser which uses an integral, continuous mechanical system for moving materials or parts to be cleaned into and out of a solvent liquid cleaning zone.

j. “Conveyorized (In-line) Vapor Degreaser” means any degreaser which uses an integral, continuous mechanical system for moving materials or parts to be cleaned into and out of a vapor cleaning zone.

k. “Degreaser” means any equipment designed and used for holding a solvent to carry out solvent cleaning operations including, but not limited to, batch-loaded cold cleaners, open-top vapor degreasers, conveyorized (in-line) degreasers and airless and air-tight cleaning systems.

l. “Drag-out” means the solvent carried out of a degreaser that adheres to or is entrapped in the part being removed.

m. “Drying Tunnel” means an add-on enclosure extending from the exit area of a conveyorized degreaser which reduces drag-out losses by containing evaporating solvent.

n. “Dwell” means holding parts within the freeboard area of a solvent degreaser but above the solvent vapor zone. Dwell occurs after cleaning to allow solvent to drain from the parts or parts baskets back into the solvent degreaser.

o. “Dwell Time” means the period of time between when a parts basket is placed in the vapor zone of a batch vapor or in-line vapor cleaning machine and when solvent dripping ceases. Dwell time is determined by placing a basket of parts in the vapor zone and measuring the amount of time between when the parts are placed in the vapor zone and dripping ceases.

p. “Freeboard Ratio” means for a cold cleaning machine, the distance from the liquid solvent to the top edge of the cold cleaning machine divided by the smaller of the inside length or inside width of the cold cleaning machine; for an operating batch vapor degreaser or an in-line vapor degreaser, the distance from the top of the solvent vapor layer to the top edge of the vapor degreaser divided by the smaller of the inside length or inside width of the vapor degreaser.

q. “Freeboard Refrigeration Device” means a set of secondary coils mounted in the freeboard area of a solvent degreaser that carries a refrigerant or other chilled substance to provide a chilled air blanket above the solvent vapor. A solvent degreaser primary condenser which is capable of maintaining a temperature in the center of the chilled air blanket at not more than 30 percent of the solvent boiling point is both a primary condenser and a freeboard refrigeration device.

r. “High Precision Optic” means an optical element used in an electro-optical device and is designed to sense, detect or transmit light energy, including specific wavelengths of light energy.

s. “High Volatility Solvent” means any solvent that is not classified as a low volatility solvent.

t. “Idling Mode” means the time period when a solvent degreaser is turned on but is not actively cleaning parts.

u. “Immersion Cold Cleaning Machine” means a cold cleaning machine in which the parts are immersed in the solvent when being cleaned.

v. **“**In-line Vapor Cleaning Machine” means a vapor cleaning machine that uses an automated parts handling system, typically a conveyor, to automatically provide a supply of parts to be cleaned. In-line vapor cleaning machines are fully enclosed except for the conveyor inlet and exit portals.

w. “Low Volatility Solvent” means a solvent with an initial boiling point that is greater than 120^0 C (248^0 F) and with a temperature, as used, at least 100^0 C (212^0 F) below the initial boiling point.

x. “Medical Device” means an instrument, apparatus, implement, machine, contrivance, implant, in-vitro reagent or other similar article including any component or accessory that meets one of the following conditions:

(1) it is intended for use in the diagnosis of disease or other conditions or in the cure, mitigation, treatment, or prevention of disease; or
(2) it is intended to affect the structure or any function of the body; or
(3) it is defined in the National Formulary or the United States Pharmacopeia, or any supplement to them.

y. “NESHAP Halogenated Solvent” means a solvent that contains five percent or more by weight of any one or combination of halogenated hazardous air pollutant solvent as defined in the most recent version of 40 CFR Part 63, Subpart T “National Emission Standards for Halogenated Solvent Cleaning” (Section 63.461), including, but not limited to, the following compounds: carbon tetrachloride, chloroform, perchloroethylene, 1,1,1-trichloroethane, trichloroethylene and methylene chloride.

