

LOCTITE EA 2000 AERO

Nitrile Phenolic Primer

(KNOWN AS Hysol AL 2000)

INTRODUCTION

LOCTITE EA 2000 AERO is a heat curing nitrile/phenolic water based primer. Cured LOCTITE EA 2000 AERO furnishes excellent resistance to chemicals and water. LOCTITE EA 2000 AERO is qualified to Boeing BMS 5-42, Type 3.

FEATURES

- Very low VOC; 15 G/L
- Changes color from blue to blue-green when cured
- Excellent resistance to chemicals
- Eliminates cobwebbing
- One box coat can deliver desired primer thickness
- Excellent visibility at sub-micron film thickness

Uses

Primer for anodized aluminum used in conjunction with nitrile/phenolic film adhesives.

| Typical Technical Data | LOCTITE® EA 2000 AERO |
|------------------------|--|
| Base: | Nitrile Rubber, Phenolic Resin |
| Color: | Dark Blue |
| Viscosity: | (Brkfld RVT Spl #2 @ 20 rpm) 800-2500 cps |
| Wt./Gallon: | 8.45 lbs. (1.01 kg/liter) |
| Total Solids (wt.): | 10-14% |
| Thinner: | Distilled or deionized water |
| Calculated Coverage: | 200 SF/Gal/Mil (4.9m ² /liter/.0254mm) |
| Dry Time: | (1 mil wet film dried at 73°F (23°C), 50% R.H.) 25-45 min. |
| Shelf Life: | 12 months @ 40-60°F (4-16°C) DO NOT FREEZE! |

*Shelf life of LOCTITE® EA 2000 AERO is 12 months when stored at 50°F (10°C). Storage at ambient temperature will reduce shelf life.

Typical technical data and performance properties given for reference only. Not for specification purposes.

Performance Properties

Aluminum lap shears and metal/metal peel prepared and tested per Boeing BMS 5-42, Class 1 requirements. LOCTITE EA 2000 AERO applied to 0.3 mil dry film thickness, Primer cured 90 minutes at 315°F (157°C).

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| Test Conditions | Test Temperature | LOCTITE | BMS 5-42 |
|--|------------------|--------------|-------------|
| Mechanical | °F/°C | EA 2000 AERO | Requirement |
| Test Property | | | |
| Metal/Metal Lap Shear, psi | -67/-55 | 3165 | 2300 |
| | 77/25 | 4200 | 2700 |
| | 180/82 | 1800 | 1375 |
| | 250/121 | 1500 | 1100 |
| Metal/Metal Climbing Peel, in-lb/in | 77/25 | 100 | 60 |

Application Method

Surface Preparation

Clean surfaces to be bonded; aluminum should be acid etched and then phosphoric acid anodized.

Method

Spray with conventional or airless system.

LOCTITE EA 2000 AERO Application

Gently stir the LOCTITE EA 2000 AERO; it is very stable with minimal settling. **DO NOT MIX AT HIGH SPEED OR SHAKE.** This will incorporate air into the LOCTITE® EA 2000 AERO, which will affect the spraying.

Apply LOCTITE EA 2000 AERO to surfaces to be bonded. The dry primer thickness should be 0.15-0.3 mil (.0038-.0076mm). Allow primer to *air dry 25-45 minutes at 73°F (23°C) (50% R.H.). Then place into a 315°F (157°C) oven and cure primer for 90 minutes. Keep in mind humidity affects evaporation rates, which can cause drying problems during warmer months. Normal drying cycles may require seasonal adjustments to provide adequate drying.

LOCTITE EA 2000 AERO being a water base will not go back into solution if it is left to dry out. After the container has been opened, any material that has dried must be strained out. Use a paint strainer or equivalent to strain out dried material that could affect the spraying of LOCTITE® EA 2000 AERO.

When applying LOCTITE EA 2000 AERO, keep gun about 12" from part and apply LOCTITE EA 2000 AERO in uniform Box Coat. If the spray gun sit between uses, it may be necessary to periodically wipe the tip with a damp cloth to keep the nozzle free of dried-out primer. Depending on how fast you move the gun, one box coat will put down about 0.1 mil dry film thickness. If you move across the panel quickly, you could need up to four box coats. This will put you at a dry film thickness of 0.1 - 0.3 mil. It is not necessary to let the primer flash between box coats but you can do this; both methods have been used and work well.

Spray equipment used: Binks Model 115, Cap-78S; Nozzle-78; needle 78SS. DeVilbiss Series 502, Cap 394; Nozzle-G; Needle-G. Accuspray, Cap-#9; Nozzle-#36; Needle-#36.

Spray parameters: Standard air line pressure of 40-70 psi. HVLP; 6-8 psi on the cup.



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Clean-up

The methods used to clean adhesive residue will vary with the physical state of the material.

Wet Adhesive

Wash parts with tap water.

Dried, Uncured Adhesive

Immerse parts in a 5-10% alkaline cleaner solution for 2-4 hours. Cleaning action can be accelerated by warming the cleaning bath to 70°C. The adhesive film will not dissolve, but will soften sufficiently to be removed by gentle scrubbing.

Cured Adhesive

The adhesive is largely unaffected by water or solvents. Abrasive removal of the adhesive film is the only practical method.

Storage

Store at 40°F (4°C) to 70°F (21°C). Keep away from heat. **DO NOT FREEZE.** Provide adequate ventilation. Avoid prolonged breathing of vapors. No extended or repeated contact with skin.

Storage of material @ above 70°F (21°C) will rapidly effect viscosity growth.

When stored as recommended, LOCTITE[®] EA 2000 AERO does not generally require agitation to assure a uniform mix. Upon standing, LOCTITE[®] EA 2000 AERO will develop a slight reversible gel that will raise its apparent viscosity and may make pumping more difficult. This reversible gel can readily be broken down with gentle agitation. Use a high pitch, low shear blade design, 1/4 to 1/3 the diameter of the container. Position the blade to approximately 1/3 the depth of the liquid. Mix on a low speed mixer (no more than 1725 rpm) for 3 minutes after movement is seen on the surface of the adhesive. Speed should be increased gradually or the container should be covered to avoid splashing. **DO NOT OVERMIX!** Extended mix times at high speed will entrap excessive amounts of air and may reduce the mechanical stability of the product.

Handling Precautions

Do not handle or use until the Material Safety Data Sheet has been read and understood.
For industrial use only.

DISPOSAL INFORMATION

Dispose of spent remover and paint residue per local, state and regional regulations. Refer to HENKEL TECHNOLOGIES MATERIAL SAFETY DATA SHEET for additional disposal information.



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PRECAUTIONARY INFORMATION

General:

As with most epoxy based systems, use this product with adequate ventilation. Do not get in eyes or on skin. Avoid breathing the vapors. Wash thoroughly with soap and water after handling. Empty containers retain product residue and vapors so obey all precautions when handling empty containers. Before using this product refer to container label and HENKEL TECHNOLOGIES MATERIAL SAFETY DATA SHEET for additional precautionary, handling and first aid information.

Note

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