

**PROPOSED AMENDMENTS TO THE RULES OF THE**  
**DEPARTMENT OF NATURAL RESOURCES**  
**ENVIRONMENTAL PROTECTION DIVISION**  
**AIR QUALITY CONTROL, CHAPTER 391-3-1**

The Rules of the Department of Natural Resources, Chapter 391-3-1, Air Quality Control are hereby amended, added to, repealed in part, revised, as hereinafter explicitly set forth in the attached amendments, additions, partial repeals, and revisions for specific rules, or such subdivisions thereof as may be indicated.

[Note: Underlined text is proposed to be added. Lined-through text is proposed for deletion.]

**Rule 391-3-1-.02(2)(kkk), “VOC Emissions from Aerospace Manufacturing and Rework Facilities,”** is amended to read as follows:

**(kkk) VOC Emissions from Aerospace Manufacturing and Rework Facilities.**

1. No person shall cause, let, permit, suffer, or allow the emissions of VOC from the coating of aerospace vehicles or components to exceed:

(i) 2.9 pounds per gallon of coating, excluding water and exempt solvents, delivered to a coating applicator that applies primers. For general aviation rework facilities, the VOC limitation shall be 4.5 pounds per gallon of coating, excluding water and exempt solvents, delivered to a coating applicator that applies primers.

(ii) 3.5 pounds per gallon of coating, excluding water and exempt solvents, delivered to a coating applicator that applies topcoats (including self-priming topcoats). For general aviation rework facilities, the VOC limitation shall be 4.5 pounds per gallon of coating, excluding water and exempt solvents, delivered to a coating applicator that applies topcoats (including self-priming topcoats).

(iii) The VOC content limits listed in Table (kkk) -1 below expressed in pounds per gallon of coating, excluding water and exempt solvents, delivered to a coating applicator that applies specialty coatings.

**TABLE (kkk) -1 Specialty Coating VOC Limitations**

<b>Coating Type</b>	<b>VOC Content Limit (lb/gal)</b>	<b>VOC Content Limit (g/L)</b>
Ablative Coating	5.0	<u>600</u>
Adhesion Promoter	7.4	<u>890</u>
Adhesive Bonding Primers:		
Cured at 250°F or below	7.1	<u>850</u>
Cured above 250°F	8.6	<u>1030</u>

Coating Type	VOC Content Limit (lb/gal)	VOC Content Limit (g/L)
Adhesives:		
Commercial Interior Adhesive	6.3	<u>760</u>
Cyanoacrylate Adhesive	8.5	<u>1,020</u>
Fuel Tank Adhesive	5.2	<u>620</u>
Nonstructural Adhesive	3.0	<u>360</u>
Rocket Motor Bonding Adhesive	7.4	<u>890</u>
Rubber-based Adhesive	7.1	<u>850</u>
Structural Autoclavable Adhesive	0.5	<u>60</u>
Structural Nonautoclavable Adhesive	7.1	<u>850</u>
Antichafe Coating	5.5	<u>660</u>
Bearing Coating	5.2	<u>620</u>
Caulking and Smoothing Compounds	7.1	<u>850</u>
Chemical Agent-Resistant Coating	4.6	<u>550</u>
Clear Coating	6.0	<u>720</u>
Commercial Exterior Aerodynamic Structure Primer	5.4	<u>650</u>
Compatible Substrate Primer	6.5	<u>780</u>
Corrosion Prevention Compound	5.9	<u>710</u>
Cryogenic Flexible Primer	5.4	<u>645</u>
Cryoprotective Coating	5.0	<u>600</u>
Dry Lubricative Material	7.3	<u>880</u>
Electric or Radiation-Effect Coating	6.7	<u>800</u>
Electrostatic Discharge and Electromagnetic Interference (EMI) Coating	6.7	<u>800</u>
Elevated Temperature Skydrol Resistant Commercial Primer	6.2	<u>740</u>
Epoxy Polyamide Topcoat	5.5	<u>660</u>
Fire-Resistant (Interior) Coating	6.7	<u>800</u>
Flexible Primer	5.3	<u>640</u>
Flight-Test Coatings:		
Missile or Single Use Aircraft	3.5	<u>420</u>
All Other	7.0	<u>840</u>
Fuel-Tank Coating	6.0	<u>720</u>
High-Temperature Coating	7.1	<u>850</u>
Insulation Covering	6.2	<u>740</u>
Intermediate Release Coating	6.3	<u>750</u>
Lacquer	6.9	<u>830</u>
Maskants:		
Bonding Maskant	10.3	<u>1,230</u>
Critical Use and Line Sealer Maskant	8.5	<u>1,020</u>
Seal Coat Maskant	10.3	<u>1,230</u>
Metallized Epoxy Coating	6.2	<u>740</u>
Mold Release	6.5	<u>780</u>

Coating Type	VOC Content Limit (lb/gal)	VOC Content Limit (g/L)
Optical Anti-Reflective Coating	6.3	750
Part Marking Coating	7.1	850
Pretreatment Coating	6.5	780
Rain Erosion-Resistant Coating	7.1	850
Rocket Motor Nozzle Coating	5.5	660
Scale Inhibitor	7.3	880
Screen Print Ink	7.0	840
Sealants:		
Extrudable/Rollable/Brushable Sealant	2.3	280
Sprayable Sealant	5.0	600
Silicone Insulation Material	7.1	850
Solid Film Lubricant	7.3	880
Specialized Function Coating	7.4	890
Temporary Protective Coating	2.7	320
Thermal Control Coating	6.7	800
Wet Fastener Installation Coating	5.6	675
Wing Coating	7.1	850

(iv) 5.2 pounds per gallon of coating, excluding water and exempt solvents, delivered to a coating applicator that applies Type I chemical milling maskants.