z. “Open-top Vapor Degreaser” means any batch-loaded, boiling solvent degreaser.

aa. “Primary Condenser” means a series of circumfrential cooling coils on the inside walls of a vapor degreaser through which a chilled substance is circulated or recirculated to provide continuous condensation of rinsing solvent vapors thereby creating a concentrated vapor zone.

bb. "Spray Pump Control Switch" means a safety switch that prevents the spray pump from operating without an adequate vapor level.

cc "Superheated Vapor Zone" means the region located within the vapor zone of degreaser whereby solvent vapors are heated above the solvent boiling point.

dd. "Vapor Level Control Switch" means the safety switch that turns off the sump heat when the solvent vapor level rises above the design operating level.

ee. "Volatile Organic Compound"
OPTION 1: Develop a state specific definition
OPTION 2: Reference federal list at 40 CFR 51.100 (s)
OPTION 3: Reference CARB
Note: CARB does NOT include TBAC and some other compounds as exempt.

ff. "Water Separator" means a device that isolates water from an organic solvent or a mixture of organic solvents by a variety of means including, but not limited to, extraction, evaporation, distillation, drying, adsorption and filtration.

gg. "Workload Area means (1) the plane geometric surface area of the top of the submerged parts basket, or (2) the combined plane geometric surface or surfaces displaced by the submerged part or parts, if no parts basket is used.

3.0 Standards

a. Batch-Loaded and Conveyorized (In-Line) Cold Cleaners

Any person owning or operating a batch-loaded cold cleaner or a conveyorized (in-line) cold cleaner with a VOC-containing solvent shall meet all of the following applicable requirements:

(1) Batch-Loaded Cold Cleaners

(A) Cleaning materials shall have a VOC content of 25 g/l or less, as used.
(B) A device for draining cleaned parts shall be used such that drained or drag-out solvent is returned.

(2) Conveyorized (In-Line) Cold Cleaners

Cleaning materials shall have a VOC content of 25 g/l or less, as used.

b. Open-Top and Conveyorized (In-Line) Vapor Degreasers

Vapor degreasing operations shall be performed using a solvent with a VOC content of no more than 25 g/l, as used.

c. Airless/Air-tight Degreasers

In lieu of meeting the requirements of (3) (a) or (b), any person may use an airless/air-tight batch cleaning system, or a [OTC STATE AGENCY] and USEPA approved alternative cleaning system that achieves equivalent emission reductions, provided that all of the following applicable requirements are met:

(1) The equipment is operated in accordance with the manufacturer's specifications and operated with a door or other pressure sealing apparatus that is in place during all cleaning and drying cycles.

(2) All waste solvents are stored in properly identified and sealed containers. All associated pressure relief devices shall not allow liquid solvents to drain out.

(3) Spills during solvent transfer shall be wiped up immediately, and the used wipe rags shall be stored in closed containers that are handled in accordance with (3)(c)(2) of this regulation.

(4) The equipment is maintained in a vapor-tight, leak-free condition and any leak is a violation.

4.0 **Equipment Design and Work Practice Requirements**

a. Batch-Loaded Cold Cleaners

(1) The degreaser shall be operated in accordance with the manufacturer's specifications, and be used with tightly fitting covers that are free of cracks, holes or other defects. In addition, the cover shall be closed at all times when the degreaser contains solvent, except during parts entry and removal or performing maintenance or monitoring that requires the removal of the cover.

(2) The parts to be cleaned shall be racked in a manner that will minimize the drag-out losses.

(3) Parts shall be drained immediately after the cleaning, until (i) at least 15 seconds have elapsed; or (ii) dripping of solvent ceases; or (iii) the parts become visibly dry. Parts with blind holes or cavities shall be tipped or rotated before being removed from a degreaser, such that the solvents in the blind holes or cavities are drained in accordance with the above requirements.

