

Ultralane[®] 780 A/C

Highly Flexible, Room temperature curing, Urethane Adhesive, Coating, & Encapsulant

Typical Properties

(Not for specification purposes. All tests run at 25°C unless otherwise noted)

Resin / Ultralane 780A Properties:

Appearance	Visual	Amber Liquid
Specific Gravity	ASTM-D-1475	1.20 g/cm ³
Viscosity	ASTM-D-2393	50 cP
Solid Content	ASTM D 2584	100%
Flash Point, open cup	ASTM-D-92	>93°C (199°F)

Hardener / Ultralane 780B Properties:

Appearance	Visual	Black
Specific Gravity	ASTM-D-1475	0.95 g/cm ³
Viscosity	ASTM-D-2393	6000cp
Flash Point, closed cup	ASTM-D-92	>93°C (199°F)
Solid Content	ASTM D-2584	100%

Mix Ratio:

Parts by weight (Parts by volume) 20A : 100B pbw (15.8A : 100B pbv)

Mixed Properties:

Pot life (100 g. mass)	FTM-203	90 minutes
Viscosity	ASTM-D-2393	5,000 cP

Recommended Cure Schedules:

24 - 48 hrs @ 25°C or 6 - 8 hr @ 95°C

Please note: any cure schedule selected for use should be confirmed through testing as being appropriate for your particular processing methods and for your intended application.

Appearance	Visual	Translucent Amber Solid
Shore Hardness	ASTM D-2240	45 - 60A
Tensile Strength at break	ASTM D-638	400 psi
Tensile Elongation	ASTM D-638	250%
Elastic Modulus @ 25 °C		300 psi
Glass Transition Temp. (Tg)	Perkin Elmer Appl. Cast #20	<-69°C
Fungus Resistance	MIL-I-46058C	Non- Nutrient
Thermal Conductivity	ASTM D-257	3.9 x 10 ⁻⁴ cal/cm-sec-°C
Coefficient of thermal expansion, mm/mm/°C	ASTM E-381	
Alpha 1/Alpha 2		76 ppm / 170 ppm
Suggested Maximum Continuous Use Temperature	ASTM D-2214	155°C
Volume resistivity @ 25°C/ @ 95°C	ASTM D- 257	9.3 x 10 ¹⁵ Ω-cm 2.0 x 10 ¹³ Ω-cm
Dielectric strength	ASTM D- 149	350 V/mil
Dielectric constant, 60 Hz / 1 MHz	ASTM D- 150	3.33 / 2.9
Dissipation factor, 60 Hz / 1 MHz	ASTM D- 150	0.027 / 0.025
Arc Resistance	ASTM-D-495	75 sec.
Insulation Resistance	MIL- I 46058C	1.0 x 10 ¹⁵
Moisture Absorption (%weight gain)	ASTM D- 570	
24hrs immersion @ 25C		0.06%
7 days immersion @ 25C		0.11%
Outgassing @ 10⁻⁶ Torr & 125°C		
Total mass loss	ASTM E 595	0.41%
Collectible volatile condensable materials	ASTM E-595	0.03%

*Also available in custom colors upon request.

Ultralane[®] 780A/C is high performance room temperature curing urethane system specifically designed to provide excellent electrical insulation to electrical/electronic parts and for flexible adhesive bonding of many different materials. Ultralane[®] 780 A/CB is extremely low outgassing for long term performance in space, optical, and high vacuum environments.

This system is excellent for bonding and encapsulating component. The cured polymer's exceptional flexibility and low modulus provides excellent resistance to fracturing under impact or during thermal cycling. In addition, the Ultralane[®] 780A/C bonds well to itself to allow for repair and rework operations and performs exceptional well in cryogenic environments. The cured polymer is resistant to many chemicals and environmental conditions such as high humidity and water immersion.

Suggested Applications:

- Potting & impregnation of low voltage electronic devices, such as coils, potentiometers, modules, and hydrophones
- Encapsulation of stress-sensitive and cryogenic components including proximity sensors
- Space and high vacuum applications where its very low outgassing properties make it suitable for extended use

Benefits:

- 100% solids - no solvents
- Repairable
- Highly flexible with excellent revision resistance under heat and high humidity
- Multiple cure schedules possible

Storage Guidelines:

Store these materials in a clean, dry environment in their tightly closed original containers. These products are not considered temperature sensitive, and are designed to resist crystallization, but should ideally be stored at temperatures between 18-35°C (64-95°F). Under these conditions the products will have a minimum shelf-life of 12 months from the date of shipment.

Processing Guidelines:

System Preparation

Exposure of Part A to low temperatures or prolonged periods may cause crystallization. Part A must be reliquified by heating to 70°C (158°F) for 2-4 hours.

Heat Part A until clear amber solution is achieved. After heating, slowly allow material to cool to 25–40°C in a controlled environment; do not force cool. Do not shake or otherwise disturb crystals.

Use entire bottle of the 780A, if possible so that the remaining material will not be contaminated with moisture. If this is not possible, any remaining material must be well blanketed with dry nitrogen or another dry inert gas and the cap tightened securely. To prevent the cap from becoming bonded in place wipe the bottle lip and the interior of the bottle cap clean prior to resealing.

Mixing

This system can be mixed manually or using dynamic or static mixing systems. Whatever method is chosen, be sure to accurately weigh both the resin and the hardener prior to mixing them and ensure the correct mix ratio is used.

Container should be plastic, glass, or metal. Paper and wooden containers or utensils are not recommended unless dryness can be ensured. .

Weigh Part C into container first. Add Part A to container. Examine Part A prior to use to ensure it is not crystallized or cloudy if either condition exists, heat as described above to eliminate crystallization.

Slow machine mixing or hand stirring will minimize air entrapment. Thorough mixing of Parts A and C is essential for optimum end properties. To ensure a void free casting, vacuum de-air the mixture after thorough mixing. A vacuum of 28 inches of mercury is generally sufficient to remove the vast majority of entrapped air within 5-10 minutes.

Handling Precautions:

Use Safety glasses and impervious gloves when handling. If processing large quantities ensure adequate ventilation.

For information on waste disposal and hazardous products of decomposition in the event of fire, refer to the Material Safety Data Sheets (MSDS) for these particular products.

Ultralane® 780A

Warning! Contains organic isocyanate. Causes severe eye and skin irritation and possible eye burns. Vapor or mist harmful if inhaled. Harmful if swallowed. May cause allergic respiratory and skin reaction.

Ultralane® 780C

Caution! May cause eye irritation. Prolonged or repeated skin contact may cause irritation and may cause allergic skin reaction. Harmful if inhaled. Harmful if swallowed.

First Aid

In case of contact:

Skin - Wash skin thoroughly with mild soap and water. Remove contaminated clothing and wash before reuse. Discard contaminated shoes and other articles made of leather

Eyes - Flush eyes with plenty of water for 15 minutes and get prompt medical attention.

Inhalation - Remove person to fresh air

Ingestion - Do not induce vomiting. Dilute with plenty of water and contact physician immediately. Never give anything by mouth to an unconscious person

Disclaimer:

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