(v) 1.3 pounds per gallon of coating, excluding water and exempt solvents, delivered to a coating applicator that applies Type II chemical milling maskants.

(vi) The following aerospace activities are exempt ~~for~~from the coating emission limits in subparagraphs 1.(i) through (v): touchup coating, aerosol coating, and ~~DOD~~the application of Department of Defense classified coatings; coatings used on space vehicles; and facilities that comply with the low volume usage exemption in subparagraph 10.

2. The emission limitations in ~~this subsection~~subparagraph (kkk) shall be achieved by:

(i) The application of low solvent coating technology where each and every coating meets the specified applicable limitation expressed in pounds of VOC per gallon of coating, excluding water and exempt solvents, stated in ~~section 1~~subparagraph 1~~of this subsection~~; or

(ii) The application of low solvent coating technology where the monthly volume-weighted average VOC content of each specified coating type meets the specified applicable limitation expressed in pounds of VOC per gallon of coating, excluding water and exempt solvents, stated in ~~section 1~~subparagraph 1~~of this subsection~~; averaging is not allowed between primers, topcoats (including self-priming topcoats), specialty coating types, Type I milling maskants, and Type II milling maskants or any combination of the above coating categories; or

(iii) Control equipment, including but not limited to incineration, carbon adsorption and condensation, with a capture system approved by the Director, provided that the control system has a VOC reduction efficiency of 81 percent or greater.

3. Each owner or operator of an aerospace manufacturing and/or rework operation shall apply all spray applied non-exempt primers, and topcoats, and specialty coatings utilizing one or more of the spray application techniques specified below:

~~(i) Flow/curtain application;~~

~~(ii) Dip coat application;~~

~~(iii) Roll coating;~~

~~(iv) Brush coating;~~

~~(v) Cotton tipped swab application;~~

~~(vi) Electrodeposition (dip) coating;~~

~~(vii)~~(i) High-volume low-pressure (HVLP) spraying;

~~(viii)~~(ii) Electrostatic spray application; ~~or~~

(iii) Airless spray application;

(iv) Air-assisted airless spray application; or

~~(ix)~~(v) Other coating application methods that achieve emission reductions equivalent to HVLP, ~~or electrostatic spray application, airless spray, or air-assisted airless spray application~~ methods, as determined by the Director.

4. Each owner or operator of an aerospace manufacturing and/or rework operation shall ensure that all application devices used to apply primers, ~~and topcoats~~ (including self-priming topcoats), and specialty coatings are operated according to company procedures, local specified operating procedures, and/or the manufacturer's specifications, whichever is most stringent, at all times. Equipment modified by the owner or operator shall maintain a transfer efficiency equivalent to HVLP, ~~or electrostatic spray application, airless spray application, or air-assisted airless spray application~~ techniques.

5. Each owner or operator of an aerospace manufacturing and/or rework operation shall comply with the following housekeeping requirements for any affected cleaning operation. Aqueous cleaning solvents and hydrocarbon-based solvents which have a maximum composite vapor pressure of 7 mm Hg at 20°C are exempt from these requirements.

(i) Solvent-laden cloth, paper, or any other absorbent applicators used for cleaning shall be placed in bags or other closed containers upon completing their use. These bags and containers must be kept closed at all times except when depositing or removing these materials from the container. The bags and containers used must be of such a design so as to contain the vapors of the cleaning solvent. Cotton-tipped swabs used for very small cleaning operations are exempt from this requirement.

(ii) All fresh and spent cleaning solvents, except semi-aqueous solvent cleaners, used in aerospace cleaning operations shall be stored in closed containers.

(iii) Conduct the handling and transfer of cleaning solvents to or from enclosed systems, vats, waste containers, and other cleaning operation equipment that hold or store fresh spent cleaning solvents in such a manner that spills are minimized.

6. Each owner or operator of an aerospace manufacturing and/or rework operation utilizing hand-wipe cleaning operations (excluding the cleaning of spray gun equipment performed in accordance with ~~section 7~~subparagraph 7.) shall comply with one of the following:

(i) Utilize cleaning solvent solutions that are classified as an aqueous cleaning solvent and/or a hydrocarbon-based cleaning solvent with a maximum composite vapor pressure of 7 mm Hg at 20°C.

(ii) Utilize cleaning solvent solutions that have a composite vapor pressure of 45 mm Hg or less at 20°C.

7. Each owner or operator of an aerospace manufacturing and/or rework operation shall clean all spray guns used in the application of primers, topcoats (including self-priming topcoats), and specialty coatings utilizing one or more of the following techniques:

(i) Enclosed System: Spray guns shall be cleaned in an enclosed system that is closed at all times except when inserting or removing the spray gun. Cleaning shall consist of forcing cleaning solvent through the gun. If leaks are found, repairs shall be made as soon as practicable, but no later than 15 days after the leak was found. If the leak is not repaired by the 15th day after detection, the cleaning solvent shall be removed and the enclosed cleaner shall be shut down until the leak is repaired or its use is permanently discontinued.

(ii) Nonatomized Cleaning: Spray guns shall be cleaned by placing cleaning solvent in the pressure pot and forcing it through the gun with the atomizing cap in place. No atomizing air is to be used. The cleaning solvent from the spray gun shall be directed into a vat, drum, or other waste container that is closed when not in use.

(iii) Disassembled Spray Gun Cleaning: Spray guns shall be cleaned by disassembling and cleaning the components by hand in a vat, which shall remain closed at all times except in use. Alternatively, the components shall be soaked in a vat, which shall remain closed during the soaking period and when not inserting or removing components.

(iv) Atomizing cleaning: Spray guns shall be cleaned by forcing the cleaning solvent through the gun and directing the resulting atomized spray into a waste container that is fitted with a device designed to capture the atomized cleaning solvent emissions.