(4) The solvent container shall be free of all liquid leaks. Auxiliary degreaser equipment, such as pumps, water separators, steam traps, or distillation units, shall not have any liquid leaks, visible tears, or cracks. In addition, any liquid leak, visible tear, or crack detected shall be repaired within 48 hours, or the degreaser shall be drained of all solvent and shut down until replaced or repaired.

(5) Draining or filling of solvent containers shall be performed beneath the liquid solvent surface.

(6) All waste solvents shall be stored in properly identified and sealed containers. All associated pressure relief devices shall not allow liquid solvents to drain out.

(7) Solvent flow cleaning shall be done within the freeboard area, and shall be done by a liquid stream rather than a fine, atomized, or shower-type spray. Solvent flow shall be directed downward to avoid turbulence at the air-solvent interface and to prevent liquid solvent from splashing outside of the degreaser.

(8) Degreasing of porous or absorbent materials, such as cloth, leather, wood, or rope, is prohibited.

(9) Solvent agitation, where necessary, shall be carried out only by pump recirculation, ultrasonics, a mixer, or by air agitation. Air agitation shall be accomplished under the following conditions:(i) the air agitation unit shall be equipped with a gauge and a device that limits air pressure into the degreaser to less than two pounds per square inch gauge;(ii) the cover must remain closed while the air agitation system is in operation; and (iii) pump circulation shall be performed without causing splashing.

(10)The average draft rate in the work room, as measured parallel to the plane of the degreaser opening, shall not exceed 9.1 meters per minute (30 feet per minute).

(11)Ventilation fans shall not be positioned in such a way as to direct airflow near the degreaser openings.

(12)Spills during solvent transfer shall be wiped up immediately and the used wipe rags shall be stored in closed containers that are handled in accordance with (4)(a)(6) of this regulation.

(13)Solvent levels shall not exceed the fill line.

b. **Conveyorized (In-line) Cold Cleaners**

All conveyorized cold cleaners shall be equipped with the following;

(1) A rotating basket, tumbling basket, drying tunnel, or other means that prevents cleaned parts from carrying out solvent liquid or vapor.

(2) The average clearance between workload material and the edges of the cleaner entrance and exit openings shall be less than 10 centimeters (3.9 inches) or less than 10 percent of the opening width, whichever is less.

(3) Down-time covers for closing off the entrance and exit during shutdown hours, or an equivalent device that cover at least 90 percent of the opening.

(4) A freeboard ratio of 0.75 or greater that is physically verifiable.

c. Remote Reservoir Cold Cleaners

Remote reservoir cold cleaners shall meet the following requirements;

(1) The sink or work area shall be sloped sufficiently towards the drain to prevent pooling of solvent.

(2) There shall be a single drain hole, not larger than 100 square centimeters (15.5 square inches) in area, for the solvent to flow from the sink into the enclosed reservoir.

(3) Except for remote reservoir cold cleaners using low volatility solvents, the solvent vapor shall be prevented from escaping from the solvent container by means of closing a cover or a device, such as a valve or a drain plug, when the remote reservoir is not being used, cleaned, or repaired.

(4) The freeboard height shall be 6 inches or higher.

(5) The unit shall have a freeboard ratio of 0.75 or greater, if the solvent is heated above 50 degrees Celsius (122 degrees Fahrenheit), agitated, or a high volatility solvent is used.

d. Open-top and Conveyorized (In-line) Vapor Degreasers

(1) The degreaser shall be operated in accordance with the manufacturer's specifications and be used with a tightly-fitting cover that is free of cracks, holes or other defects, except as provided in (4)(e)(2)(B) of this regulation. In addition, the cover shall be closed during idling and downtime modes, except while performing maintenance or monitoring that requires the removal of the cover.

(2) The solvent container shall be free of all liquid leaks. Auxiliary degreaser equipment, such as pumps, water separators, steam traps, or distillation units, shall not have any liquid leaks, visible tears, or cracks. In addition, any liquid leak, visible tear, or crack detected pursuant to the provisions of this regulation shall be repaired within 48 hours, or the degreaser shall be drained of all solvents and shut down until replaced or repaired.

