AkzoNobel
Aerospace Coatings

463-3-8
Flat Black Temperature Control Epoxy Topcoat

AkzoNobel
Tomorrow's Answers Today

Product Group

Epoxy topcoat

Characteristics

Product Information

- Chemically cured two-component epoxy topcoat
- Exhibits high thermal emittance and low outgassing results when exposed to space environments.
- Commonly used as the protective coating for spacecraft and spacecraft hardware.
- Approved for use by NASA (Spec. 10M01831) and major government subcontractors.
- For use over anodized or conversion coated aluminum surfaces.
- Can also be used on chemically cleaned copper and grit blasted steel or passivated stainless steel surfaces.

Components

Curing Solution, Thinner/Reducer

Curing Solution CA-118
Thinner TL-29

Specifications

Qualified Product List

Hughes	HMS 15-1376, Ty I, Cl 2 & Ty II, Cl 2 & 4
Lockheed Martin	LMS 70460
Santa Barbara Research	SBRC 150063, Ty I & II
USAF MIS	MIS-34328

The complete AkzoNobel Aerospace Coatings qualified product list (QPL) can be found at: **www.akzonobel.com/aerospace**

Surface Conditions

Cleaning

- Surface pretreatment is an essential part of the painting process.
- For most satisfactory adhesion, 463-3-8 should be applied over 10P4-2 primed surfaces.
- Primed surface should be coated within 2-48 hours. If the primed surface has dried longer than 48 hours, the surface should be lightly sanded with #400 grit or equivalent sandpaper, followed by a solvent wash using a clean cotton cloth dampened with MEK prior to topcoat.

AkzoNobel Aerospace Coatings
1 East Water Street, Waukegan, IL 60085, USA - Phone (847) 623 4200, Fax (847) 625 3200
Rijksstraatweg 31, 2171 AJ Sassenheim, The Netherlands - Phone (31) 71 308 2905, Fax (31) 71 308 2056

Internet: www.akzonobel.com/aerospace

463-3-8
Flat Black Temperature Control Epoxy Topcoat

Instruction for Use

Mixing Ratio (volume)	3 parts Base 463-3-8 1 part Curing Solutions CA-118 25% max. of total, to desired spraying viscosity Thinner TL-29 - Stir or Shake until all pigment is uniformly dispersed before adding curing solution. - Stir the catalyzed mixture thoroughly.
Induction Time	60 minutes
Initial Spraying Viscosity (25ºC/77ºF)	12 – 14 seconds ISO-Cup 4 14 – 18 seconds Zahn-Cup 2
Note	Viscosity measurements are provided as guidelines only and are not to be used as quality control parameters. Certified information is provided by certification documentation available on request.
Pot Life (25ºC/77ºF)	8 hours.
Dry Film Thickness (DFT)	1.3-1.8 mils / 33-46 microns (Specifications HMS, LMS, and MIS) 1.5-2.5 mils / 38-64 microns (Specification SBRC)

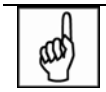
Application Recommendations

Conditions	Temperature: 15 – 35°C 59 – 95°F Relative Humidity: 35 – 75%
Note	The quality of the application of all coatings will be influenced by the spray equipment chosen and the temperature, humidity, and air flow of the paint application area. When applying the product for the first time, it is recommended that test panels be prepared in order to identify the best equipment settings to be used in optimizing the performance and appearance of the coating.

AkzoNobel Aerospace Coatings
1 East Water Street, Waukegan, IL 60085, USA - Phone (847) 623 4200, Fax (847) 625 3200
Rijksstraatweg 31, 2171 AJ Sassenheim, The Netherlands - Phone (31) 71 308 2905, Fax (31) 71 308 2056

Internet: www.akzonobel.com/aerospace

463-3-8
Flat Black Temperature Control Epoxy Topcoat

 Equipment	Any standard suction or pressure spray equipment. Satisfactory atomization is easily accomplished at a line pressure of 40-45 psi on a suction gun, or a line pressure of 35-45 psi on a pressure pot gun with 6-9 psi fluid line pressure.
 Number of coats	Spray apply a single uniform wet tack coat. Allow to flash for 10 minutes followed by a uniform wet cross coat to a dry film thickness of 1.3-1.8 mils. For specification SBRC 150063 the dry film thickness requirement is 1.5-2.5 mils. A third coat may be required to achieve this film thickness.
 Note	Note: For pressures from 10^{-6} to 10^{-9} mm Hg and possibly lower, it is essential that all solvent be forced from the film. This almost certainly requires heat. Ideally, 24 hours at room temp. (70°F/21°C) or 1 hour at 150°F/65°C should be allowed to pass between coats. The final coat should be held at 150°F/65°C for one hour, then 250°-300°F (121°-150°C) for one hour (½ hour if only one coat is used) before a hard vacuum is used. Additional days or even weeks lag time prior to final heat treatment have no effect since moisture absorption is negligible.
 Cleaning of Equipment	Use TL-29 or MEK immediately after use.