8. Each owner or operator of an aerospace manufacturing and/or rework operation that includes a flush cleaning operation shall empty the used cleaning solvents each time aerospace parts or assemblies, or components of a coating unit (with the exception of spray guns) are flush cleaned into an enclosed container or collection system that is kept closed when not in use or into a system with equivalent emission control approved by the Director. Hydrocarbon-based solvents which have a maximum composite vapor pressure of 7 mm Hg at 20°C and aqueous and semi-aqueous materials are exempt from the requirements of ~~this Section~~subparagraph (kkk).

9. The following activities are not regulated by ~~this subsection~~subparagraph (kkk):

(i) Research and development;

(ii) Quality control;

(iii) Laboratory testing activities;

(iv) Metal finishing;

(v) Electrodeposition (except for the electrodeposition of paints);

(vi) Composites processing (except for cleaning and coating of composite parts or components that become part of an aerospace vehicle or component as well as composite tooling that comes in contact with such composite parts or components prior to cure);

(vii) Electronic parts and assemblies (except for cleaning and topcoating of completed assemblies);

(viii) Manufacture of aircraft transparencies;

(ix) Wastewater treatment operations;

(x) Regulated activities associated with space vehicles designed to travel beyond the limit of the earth's atmosphere, including but not limited to satellites, space stations, and the space shuttle;

(xi) Maintenance and rework of antique aerospace vehicles and components-;

(xii) Chemical milling;

(xiii) Rework of aircraft or aircraft components if the holder of the Federal Aviation Administration (FAA) design approval, or the holder's licensee, is not actively manufacturing the aircraft or aircraft components;

(xiv) Parts and assemblies not critical to the vehicle's structural integrity or flight performance;

(xv) Primers, topcoats, specialty coatings, chemical milling maskants, strippers, and cleaning solvents that meet the definition of non-VOC material, as determined from manufacturer's representations, such as in a material safety data sheet or product data sheet, or testing, except that if an owner or operator chooses to include one or more non-VOC primer, topcoat, specialty coating, or chemical milling maskant in averaging under subparagraph 2.(ii);

(xvi) Primers, topcoats, and specialty coatings that meet the definition of "classified national security information" in subparagraph 17.(xvii).

10. The requirements for primers, topcoats, and chemical milling maskants specified in subsections 1.(i), 1.(ii), 1.(iv) and 1.(v) do not apply to the use of low volume coatings in these categories for which the rolling twelve month total of each separate formulation used at a facility does not exceed 50 gallons, and the combined rolling twelve month total of all such primers, topcoats, and chemical milling maskants used does not exceed 200 gallons. The requirements for specialty coatings specified in subsection 1.(iii) do not apply to the use of low volume specialty coatings for which the rolling twelve month total of each separate specialty coating formulation used at a facility does not exceed 50 gallons, and the combined rolling twelve month total of all such specialty coating formulations used does not exceed 200 gallons. Coatings exempted under section 9 of this subsection are not included in these 50 and 200 gallon limits. The requirements for primers, topcoats, specialty coatings, and chemical milling maskants in subparagraphs 1.(i), 1.(ii), 1.(iii), 1.(iv) and 1.(v) do not apply to the use of low-volume coatings in these categories for which the rolling twelve month total of each separate formulation used at a facility does not exceed 50 gallons, and the combined rolling twelve month total of all such primers, topcoats, specialty coatings, and chemical milling maskants used at a facility does not exceed 200 gallons. Primers, topcoats, and specialty coatings exempted under subparagraphs 9. and 11. are not included in the 50 and 200 gallon limits.

11. The following situations are exempt from the requirements of Sections 3 and 4subparagraphs 3. and 4.:

(i) Any situation that normally requires the use of an airbrush or an extension on the spray gun to properly reach limited access spaces;

(ii) The application of any specialty coating;

(iii)(ii) The application of coatings that contain fillers that adversely affect atomization with HVLP spray guns and that cannot be applied by any of the application methods specified in subparagraph 3.;

(iv)(iii) The application of coatings that normally have a dried film thickness of less than 0.0013 centimeter (0.0005 inches) and that cannot be applied by any of the application methods specified in ~~section~~subparagraph 3.;

(iv) The spray application of no more than 3.0 fluid ounces of coating in a single application (i.e., the total volume of a single coating formulation applied during any one day to any one aerospace vehicle or component) from a hand-held device with a paint cup capacity that is equal to or less than 3.0 fluid ounces (89 cubic centimeters). Using multiple small paint cups or refilling a small paint cup to apply more than 3.0 fluid ounces under the requirements of subparagraph (kkk) is prohibited. If a paint cup liner is used in a reusable holder or cup, then the holder or cup must be designed to hold a liner with a capacity of no more than 3.0 fluid ounces. For example, a 3.0 ounce liner cannot be used in a holder that can also be used with a 6.0 ounce liner under the requirements of subparagraph (kkk);

(v) The use of airbrush application methods for stenciling, lettering, and other identification markings;

(vi) The use of hand-held non-refillable spray (aerosol) can application methods; ~~and~~

(vii) Touchup and repair operations;:

(viii) Adhesives, sealants, maskants, caulking materials, and inks; and

(ix) The application of coatings that contain less than 0.17 pounds of VOC per gallon of coating.