(3) Degreasing of porous or absorbent materials, such as cloth, leather, wood, or rope, is prohibited.

(4) Transfer of solvent into or out of solvent containers shall be performed with leak-proof couplings, and the end of the pipe in the solvent sump shall be located beneath the liquid solvent surface.

(5) The vertical speed of the powered hoist or conveyor shall not be more than 3.4 meters per minute (11.2 feet per minute) when lowering and raising parts in and out of the degreaser, respectively.

(6) The average draft rate in the workroom, as measured parallel to the plane of the degreaser opening, shall not exceed 9.1 meters per minute (30 feet per minute).

(7) At start up, the primary condenser and the refrigerated freeboard chiller, if one is required, shall be turned on before the sump heater is turned on. At shutdown, the sump heater shall be turned off before the primary condenser and refrigerated freeboard chiller are turned off.

(8) The water separator shall be maintained to prevent water from returning to the surface of the boiling solvent sump or from becoming visibly detectable in the solvent exiting the water separator.

(9) The workload area shall not exceed more than half of the degreaser's air-vapor interface surface area.

(10) The workload shall be degreased in the vapor zone until condensation ceases.

(11) The temperature within the superheated vapor zone shall be at least 10°F above the boiling point of the solvent being used.

(12) Parts and parts baskets shall remain in the superheated vapor zone for at least the minimum proper dwell time, as stated in the manufacturer's specification.

(13) Solvent flow cleaning shall be done within the vapor zone and shall be done by a liquid stream rather than a fine, atomized, or shower-type spray. Solvent flow shall be directed downward to avoid turbulence at the air-vapor interface and to prevent liquid solvent from splashing out of the degreaser.

(14) Ventilation fans shall not be positioned in such a way as to direct airflow near the degreaser openings.

(15) All waste solvents shall be stored in properly identified and sealed containers. All associated pressure relief devices shall not allow liquid solvents to drain out.

(16) Spills during solvent transfer shall be wiped up immediately and the used wipe rags shall be stored in closed containers that are handled in accordance with (4)(d)(15) of this regulation.

(17) Solvent levels shall not exceed the fill line.

e. Additional Equipment Design and Work Practice Requirements for Open-top and Conveyorized (In-line) Vapor Degreasers

(1) Open-Top Vapor Degreaser

(A) The degreaser shall be operated with all of the following safety switches installed:(i) vapor level control switch;(ii) condenser water flow switch, for water-cooled degreasers;(iii) spray pump control switch, for solvent flow cleaning; and (iv) sump heat shut-off process control switch or a float for low liquid level indication.

(B) The degreaser shall be equipped with:(i) an automated parts handling system; (ii) circumferential primary condensing coils; (iii) a circumferential trough; (iv) a water separator; (v) a freeboard ratio of at least 1.0, and (vi) a superheated vapor zone.

In lieu of the superheated vapor zone, a refrigerated freeboard chiller may be used if the chilled air blanket temperature, measured at the center of the air blanket, is no greater than 40% of the boiling point of the solvent, in degrees Fahrenheit, for solvents that do not form azeotropes with water, or 50% of the boiling point, in degrees Fahrenheit, for solvents that form azeotropes with water. A water separator is not required for solvents that form azeotropes with water.

(2) Conveyorized (In-Line) Vapor Degreaser

(A)The degreaser shall be equipped with a high vapor cutoff thermostat with manual reset.

(B)Entrances and exits shall have an average clearance between each part and the edge of the degreaser opening of less than 10 centimeters (3.9 inches) or less than 10 percent of the width of the opening, whichever is less.

