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1.2 Principle. A known amount of methacrylate multicomponent coating is dispersed in a weighing dish using a stirring device before the volatile matter is removed by heating in an oven.

2.0 PROCEDURE

2.1 Prepare about 100 milliliters (mL) of sample by mixing the components in a storage container, such as a glass jar with a screw top or a metal can with a cap. The storage container should be just large enough to hold the mixture. Combine the components (by weight or volume) in the ratio recommended by the manufacturer. Tightly close the container between additions and during mixing to prevent loss of volatile materials. Most manufacturers' mixing instructions are by volume. Because of possible error caused by expansion of the liquid when measuring the volume, it is recommended that the components be combined by weight. When weight is used to combine the components and the manufacturer's recommended ratio is by volume, the density must be determined by section 3.5 of Method 24 of appendix A of 40 CFR part 60.

2.2 Immediately after mixing, take aliquots from this 100 mL sample for determination of the total volatile content, water content, and density. To determine water content, follow section 3.4 of Method 24 of appendix A of 40 CFR part 60. To determine density, follow section 3.5 of Method 24. To determine total volatile content, use the apparatus and reagents described in section 3.8.2 of Method 24 and the following procedures:

2.2.1 Weigh and record the weight of an aluminum foil weighing dish and a metal paper clip. Using a syringe as specified in section 3.8.2.1 of Method 24, weigh to 1 milligrams (mg), by difference, a sample of coating into the weighing dish. For methacrylate multicomponent coatings used for traffic marking use 3.0 ±0.1 g.

2.2.2 Add the specimen and use the metal paper clip to disperse the specimen over the surface of the weighing dish. If the material forms a lump that cannot be dispersed, discard the specimen and prepare a new one. Similarly, prepare a duplicate. The sample shall stand for a minimum of 1 hour, but no more than 24 hours before being oven dried at 110 ±5 degrees Celsius for 1 hour.

2.2.3 Heat the aluminum foil dishes containing the dispersed specimens in the forced draft oven for 60 minutes at 110 ±5 degrees Celsius. Caution—provide adequate ventilation, consistent with accepted laboratory practice, to prevent solvent vapors from accumulating to a dangerous level.

2.2.4 Remove the dishes from the oven, place immediately in a desiccator, cool to ambient temperature, and weigh to within 1 mg. After weighing, break up the film of the coating using the metal paper clip. Weigh dish to within 1 mg. Return to forced draft oven for an additional 60 minutes at 110 ±5 degrees Celsius.

2.2.5 Remove the dishes from the oven, place immediately in a desiccator, cool to ambient temperature, and weigh to within 1 mg.

2.2.6 Run analyses in pairs (duplicate sets for each coating mixture until the criterion in section 4.3 of Method 24 of appendix A of 40 CFR part 60 is met. Calculate the weight of volatile matter for each heating period following Equation 24–2 of Method 24 and record the arithmetic average. Add the arithmetic average for the two heating periods to obtain the weight fraction of the volatile matter.

3.0 DATA VALIDATION PROCEDURE

3.1 Follow the procedures in Section 4 of Method 24 of appendix A to 40 CFR part 60.

3.2 If more than 10 percent of the sample is lost when the sample is being broken up in 2.2.4, the sample is invalid.

4.0 CALCULATIONS

Follow the calculation procedures in Section 5 of Method 24 of appendix A of 40 CFR part 60.

TABLE 1 TO SUBPART D OF PART 59—VOLATILE ORGANIC COMPOUND (VOC), CONTENT LIMITS FOR ARCHITECTURAL COATINGS

[Unless otherwise specified, limits are expressed in grams of VOC per liter of coating thinned to the manufacturer's maximum recommendation excluding the volume of any water, exempt compounds, or colorant added to tint bases.]

Coating category	Grams VOC per liter	Pounds VOC per gallon [a]
Antenna coatings	530	4.4
Anti-fouling coatings	450	3.8
Anti-graffiti coatings	600	5.0
Bituminous coatings and mastics	500	4.2
Bond breakers	600	5.0
Calcimine recoater	475	4.0
Chalkboard resurfacers	450	3.8
Concrete curing compounds	350	2.9
Concrete curing and sealing compounds	700	5.8

[Unless otherwise specified, limits are expressed in grams of VOC per liter of coating thinned to the manufacturer's maximum recommendation excluding the volume of any water, exempt compounds, or colorant added to tint bases.]

Coating category	Grams VOC per liter	Pounds VOC per gallon [a]
Concrete protective coatings	400	3.3
Concrete surface retarders	780	6.5
Conversion varnish	725	6.0
Dry fog coatings	400	3.3
Extreme high durability coatings	800	6.7
Faux finishing/glazing	700	5.8
Fire-retardant/resistive coatings:		
Clear	850	7.1
Opaque	450	3.8
Flat coatings:		
Exterior coatings	250	2.1
Interior coatings	250	2.1
Floor coatings	400	3.3
Flow coatings	650	5.4
Form release compounds	450	3.8
Graphic arts coatings (sign paints)	500	4.2
Heat reactive coatings	420	3.5
High temperature coatings	650	5.4
Impacted immersion coatings	780	6.5
Industrial maintenance coatings	450	3.8
Lacquers (including lacquer sanding sealers)	680	5.7
Magnesite cement coatings	600	5.0
Mastic texture coatings	300	2.5
Metallic pigmented coatings	500	4.2
Multi-colored coatings	580	4.8
Nonferrous ornamental metal lacquers and surface protectants	870	7.3
Nonflat coatings:		
Exterior coatings	380	3.2
Interior coatings	380	3.2
Nuclear coatings	450	3.8
Pretreatment wash primers	780	6.5
Primers and undercoaters	350	2.9
Quick-dry coatings:		
Enamels	450	3.8
Primers, sealers, and undercoaters	450	3.8
Repair and maintenance thermoplastic coatings	650	5.4
Roof coatings	250	2.1
Rust preventative coatings	400	3.3
Sanding sealers (other than lacquer sanding sealers)	550	4.6
Sealers (including interior clear wood sealers)	400	3.3
Shellacs:		
Clear	730	6.1
Opaque	550	4.6
Stains:		
Clear and semitransparent	550	4.6
Opaque	350	2.9
Low solids	[b] 120	[b] 1.0
Stain controllers	720	6.0
Swimming pool coatings	600	5.0
Thermoplastic rubber coatings and mastics	550	4.6
Traffic marking coatings	150	1.3
Varnishes	450	3.8
Waterproofing sealers and treatments	600	5.0
Wood preservatives:		
Below ground wood preservatives	550	4.6
Clear and semitransparent	550	4.6
Opaque	350	2.9
Low solids	[b] 120	[b] 1.0
Zone marking coatings	450	3.8

[a] English units are provided for information only. Compliance will be determined based on the VOC content limit, as expressed in metric units.

[b] Units are grams of VOC per liter (pounds of VOC per gallon) of coating, including water and exempt compounds, thinned to the maximum thinning recommended by the manufacturer.

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