12. The following cleaning operations are exempt from the requirements of ~~Section 6~~ subparagraph 6. ~~of this subsection:~~

(i) Cleaning during the manufacture, assembly, installation, maintenance, or testing of components of breathing oxygen systems that are exposed to the breathing oxygen;

(ii) Cleaning during the manufacture, assembly, installation, maintenance, or testing of parts, subassemblies, or assemblies that are exposed to strong oxidizers or reducers (e.g., nitrogen tetroxide, liquid oxygen, or hydrazine);

(iii) Cleaning and surface activation prior to adhesive bonding;

(iv) Cleaning of electronic parts and assemblies containing electronic parts;

(v) Cleaning of aircraft and ground support equipment fluid systems that are exposed to the fluid including air-to-air heat exchangers and hydraulic fluid systems;

(vi) Cleaning of fuel cells, fuel tanks, and confined spaces;

(vii) Surface cleaning of solar cells, coating optics, and thermal control surfaces;

(viii) Cleaning during fabrication, assembly, installation, and maintenance of upholstery, curtains, carpet, and other textile materials used in the interior of the aircraft;



- (ix) Cleaning of metallic and non-metallic materials used in honeycomb cores during the manufacture or maintenance of these cores, and cleaning of the completed cores used in the manufacture or maintenance of aerospace vehicles or components;
- (x) Cleaning of aircraft transparencies, polycarbonate, or glass substrates;
- (xi) Cleaning and solvent usage associated with research and development, quality control, and laboratory testing;
- (xii) Cleaning operations, using nonflammable liquids, conducted within five feet of energized electrical systems. Energized electrical systems means any AC or DC electrical circuit on an assembled aircraft once electrical power is connected, including interior passenger and cargo areas, wheel wells, and tail sections; and
- (xiii) Cleaning operations identified as essential uses under the Montreal Protocol for which the U.S. EPA has allocated essential use allowances or exemptions.

13. Each owner or operator of an aerospace manufacturing and/or rework operation shall submit a monitoring plan to the Division that specifies the applicable operating parameter value, or range of values, to ensure ongoing compliance with ~~Subsection~~subparagraph 2.(iii) of this subsection. The monitoring device shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's specifications.

14. Each owner or operator of an aerospace manufacturing and/or rework operation utilizing an enclosed spray gun cleaner shall visually inspect the seals and all other potential sources of leaks at least once per month. Each inspection shall occur while the spray gun cleaner is in operation.

15. Each owner or operator of an aerospace manufacturing and/or rework operation utilizing coatings specified in ~~Section 1~~subparagraph 1, shall maintain the following records: a current list of coatings that includes the specific category, VOC content as applied, and the monthly amount used for each coating.

(i) If following the compliance option in subparagraph 2.(i), a current list of each coating formulation including the specific category, VOC content as applied, and the annual amount used for each coating.

(ii) If following the compliance option in subparagraph 2.(ii), a current list of each coating formulation including the specific category, VOC content as applied, the monthly amount used for each coating, and the calculated monthly volume-weighted average VOC content of each specified coating type expressed in pounds of VOC per gallon of coating, excluding water and exempt solvents.

(iii) If following the compliance option in subparagraph 2.(iii), continuous records demonstrating the control device was operating at the required destruction efficiency at all times the coating process was in operation and records demonstrating the control device was achieving the required destruction efficiency while the coating process was in operation.

(iv) If using the low volume usage exemption in subparagraph 10., a list of each separate formulation and quantity applied each month and the twelve-consecutive month total of each formulation and the twelve-consecutive month total of all materials exempted.

16. Each owner or operator of an aerospace manufacturing and/or rework operation utilizing cleaning solvents shall maintain the following records:

(i) Maintain a current list of hand-wipe and flush cleaning solvents with documentation that demonstrates that the cleaning solvent complies with one of the composition requirements in ~~Section 6.(i)~~subparagraph 6.(i) and for semi aqueous cleaning solvent used for flush cleaning. This list shall include the annual amount of each applicable solvent used.

(ii) Maintain a current list of hand-wipe cleaning solvents with their respective vapor pressures or, for blended solvents, VOC composite vapor pressures for all vapor pressure compliant hand-wipe cleaning solvents listed in ~~Section 6.(ii)~~subparagraph 6.(ii). This list shall include the monthly amount of each applicable solvent used.

(iii) Maintain a current list of all cleaning solvents with a vapor pressure greater than 45 mm Hg used in exempt hand-wipe cleaning operations. This list shall identify the applicable exemption(s) for each process and include the monthly amount of each applicable solvent used.

(iv) Maintain a record of all leaks from enclosed gun cleaners, as found during the monthly inspection required by subparagraph 14. ~~of this subsection.~~ The record shall include the identification of the leaking paint gun cleaner, the date the leak was discovered, and the date the leak was repaired.

17. For the purpose of ~~this subsection~~subparagraph (kkk), the following definitions shall apply:

(i) “Ablative coating” means a coating that chars when exposed to open flame or extreme temperatures, as would occur during the failure of an engine casing or during aerodynamic heating. The ablative char surface serves as an insulative barrier, protecting adjacent components from the heat or open flame.

(ii) “Adhesion promoter” means a very thin coating applied to a substrate to promote wetting and form a chemical bond with the subsequently applied material.

(iii) “Adhesive bonding primer” means a primer applied in a thin film to aerospace components for the purpose of corrosion inhibition and increased adhesive bond strength by attachment. There are two categories of adhesive bonding primers: primers with a design cure at 250°F or below and primers with a design cure above 250°F.

(iv) “Aerosol coating” means a coating applied by means of a hand-held, pressurized container, which is non-refillable or which utilizes non-refillable propellant canisters and which expels an adhesive or a coating in a finely divided spray when a valve on the container is depressed.

(v) “Aerospace facility” means any facility that produces, reworks, or repairs in any amount any commercial, civil, or military aerospace vehicle or component. Regulated activities include coating, chemical milling, solvent use, and depainting operations.

(vi) “Aerospace vehicle or component” means any fabricated part, processed part, assembly of parts, or completed unit, with the exception of electronic components, of any aircraft.

(vii) “Aircraft transparency” means the aircraft windshield, canopy, passenger windows, lenses and other components which are constructed of transparent materials.

(viii) “Airless and air-assisted airless spray” mean any coating spray application technology that relies solely on the fluid pressure of the coating to create an atomized coating spray pattern and does not apply any atomizing compressed air to the coating before it leaves the spray gun nozzle. Air-assisted airless spray uses compressed air to shape and distribute the fan of atomized coating, but still uses fluid pressure to create the atomized coating.