(C)All conveyorized (in-line) vapor degreasers shall be equipped with: (i) an automated parts handling system; (ii) circumferential primary condensing coils; (iii) a circumferential trough; (iv) a water separator; (v) a freeboard ratio of at least 1.0; (vi) a refrigerated freeboard chiller that is operated such that the chilled air blanket temperature measured at the center of the air blanket is no greater than 40% of the boiling point of the solvent, in degrees Fahrenheit, for solvents that do not form azeotropes with water, or 50% of the boiling point, in degrees Fahrenheit, for solvents that form azeotropes with water. A water separator is not required for solvents that form azeotropes with water, and; (vii) a superheated vapor zone.

5.0 Compliance Test Methods

(a) The VOC content of materials subject to the provisions of this rule shall be determined by the EPA Reference Method 24 (Determination of Volatile Matter Content, Water Content, Density Volume Solids, and Weight Solids of Surface Coatings, Code of Federal Regulations Title 40, Part 60, Appendix A), or by the most recent version of SCAQMD Method 304 [Determination of Volatile Organic Compounds (VOCs) in Various Materials] contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual. The VOC content of Materials containing 50 g/l of VOC or less shall be determined by the most recent version of SCAQMD Method 313 (Determination of Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry) or any other alternative test methods approved by the [OTC STATE AGENCY] and the USEPA

(b) When more than one test method or set of methods are specified for any testing, a violation of any requirement of this rule established by any one of the specified test methods or set of test methods shall constitute a violation of the rule.

(c) The initial boiling point of solvents shall be determined by ASTM Method D-1078-78, "Standard Test Method for Distillation Range of Volatile Organic Liquids."

(d) Measurements of average workroom draft rate shall be done parallel to the plane of the degreaser opening using a thermistor anemometer, with an accuracy within ±2 feet per minute, and a calibration traceable to the National Institute of Standards and Technology.

(e) Maximum hoist speed shall be measured with use of a stop clock and distance traveled by the hoist.

(f) Temperatures in the vapor zone shall be measured with the use of a temperature probe.

(g) Determination of Efficiency of Emission Control System
[STATES MAY SUBSTITUTE EQUIVALENT STATE METHODS TO DETERMINE EFFICIENCY]

(1) The capture efficiency of an emission control system shall be determined by verifying the use of a Permanent Total Enclosure (PTE) and 100% capture efficiency as defined by USEPA Method 204, "Criteria for and Verification of a Permanent or TemporaryTotal Enclosure." Alternatively, if a USEPA Method 204 defined PTE is not employed, capture efficiency shall be determined using a minimum of three sampling runs subject to data quality criteria presented in the USEPA technical guidance document "Guidelines for Determining Capture Efficiency, January 9, 1995." Individual capture efficiency test runs subject to the USEPA technical guidelines shall be determined by: (i) The Temporary Total Enclosure (TTE) approach of USEPA Methods 204 through 204F; or (ii) The SCAQMD "Protocol for Determination of Volatile Organic Compounds (VOC) Capture Efficiency."

(2)The control equipment efficiency of an emission control system as specified in subparagraph (k)(1)(D), on a mass emissions basis, and the VOC concentrations in the exhaust gases, measured and calculated as carbon, shall be determined by USEPA Test Methods 25, 25A, SCAQMD Method 25.1 (Determination of Total Gaseous Non-Methane Organic Emissions as Carbon), or SCAQMD Method 25.3 (Determination of Low Concentration Non-Methane Non-Ethane Organic Compound Emissions from Clean Fueled Combustion Sources), as applicable. USEPA Test Method 18, or CARB Method 422 shall be used to determine emissions of exempt compounds.

6.0 Monitoring, Recordkeeping and Reporting

(a) A person owning or operating any open-top vapor degreaser or airless/airtight cleaning system with a VOC-containing solvent shall record at monthly intervals the following information:

(1) the weight, in pounds, of VOCs added to the degreaser in the calendar month (*Wa*);

(2) the weight, in pounds, of VOCs removed from the degreaser in the calendar month (*Wb*) ;

(3) the weight, in pounds, of VOCs contained in the solid waste removed from the degreaser in the calendar month (*Wc*); and

(4) the monthly emissions (E) determined by the following equation: $E = Wa - Wb - Wc$.

