APPENDIX N. SPECIALTY COATINGS VOC CONTENT AND EQUATIONS

The following table and equations are for use only in OAC 252:100-39-47.

SPECIALTY COATINGS VOC CONTENT LIMITS

Coating Type	Limit	
	lb/gal	g/l[1]
Ablative Coating	5.0	600
Adhesion Promoter	7.4	890
Adhesive Bonding Primers:		
Cured at 250◦F or below	7.1	850
Cured above 250◦F	8.6	1,030
Adhesives:		
Commercial Interior Adhesive	6.3	760
Cyanoacrylate Adhesive	8.5	1,020
Fuel Tank Adhesive	5.2	620
Nonstructural Adhesive	3.0	360
Rocket Motor Bonding Adhesive	7.4	890
Rubber-based Adhesive	7.1	850
Structural Autoclavable Adhesive	0.5	60
Structural Nonautoclavable Adhesive	7.1	850
Antichafe Coating	5.5	660
Bearing Coating	5.2	620
Caulking and Smoothing Compounds	7.1	850
Chemical Agent-Resistant Coating	4.6	550
Clear Coating	6.0	720
Commercial Exterior Aerodynamic Structure Primer	5.4	650
Compatible Substrate Primer	6.5	780
Corrosion Prevention Compound	5.9	710

Coating Type	Limit	
	lb/gal	g/l[1]
Cryogenic Flexible Primer	5.4	645
Cryoprotective Coating	5.0	600
Dry Lubricative Material	7.3	880
Electric or Radiation-Effect Coating	6.7	800
Electrostatic Discharge and Electromagnetic Interference (EMI)Coating	6.7	800
Elevated-Temperature Skydrol-Resistant Commercial Primer	6.2	740
Epoxy Polyamide Topcoat	5.5	660
Fire-Resistant (Interior) Coating	7.3	800
Flexible Primer	5.3	640
Flight-Test Coatings		
Missile or Single Use Aircraft	3.5	420
All Other	7.0	840
Fuel-Tank Coating	6.0	720
High-Temperature Coating	7.1	850
Insulation Covering	6.2	740
Intermediate Release Coating	6.3	750
Lacquer	6.9	830
Maskants:		
Bonding Maskant	10.2	1,230
Critical Use and Line Sealer Maskant	8.5	1,020
Seal Coat Maskant	10.2	1,230
Metallized Epoxy Coating	6.2	740
Mold Release	6.5	780
Optical Anti-Reflective Coating	6.3	750
Part Marking Coating	7.1	850
Pretreatment Coating	6.5	780

Coating Type	Limit	
	lb/gal	g/l[1]
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

[1]Coating limits expressed in terms of mass (grams) of VOC per volume (liters) of coating less water and less exempt solvent using Equation 1 below.

EQUATION 1

Grams of VOC per liter of coating (less water and less exempt solvent) shall be calculated using the following formula:

$$g/l = (W_s - W_w - W_{es})/(V_s - V_w - V_{es})$$

Where:

W_s = weight of total volatiles in grams
W_w = weight of water in grams
W_{es} = weight of exempt compounds in grams
V_s = volume of coating in liters
V_w = volume of water in liters
V_{es} = volume of exempt compounds in liters

EQUATION 2

VOC composite vapor pressure shall be calculated by the following equation.

$$PPc = \frac{\sum_{i=1}^{n} \frac{(Wi)(VPi)}{MWi}}{\frac{Ww}{MWw} + \sum_{e=1}^{n} \frac{We}{MWe} + \sum_{i=1}^{n} \frac{Wi}{MWi}}$$

Where:

Wi = weight of the "i"th VOC compound in grams
Ww = weight of water in grams
We = weight of nonwater, non-VOC compound in grams
MWi = molecular weight of the "i"th VOC compound in g/g-mole
MWw = molecular weight of water in g/g-mole
MWe = molecular weight of exempt compound in g/g-mole
PPc = VOC composite partial pressure at 20◦C in mm Hg
VPi = vapor pressure of the "i"th VOC compound at 20◦C