~~(viii)~~(ix) “Antichafe coating” means a coating applied to areas of moving aerospace components that may rub during normal operations or installation.

~~(ix)~~(x) “Antique aerospace vehicle or component” means an aircraft or component thereof that was built at least 30 years ago. An antique aerospace vehicle would not routinely be in commercial or military service in the capacity for which it was designed.

~~(x)~~(xi) “Aqueous cleaning solvent” means a cleaning solvent in which water is the primary ingredient (greater than 80 percent by weight of cleaning solvent solution as applied must be water). Detergents, surfactants, and bioenzyme mixtures and nutrients may be combined with the water along with a variety of additives such as organic solvents (e.g., high boiling point alcohols), builders, saponifiers, inhibitors, emulsifiers, pH buffers, and antifoaming agents. Aqueous solutions must have a flash point greater than 93°C (200°F) (as reported by the manufacturer) and the solution must be miscible with water.

~~(xi)~~(xii) “Bearing coating” means a coating applied to an antifriction bearing, a bearing housing, or the area adjacent to such a bearing in order to facilitate bearing function or to protect base material from excessive wear. A material shall not be classified as a bearing coating if it can also be classified as a dry lubricative material or a solid film lubricant.

~~(xii)~~(xiii) “Bonding maskant” means a temporary coating used to protect selected areas of aerospace parts from strong acid or alkaline solutions during processing for bonding.

~~(xiii)~~(xiv) “Caulking and smoothing compounds” means semi-solid materials which are applied by hand application methods and are used to aerodynamically smooth exterior vehicle surfaces or fill cavities such as bolt hole accesses. A material shall not be classified as a caulking and smoothing compound if it can be classified as a sealant.

~~(xiv)~~(xv) “Chemical agent-resistant coating (CARC)” means an exterior topcoat designed to withstand exposure to chemical warfare agents or the decontaminants used on these agents.

~~(xv)~~(xvi) “Chemical milling maskants” means a coating that is applied directly to aluminum components to protect surface areas when chemical milling the component with a Type I or Type II etchant. Type I chemical milling maskants are used with a Type I etchant and Type II chemical milling maskants are used with a Type II etchant. This definition does not include bonding maskants, critical use and line sealer maskants, and seal coat maskants. Additionally, maskants that must be used with a combination of Type I or Type II etchants and any of the above types of maskants are also not included in this definition. (See also Type I and Type II etchant definitions.)

(xvii) “Classified National Security Information” means information that has been determined pursuant to Executive Order 13526, ‘Classified National Security Information,’ December 29, 2009 or any successor order to require protection against unauthorized disclosure and is marked to indicate its classified status when in documentary form. The term “Classified Information” is an alternative term that may be used instead of “Classified National Security Information.”

~~(xvi)~~(xviii) “Cleaning operation” means collectively spray-gun, hand-wipe, and flush cleaning operations.

~~(xvii)~~(xix) “Cleaning solvent” means a liquid material used for hand-wipe, spray gun, or flush cleaning. This definition does not include solutions that contain no VOCs (i.e., VOC content less than 1.0 weight percent).

~~(xviii)~~(xx) “Clear coating” means a transparent coating applied over a colored opaque coating, metallic substrate, or placard to give improved gloss and protection to the color coat. In some cases, a clearcoat refers to any transparent coating without regard to substrate.

~~(xix)~~(xxi) “Coating” means a material that is applied to the surface of an aerospace vehicle or component to form a decorative, protective, or functional solid film, or the solid film itself, to a substrate for decorative, protective, or functional purposes. Such materials include, but are not limited to, paints, sealants, liquid plastic coatings, caulks, inks, adhesives, and maskants. Decorative, protective, or functional materials that consist only of protective oils for metal, acids, bases, or any combination of these substances; paper film or plastic film which may be precoated with an adhesive by the film manufacturer; or pre-impregnated composite sheets are not considered coatings for the purposes of subparagraph (kkk). Materials in handheld non-refillable aerosol containers, touch-up markers, and marking pens are also not considered coatings for the purposes of subparagraph (kkk). A liquid plastic coating means a coating made from fine particle-size polyvinyl chloride (PVC) in solution (also referred to as a plastisol).

~~(xx)~~(xxii) “Coating operation” means using a spray booth, tank, or other enclosure or any area, such as a hangar, for applying a single type of coating (e.g., primer); using the same spray booth for applying another type of coating (e.g., topcoat) constitutes a separate coating operation for which compliance determinations are performed separately.

~~(xxi)~~(xxiii) “Coating unit” means a series of one or more coating applicators and any associated drying area and/or oven wherein a coating is applied, dried, and/or cured. A coating unit ends at

the point where the coating is dried or cured, or prior to any subsequent application of a different coating. It is not necessary to have an oven or flashoff area to be included in this definition.

~~(xxii)~~(xxiv) “Commercial exterior aerodynamic structure primer” means a primer used on aerodynamic components and structures that protrude from the fuselage, such as wings and attached components, control surfaces, horizontal stabilizers, vertical fins, wing-to-body fairings, antennae, landing gear, and doors, for the purpose of extended corrosion protection and enhanced adhesion.

~~(xxiii)~~(xxv) “Commercial interior adhesive” means materials used in the bonding of passenger cabin interior components. These components must meet FAA fireworthiness requirements.

~~(xxiv)~~(xxvi) “Compatible substrate primer” means either compatible epoxy primer or adhesive primer.

~~(xxv)~~(xxvii) “Corrosion prevention compound” means a compound that provides corrosion protection by displacing water and penetrating mating surfaces, forming a protective barrier between the metal surface and moisture. Coatings containing oils or waxes are excluded from this category.

