



A brand of ITW Polymers Adhesives North America

Aluminum Liquid (F-2)

Description: Aluminum-filled, pourable epoxy for making molds, patterns, and holding fixtures that can be machined, drilled, or tapped.

Intended Use: Mold-making, patterns, holding fixtures, leveling equipment

Product features: **Machinable to metallic finish**
Low viscosity, self-leveling liquid
Castable
Low shrinkage

Limitations: Not recommended for long term exposure to concentrated acids and organic solvents.

Typical Physical Properties: *Technical data should be considered representative or typical only and should not be used for specification purposes.*

Cured 7 days @ 75° F

Adhesive Tensile Shear	2,700 psi
Coefficient of Thermal Expansion	50 [(in.) / (in) x °F]] x 10(-6)
Color	Aluminum
Compressive Strength	9,820 psi
Coverage/lb	70 sq.in./lb. @ 1/4"
Cured Hardness	85D
Cured Shrinkage	0.0009 in./in.
Dielectric Constant	8.6
Dielectric Strength	100 volts/mil
Flexural Strength	7,180 psi
Functional Cure	16 hrs.
Mix Ratio by Volume	5:1
Mix Ratio by Weight	9:1
Mixed Viscosity	15,000 - 25,000 cps
Modulus of Elasticity	7.5 psi x 10(5)
Pot Life @ 75F	75 min.
Recoat Time	2-4 hrs.
Solids by Volume	100
Specific Gravity	1.58 gm/cc
Specific Volume	17.5 in.(3) /lb.
Temperature Resistance	Wet: 120°F, Dry: 250°F
Thermal Conductivity	0.00158 [(cal)/(sec x cm x °C)]

TESTS CONDUCTED

Adhesive Tensile Shear ASTM D 1002
Cure Shrinkage ASTM D 2566
Dielectric Strength, volts/mil ASTM D 149
Coef. of Thermal Expansion ASTM D 696
Flexural Strength ASTM D 790
Thermal Conductivity ASTM C 177
Compressive Strength ASTM D 695
Cured Hardness Shore D ASTM D 2240
Dielectric Constant ASTM D 150
Modulus of Elasticity ASTM D 638

Surface Preparation:

1. Thoroughly clean the surface with Devcon® Cleaner Blend 300 to remove all oil, grease and dirt.
 2. Grit blast surface area with 8-40 mesh grit, or grind with a coarse wheel or abrasive disc pad, to create increased surface area for better adhesion (Caution: An abrasive disc pad can only be used provided white metal is revealed). Desired profile is 3-5mil, including defined edges (do not "feather-edge" epoxy).

Note: For metals exposed to sea water or other salt solution, grit-blast and high-pressure-water-blast the area, then leave overnight to allow any salts in the metal to "sweat" to the surface. Repeat blasting to "sweat out" all soluble salts. Perform chloride contamination test to determine soluble salt content (should be no more than 40ppm).
 3. Clean surface again with Devcon® Cleaner Blend 300 to remove all traces of oil, grease, dust or other foreign substances from the grit blasting.
 4. Repair surface as soon as possible to eliminate any changes or surface contaminants.
- WORKING CONDITIONS: Ideal application temperature is 55°F to 90°F. In cold working conditions, directly heat repair area to 100-110°F prior to applying epoxy and maintain at this temperature during product cure to dry off any moisture, contamination or solvents, as well as to achieve maximum performance properties.

**Mixing
Instructions:**

---- It is strongly recommended that full units be mixed, as ratios are pre-measured. ----

1. Add hardener to resin
2. Mix thoroughly with screwdriver or similar tool (continuously scrape material away from sides and bottom of container) until a uniform, streak-free consistency is obtained.

LARGE SIZES (3 lb, 4 lb, 25 lb): Use a propeller-type Jiffy Mixer on an electric drill. Use model HS-1 for 3 lb and 4 lb kits. Use model ES for 25 lb kit. Mix until color is uniform and consistent.

Note: Keep propeller below liquid line, as additional air can be added to mixture, resulting in air bubbles on the surface of the finished product.

**Application
Instructions:**

Brush a thin coat of epoxy onto the substrate to be duplicated, then pour Aluminum Liquid (F-2). Aluminum Liquid (F-2) cures in 16 hours, at which time it can be machined, drilled, or painted.

TO AVOID AIR ENTRAPMENT

Pour Aluminum Liquid (F-2) in a fine stream no greater than 1" thick to evacuate any trapped air. Let material set up and cool before pouring additional thicknesses.

Storage:

Store at room temperature, 70 °F.

Compliances:

Qualifies under MMM-A-1754

**Chemical
Resistance:**

Chemical resistance is calculated with a 7 day, room temp. cure (30 days immersion) @ 75°F

1,1,1-Trichloroethane	Very good	Methylene Chloride	Poor
Ammonia	Very good	Phosphoric 10%	Very good
Cutting Oil	Very good	Sodium Chloride Brine	Very good
Gasoline (Unleaded)	Very good	Sodium Hydroxide 10%	Fair
Hydrochloric 10%	Very good	Sulfuric 10%	Very good
Kerosene	Very good	Sulfuric 50%	Poor
Methanol	Fair	Trisodium Phosphate	Very good
Methyl Ethyl Ketone	Poor	Xylene	Fair

Precautions:

Please refer to the appropriate material safety data sheet (MSDS) prior to using this product.

For technical assistance, please call 1-800-933-8266

FOR INDUSTRIAL USE ONLY

Warranty:

Devcon will replace any material found to be defective. Because the storage, handling and application of this material is beyond our control, we can accept no liability for the results obtained.

Disclaimer:

All information on this data sheet is based on laboratory testing and is not intended for design purposes. ITW Devcon makes no representations or warranties of any kind concerning this data.

**Order
Information:**

10710 1 lb. kit
10720 3 lb.