Physical Properties

 Drying Times according to AITM 2-0011 (25 +/- 2ºC / 77 +/- 2ºF, 55 +/- 5% RH)	Dry to handle	4 ± 2 hours at 65-75°F (18-24°C)
	Dry to water & fluid resistance	24 ± 1 hour @ 65-75°F (18-24°C) 12 ± 1 hour @ 90-100°F (32-38°C) 2 ± ½ hour @ 295-305°F (146-152°C)
Thermal emittance, Epsilon	0.92 ± 0.04	
Solar absorption	0.90 ± 0.05	
Continuous high temp limit	320-330°F (160-166°C)	
Outgassing	Not to exceed 10^{-7} g/cm^2 after exposure of 50 hrs. to 10^{-6} Torr at 212°F (100ºC). See note under Application.	
Weight	9.9 ± 0.2 lbs/gallon	

AkzoNobel Aerospace Coatings
1 East Water Street, Waukegan, IL 60085, USA - Phone (847) 623 4200, Fax (847) 625 3200
Rijksstraatweg 31, 2171 AJ Sassenheim, The Netherlands - Phone (31) 71 308 2905, Fax (31) 71 308 2056

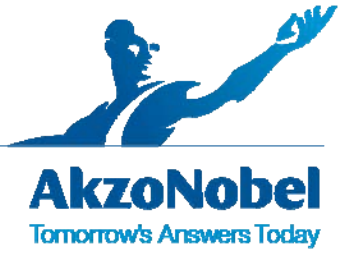
Internet: www.akzonobel.com/aerospace

463-3-8
Flat Black Temperature Control Epoxy Topcoat

Theoretical Coverage	12.46 m^2 per liter ready to apply at 25 µm dry film thickness 508 ft^2 per US gallon ready to apply at 1 mil dry film thickness
Dry Film Weight	40.7 g/m^2 at 25 micron 0.008 lbs/ft^2 at 1 mil
Volatile Organic Compounds	Max 596 g/l Max. 5.0 lb/gal
Specular gloss	5 maximum
Color	Flat Black, Fed Std 595B-37038
Flash-point	463-3-8 -4ºC / 25ºF CA-118 -5ºC / 23ºF TL-29 -4ºC / 25ºF
Storage	Store the product dry and at a temperature between 5 and 38ºC / 40 and 100ºF per AkzoNobel Aerospace Coatings specification. Store in the original unopened containers. Storage temperature may vary per OEM specification requirements. Refer to container label for specific storage life information.
Shelf life 5 - 38°C (40 - 100°F)	24 months per AkzoNobel Aerospace Coatings commercial specification. Shelf life may vary due to OEM specification requirements. Refer to container label for specific shelf life information.

AkzoNobel Aerospace Coatings
1 East Water Street, Waukegan, IL 60085, USA - Phone (847) 623 4200, Fax (847) 625 3200
Rijksstraatweg 31, 2171 AJ Sassenheim, The Netherlands - Phone (31) 71 308 2905, Fax (31) 71 308 2056

Internet: www.akzonobel.com/aerospace



Safety Precautions

Comply with all local safety, disposal and transportation regulations. Check the Material Safety Data Sheet (MSDS) and label of the individual products carefully before using the products. The MSDSs are available on request.

Issue date: December 2009 (supersedes May 2006) - FOR PROFESSIONAL USE ONLY

AkzoNobel Aerospace Coatings
1 East Water Street, Waukegan, IL 60085, USA - Phone (847) 623 4200, Fax (847) 625 3200
Rijksstraatweg 31, 2171 AJ Sassenheim, The Netherlands - Phone (31) 71 308 2905, Fax (31) 71 308 2056

Internet: www.akzonobel.com/aerospace