~~(xxvi)~~(xxviii) “Critical use and line sealer maskant” means a temporary coating, not covered under other maskant categories, used to protect selected areas of aerospace parts from strong acid or alkaline solutions such as those used in anodizing, plating, chemical milling and processing of magnesium, titanium, or high-strength steel, high-precision aluminum chemical milling of deep cuts, and aluminum chemical milling of complex shapes. Materials used for repairs or to bridge gaps left by scrubbing operations are also included in this category.

~~(xxvii)~~(xxix) “Cryogenic flexible primer” means a primer designed to provide corrosion resistance, flexibility, and adhesion of subsequent coating systems when exposed to loads up to and surpassing the yield point of the substrate at cryogenic temperatures (-275°F and below).

~~(xxviii)~~(xxx) “Cryoprotective coating” means a coating that insulates cryogenic or subcooled surfaces to limit propellant boil-off, maintain structural integrity of metallic structures during ascent or reentry, and prevent ice formation.

~~(xxix)~~(xxxi) “Cyanoacrylate adhesive” means a fast-setting, single component adhesive that cures at room temperature. Also known as “super glue.”

~~(xxx)~~(xxxii) “Depainting operation” means the use of a chemical agent, media blasting, or any other technique to remove permanent coatings from the outer surface of an aerospace vehicle or components. The depainting operation includes washing of the aerospace vehicle or component to remove residual stripper, media, or coating residue.

~~(xxx)~~(xxxiii) “Dry lubricative material” means a coating consisting of lauric acid, cetyl alcohol, waxes, or other noncross linked resin-bond materials that act as a dry lubricant.

~~(xxxii)~~(xxxiv) “Electric or radiation-effect coating” means a coating or coating system engineered to interact, through absorption or reflection, with specific regions of the electromagnetic energy spectrum, such as the ultraviolet, visible, infrared, or microwave regions. Uses include, but are not limited to, lighting strike protection, electromagnetic pulse (EMP) protection, and radar avoidance. Coatings that have been designated as “classified” by the Department of Defense are exempt.

~~(xxxiii)~~(xxxv) “Electrostatic discharge and electromagnetic interference (EMI) coating” means a coating applied to space vehicles, missiles, aircraft radomes, and helicopter blades to disperse static energy or reduce electromagnetic interference.

~~(xxxiv)~~(xxxvi) “Elevated-temperature Skydrol-resistant commercial primer” means a primer applied primarily to commercial-type aircraft that must withstand immersion in phosphate-ester (PE) hydraulic fluid (Skydrol 500b or equivalent) at the elevated temperature of 150°F for 1,000 hours.

~~(xxxv)~~(xxxvii) “Epoxy polyamide topcoat” means a coating used where harder films are required or in some areas where engraving is accomplished in camouflage colors.

~~(xxxvi)~~(xxxviii) “Exempt solvent” means a specified organic compound that has been determined by the EPA to have negligible photochemical reactivity and is listed in 40 CFR 51.100 and/or 391-3-1-.01(III).

~~(xxxvii)~~(xxxix) “Fire-resistant (interior) coating” means for civilian aircraft, fire-resistant coatings are used on passenger cabin interior parts that are subject to the FAA fire-worthiness requirements. For military aircraft, fire-resistant interior coatings are used on parts that are subject to the flammability requirements of MIL-STD-1630A and MIL-A-87721. For space applications, these coatings are used on parts that are subject to the flammability requirements of SE-R-0006 and SSP 30233.

~~(xxxviii)~~(xli) “Flexible primer” means a primer that meets flexibility requirements such as those needed for adhesive bond primer fastener heads or on surfaces expected to contain fuel. The flexible coating is required because it provides a compatible, flexible substrate over bonded sheet rubber and rubber-type coatings as well as a flexible bridge between fasteners, skin, and skin-to-skin joints on outer aircraft skins.

~~(xxxix)~~(xlii) “Flight test coating” means a coating applied to aircraft other than missiles or single-use aircraft prior to flight testing to protect the aircraft from corrosion and to provide required marking during flight test evaluation.

~~(xl)~~(xliii) “Flush cleaning” means the removal of contaminants such as dirt, grease, and coatings from an aerospace vehicle or component or coating equipment by passing solvent over, into, or through the item being cleaned. The solvent may simply be poured into the item cleaned and then drained, or be assisted by air or hydraulic pressure, or by pumping. Hand-wipe cleaning operations where wiping, scrubbing, mopping, or other hand actions used are not included in this definition.

~~(xii)~~(xliii) “Fuel tank adhesive” means a non-rubber based adhesive used to bond components exposed to fuel and which must be compatible with fuel tank coatings.

~~(xii)~~(xliv) “Fuel tank coating” means a coating applied to fuel tank components for the purpose of corrosion and/or bacterial growth inhibition and to assure sealant adhesion in extreme environmental conditions.

~~(xliii)~~(xlv) “General aviation” means that segment of civil aviation that encompasses all facets of aviation except air carriers, commuters, and military. General aviation includes charter and corporate-executive transportation, instruction, rental, aerial application, aerial observation, business, pleasure, and other special uses.

~~(xliv)~~(xlvi) “General aviation rework facility” means any aerospace facility with the majority of its revenues resulting from the reconstruction, repair, maintenance, repainting, conversion, or alteration of general aviation aerospace vehicles or components.

~~(xlv)~~(xlvii) “Hand-wipe cleaning operation” means removing contaminants such as dirt, grease, oil, and coatings from an aerospace vehicle or component by physically rubbing it with a material such as a rag, paper, or cotton swab that has been moistened with a cleaning solvent.

~~(xlvi)~~(xlviii) “High temperature coating” means a coating designed to withstand temperatures of more than 350°F.

~~(xlvii)~~(xlix) “High volume low pressure (HVLP) spray equipment” means spray equipment that is used to apply coating by means of a spray gun that operates at 10.0 psig of atomizing air pressure or less at the air cap.