In lieu of test data, the VOCs contained in the solid waste (*Wc*) may be calculated as 50% of the weight (in pounds) of the solid waste material removed from the degreasers.

The monthly record also shall include:
(i) the serial/identification number (or OTC State permit number) for the degreaser; (ii) the product name of the cleaning material;(iii) the VOC content of the cleaning material; and (iv) the boiling point of the cleaning material.

Records shall be retained for a period of at least two years, and be made available to the [OTC STATE AGENCY] upon request.

7.0 Exemptions.

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

(1) Batch loaded cold cleaners or vapor degreasers, with open-top surface area less than 1.0 square foot (0.1 square meter) or with a capacity of less than 2 gallons, that are vented to a VOC emission collection and control system provided:(i) the equipment is used only for cleaning high-precision optics, electrical or electronic components; or aerospace and military applications for cleaning solar cells, laser hardware, fluid systems, and space vehicle components;and (ii) the emission collection and control system shall collect at

least 90 percent, by weight, of the emissions generated by the degreasing operation and have a destruction efficiency of at least 95 percent, by weight, as determined pursuant to (5)(g) of this regulation, or have an output of less than 50 parts per million (ppm) calculated as carbon with no dilution; and (iii) no NESHAP halogenated solvents are used; and (iii) the equipment is operated in accordance with the applicable work practice requirements of (4)(a) or (4)(d) respectively of this regulation, excluding respectively (4)(a)(5), (4)(a)(10) and (4)(a)(11) of this regulation, and (4)(c)(4), (4)(c)(5), (4)(c)(6) and (4)(c)(14) of this regulation; and (iv) the operator meets the Monitoring, Recordkeeping, and Reporting requirements of (6.0) of this regulation.

(2)Batch loaded cold cleaners or vapor degreasers, with open-top surface area less than 1.0 square foot (0.1 square meter) or with a capacity of less than 2 gallons, provided: (i) the equipment is used only for cleaning electronic components that are designed to travel over 100 miles above the earth's surface; and (ii) the VOC emissions from all of the equipment do not exceed 22 pounds per month per facility. However, for two or more facilities that consolidate at least 65% of each of their total VOC emissions from all of their equipment subject to this exemption to one consolidated facility, the VOC limit may be increased to 66 pounds total per month for three or more consolidating facilities, provided the following conditions are met: (I) demonstrate to the satisfaction of the[OTC STATE AGENCY] that the facilities whose monthly emission limits are being transferred are under common ownership with the consolidated facility; (II) that any applicable permits for the equipment being consolidated have been cancelled; and (III) written concurrence of the 65% or more consolidation is obtained from the [OTC STATE AGENCY] specifying the applicable VOC emission limit in (7)(b)(2) of this regulation for the consolidating facilities. The combined VOC emissions from the facilities involved in the consolidation process cannot exceed the applicable monthly emission limits provided in (7)(b)(2) of this regulation for the consolidating facilities.

(3)Batch loaded cold cleaners or vapor degreasers, with open-top surface area less than 1.0 square foot (0.1 square meter) or with a capacity of less than 2 gallons, that are used solely for research and development programs, or laboratory tests in quality assurance laboratories.

(4)Motion picture film cleaning equipment.

(5)The cleaning of photocurable resins from stereolithography equipment and models .

(6)Wipe cleaning

(7) Cleaning of medical devices.

(b) The provision of paragraph (3)(b) of this regulation shall not apply to vapor degreasers containing VOC materials provided:

(1) the equipment is used only for cleaning electronic components that are designed to travel over 100 miles above the earth's surface; and

(2) the VOC emissions from the equipment do not exceed 22 pounds per month per facility, and

(3) the [OTC STATE AGENCY] has approved permit applications demonstrating that the requirements of (7)(b)(1) and (7)(b)(2) respectively of this regulation are met