~~(xlviii)~~(l) “Hydrocarbon-based cleaning solvent” means a cleaning solvent that is composed of a mixture of photochemically reactive hydrocarbons and oxygenated hydrocarbons and have a maximum vapor pressure of seven mm Hg at 20°C. These cleaners also contain no hazardous air pollutants.

~~(l)~~(li) “Insulation covering” means material that is applied to foam insulation to protect the insulation from mechanical or environmental damage.

~~(li)~~(lii) “Intermediate release coating” means a thin coating applied beneath topcoats to assist in removing the topcoats in repainting operations and generally to allow the use of less hazardous repainting methods.

~~(lii)~~(liii) “Lacquer” means a clear or pigmented coating formulated with a nitrocellulose or synthetic resin to dry by evaporation without a chemical reaction. Lacquers are resolvable in their original solvent.

~~(liii)~~(liv) “Leak” means any visible leakage, including misting and clouding.

~~(lii)~~(lv) “Metallized epoxy coating” means a coating that contains relatively large quantities of metallic pigmentation for appearance and/or added protection.

~~(liv)~~(lvi) “Mold release” means a coating applied to a mold surface to prevent the molded piece from sticking to the mold as it is removed.

(lvii) “Non-VOC material” means a primer, topcoat, specialty coating, chemical milling maskant, cleaning solvent, or stripper that contains no more than 1.0 percent by mass VOC.

~~(lv)~~(lviii) “Nonstructural adhesive” means an adhesive that bonds nonload bearing aerospace components in noncritical applications and is not covered in any other specialty adhesive categories.

~~(lvi)~~(lix) “Optical antireflection coating” means a coating with a low reflectance in the infrared and visible wavelength ranges that is used for antireflection on or near optical and laser hardware.

~~(lvii)~~(lx) “Part marking coating” means coatings or inks used to make identifying markings on material, components, and/or assemblies. These markings may be either permanent or temporary.

~~(lviii)~~(lxi) “Pretreatment coating” means an organic coating that contains at least 0.5 percent acids by weight and is applied directly to metal or composite surfaces provide surface etching, corrosion resistance, adhesion, and ease of stripping.

~~(lix)~~(lxii) “Primer” means the first layer and any subsequent layers of identically formulated coating applied to the surface of an aerospace vehicle or component. Primers are typically used for corrosion prevention, protection from the environment, functional fluid resistance, and adhesion of subsequent coatings. Primers that are defined as specialty coatings are not included under this definition.

~~(lx)~~(lxiii) “Rain erosion-resistant coating” means a coating or coating system used to protect leading edges of parts such as flaps, stabilizers, radomes, engine inlet nacelles, etc., against erosion caused by rain impact during flight.

~~(lxi)~~(lxiv) “Research and development” means an operation whose primary purpose is for research and development of new processes and products and that is conducted under the close supervision of technically trained personnel and is not involved in the manufacture of final or intermediate products for commercial purposes, except in a de minimis manner.

~~(lxii)~~(lxv) “Rocket motor bonding adhesive” means an adhesive used in rocket motor bonding applications.

~~(lxiii)~~(lxvi) “Rocket motor nozzle coating” means a catalyzed epoxy coating system used in elevated temperature applications on rocket motor nozzles.



~~(lxiv)~~(lxvii) “Rubber-based adhesive” means a quick setting contact cement that provide a strong, yet flexible bond between two mating surfaces that may be of dissimilar materials.

~~(lxv)~~(lxviii) “Scale Inhibitor” means a coating that is applied to the surface of a part prior to thermal processing to inhibit the formation of scale.

~~(lxvi)~~(lxix) “Screen print ink” means an ink used in screen printing processes during fabrication of decorative laminates and decals.

~~(lxvii)~~(lxx) “Sealant” means a material used to prevent the intrusion of water, fuel, air, or other liquids or solids from certain areas of aerospace vehicles or components.

~~(lxviii)~~(lxxi) “Seal coat maskant” means an overcoat applied over a maskant to improve abrasion and chemical resistance during production operations.

~~(lxix)~~(lxxii) “Self-priming topcoat” means a topcoat that is applied directly to an uncoated aerospace vehicle or component for purposes of corrosion prevention, environmental protection, and functional fluid resistance. More than one layer of identical coating formulation may be applied to the vehicle or component.

~~(lxx)~~(lxxiii) “Semi-aqueous cleaning solvent” means a solution in which water is a primary ingredient (greater than 60 percent by weight of the solvent solution as applied must be water).

~~(lxxi)~~(lxxiv) “Silicone insulation material” means an insulating material applied to exterior metal surfaces for protection from high temperatures caused by atmospheric friction or engine exhaust. These materials differ from ablative coatings in that they are not “sacrificial.”

~~(lxxii)~~(lxxv) “Solid film lubricant” means a very thin coating consisting of a binder system containing as its main pigment material one or more of the following: molybdenum, graphite, polytetrafluoroethylene (PTFE), or other solids that act as a dry lubricant between faying surfaces.

~~(lxxiii)~~(lxxvi) “Specialty coating” means a coating that, even though it meets the definition of a primer, topcoat, or self-priming topcoat, has additional performance criteria beyond those of primers, topcoats, and self-priming topcoats for specific applications. These performance criteria may include, but are not limited to, temperature or fire resistance, substrate compatibility, antireflection, temporary protection or marking, sealing, adhesively joining substrates, or enhanced corrosion protection.

~~(lxxiv)~~(lxxvii) “Specialized function coating” means a coating that fulfills extremely specific engineering requirements that are limited in application and are characterized by low volume usage. This category excludes coatings covered in other Specialty coating categories.

(lxxviii) “Spray-applied coating operation” means coatings that are applied using a device that creates an atomized mist of coating and deposits the coating on a substrate. For the purposes of subparagraph (kkk), spray-applied coatings do not include the following materials or activities:

(I) Coatings applied from a hand-held device with a paint cup capacity that is equal to or less than 3.0 fluid ounces (89 cubic centimeters) in which no more than 3.0 fluid ounces of coating is applied in a single application (i.e., the total volume of a single coating formulation applied during any one day to any one aerospace vehicle or component). Under this definition, the use of multiple small paint cups and the refilling of a small paint cup to spray apply more than 3.0 fluid ounces of a coating is a spray-applied coating operation. Under this definition, the use of a paint cup liner in a reusable holder or cup that is designed to hold a liner with a capacity of more than 3.0 fluid ounces is a spray-applied coating operation.

(II) Application of coating using powder coating, hand-held non-refillable aerosol containers, or non-atomizing application technology, including but not limited to paint brushes, rollers, flow coating, dip coating, electrodeposition coating, web coating, coil coating, touch-up markers, marking pens, trowels, spatulas, daubers, rags, sponges, mechanically and/or pneumatic-driven syringes, and inkjet machines.

(III) Application of adhesives, sealants, maskants, caulking materials, and inks.

~~(lxxxv)~~(lxxxix) “Spray gun” means a device that atomizes a coating or other material and projects the particulates or other material onto a substrate.

(lxxx) “Stripper” means a liquid that is applied to an aerospace vehicle or component to remove permanent coatings such as primers, topcoats, and specialty coatings.

~~(lxxxvi)~~(lxxxix) “Structural autoclavable adhesive” means an adhesive used to bond load-carrying aerospace components that is cured by heat and pressure in an autoclave.

~~(lxxxvii)~~(lxxxix) “Structural nonautoclavable adhesive” means an adhesive used to bond load-carrying aerospace components that is cured under ambient conditions.

~~(lxxxviii)~~(lxxxix) “Surface preparation” means the removal of contaminants from the surface of an aerospace vehicle or component or the activation or reactivation of the surface in preparation for the application of a coating.

~~(lxxxix)~~(lxxxix) “Temporary protective coating” means a coating applied to provide scratch or corrosion protection during manufacturing, storage, or transportation. Two types include peelable protective coatings and alkaline removable coatings. These materials are not intended to protect against strong acid or alkaline solutions.

~~(lxxx)~~(lxxxv) “Thermal control coating” means a coating formulated with specific thermal conductive or radiative properties to permit temperature control of the substrate.

~~(lxxxix)~~(lxxxvi) “Topcoat” means a coating that is applied over a primer on a aerospace vehicle or component for appearance, identification, camouflage, or protection. Topcoats that are defined as specialty coatings are not included under this definition.

~~(lxxxii)~~(lxxxvii) “Touch-up and repair coating” means a coating used to cover minor coating imperfections appearing after the main coating operation.

~~(lxxxiii)~~(lxxxviii) “Touch-up and repair operation” means that portion of the coating operation that is the incidental application of coating used to cover minor imperfections in the coating finish or to achieve complete coverage. This definition includes out-of-sequence or out-of-cycle coating.

~~(lxxxiv)~~(lxxxix) “Type I etchant” means a chemical milling etchant that contains varying amounts of dissolved sulfur and does not contain amines.

~~(lxxxv)~~(xc) “Type II etchant” means a chemical milling etchant that is a strong sodium hydroxide solution containing amines.

~~(lxxxvi)~~(xci) “Wet fastener installation coating” means a primer or sealant applied by dipping, brushing, or daubing to fasteners that are installed before the coating is cured.

~~(lxxxvii)~~(xcii) “Wing coating” means a corrosion-resistant topcoat that is resilient enough to withstand the flexing of the wings.

#### 18. Applicability.

(i) The requirements of ~~this subsection~~subparagraph (kkk) shall apply to all aerospace facilities with potential emissions of volatile organic compounds exceeding 100 tons per year, except in the counties of Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding, and Rockdale, where facilities with potential emissions of volatile organic compounds exceeding 25 tons per year are subject to ~~this subsection~~subparagraph (kkk).

(ii) Effective January 1, 2015, the requirements of ~~this subsection~~subparagraph (kkk) shall apply to all aerospace facilities with potential emissions of volatile organic compounds exceeding 25 tons per year in Barrow, Bartow, Carroll, Hall, Newton, Spalding, or Walton County. The requirements of this subparagraph (ii) will no longer be applicable if the counties specified in this subparagraph (ii) are re-designated to attainment for the 1997 National Ambient Air Quality Standard for ozone prior to January 1, 2015. In the event the 1997 National Ambient Air Quality Standard for ozone is violated in these counties or the counties specified in subparagraph (i) above, the requirements of this subparagraph (ii) will only be reinstated if the Director determines that the measure is necessary to meet the requirements of the contingency plan.

#### 19. Compliance Dates.

(i) All aerospace facilities subject to ~~this subsection~~subparagraph (kkk) and located in the counties of Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding and Rockdale shall be in compliance.

(ii) All aerospace facilities subject to ~~this subsection~~subparagraph (kkk); located outside Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry,

Paulding and Rockdale counties; and in operation on or before October 1, 1999, shall be in compliance by January 1, 2001.

(iii) All aerospace facilities subject to ~~this subsection~~ subparagraph (kkk); located outside Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding and Rockdale counties; and which begin initial operation after October 1, 1999, shall be in compliance upon startup.

(iv) All aerospace facilities subject to subparagraph (kkk) and utilizing specialty coatings that begin operation after the effective date of this rule shall be in compliance upon startup. All aerospace facilities subject to subparagraph (kkk) and utilizing specialty coatings that are in operation on or before the effective date of this rule shall be in compliance on or before March 31, 2019.

Authority: O.C.G.A. Section 12-9-1 et seq., as amended.