# Product Datasheet

# Ultralane® 760-1A/761-1B

## SHORE 78A POLYURETHANE ENCAPSULANT & SEALANT

Ultralane® 760-1A/761-1B is a black, low viscosity, two-part polyurethane system designed to protect sensitive electronic components. This system is excellent for the encapsulation of electronic systems and modules and for the bonding and sealing of electronic devices against moisture and other contaminants. The Ultralane® 760-1A/761-1B system is fast setting for high productivity and provides excellent thermal cycling performance and long-term reliability. This formulation has a long history in automotive anti-lock brake module sealing and in sealing many other types of devices used in harsh conditions.

**FEATURES:**

- Rapid gel time, even in small masses
- Excellent thermal cycling resistance from -55ºC to 125ºC
- Excellent adhesion to most substrates including many plastics and most metals
- Proven long-term performance in Automotive Applications

| HANDLING PROPERTIES | VALUE | TEST METHOD |
|---|---|---|
| Ultralane 760-1A (resin) | | |
| Visual Appearance | Clear Yellow liquid | |
| Density, Part A | 1.2 g/cm³ | ASTM E-201 |
| Viscosity, Part A, at 25ºC | 40 cps | ASTM D-2393 |
| Flash Point | >110°C | ASTM D-92 |
| Ultralane 761-1B (hardener) | | |
| Visual Appearance | Black Liquid | |
| Density, | 1.06 g/cm³ | ASTM E-201 |
| Viscosity, Part B, at 25ºC | 3,125 cps | ASTM D-2393 |
| Flash Point | >93°C | ASTM D-92 |
| Mixed Viscosity at 25ºC | 2800 cps | ASTM D-2393 |
| Mix Ratio by weight: | 25A : 100B by weight | |
| Mix Ratio by volume: | 22A : 100B by volume | |
| Pot life, 4oz / 150 gram mass | 8 minutes | |
| Demolding time: | 8-12 hours at room temperature or allow to gel then cure for 2 hours at 150ºF or 1 hour at 80ºC. Allow to cool prior to demolding. | |
| Cure Schedules: | 24 - 48 hours at 25ºC (Full properties may take up to 7 days at room temperature) **or** 2 hours at 80ºC. | |

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| CURED PROPERTIES | ROOM TEMP. CURE | TEST METHOD |
|---|---|---|
| Density | 1.08 g/cm$^3$ | ASTM D-792 |
| Hardness, Shore A | 78A | ASTM D-2240 |
| Ultimate Tensile Strength | 1,380 psi | ASTM D-638 |
| Tensile Elongation | 160% | ASTM D-638 |
| Volume shrinkage during cure | 1.21% | ASTM D-792 |
| Coefficient of Thermal Expansion | | ASTM E-381 |
| < -5°C | 54 ppm / °C | |
| (-5°C to 125°C) | 200 ppm / °C | |
| Water Absorption by weight | | ASTM D-570 |
| 24 hrs at 25°C | 2.1% | |
| Thermal conductivity | 0.22 W/mK | ASTM D-2214 |
| Surface Resistivity | 6.1 x $10^{13}$ ohm | ASTM D-257 |
| Volume Resistivity | 7.0 x $10^{12}$ ohm-cm | ASTM D-257 |
| Dielectric Strength | 520 volts/mil | ASTM D-149 |
| Dielectric Constant & Dissipitation Factor | | ASTM D-150 |
| 60 Hz | DC: 4.20 / DF: 0.020 | |
| 1 MHz | DC: 4.60 / DF: 0.073 | |

Thermal Aging Data:

| Time at 115C | Shore A hardness | Weight Change |
|---|---|---|
| Initial | 78A | 0% |
| 2 weeks | 75A | -0.30% |
| 4 weeks | 73A | -0.50% |
| 6 weeks | 72A | -0.70% |
| 8 weeks | 73A | -1.28% |

Fluid Resistance Data: (cure samples immersed for 4 hours in the indicated fluids which were maintain at 100°C)

| Fluid | Weight Change | Volume Change |
|---|---|---|
| Power Steering Fluid | 2.1% | 0.6% |
| Motor Oil | 3.6% | 1.1% |
| Transmission Fluid | 4.6% | 1.2% |
| Coolant | 5.7% | 1.5% |

Properties listed are typical – not for specification purposes.

**PROCESSING AND APPLICATION INSTRUCTIONS :**

The Ultralane 760-1A is likely to crystallize if exposed to temperatures below about 15°C / 59°F. If grainy, cloudy or crystallized, heat the 760-1A to 60°C – 7°0C for 4 – 8 hours to re-liquefy. Allow to cool to room temperature prior to use. After heating the 760-1A should be a clear yellow liquid. If it is not, heat again. If repeated heating cycles do not return the material to a useable state contact SP&S for assistance immediately.

To use, weigh Part A and Part B into a clean mixing container. Mixing containers should preferably be made of polypropylene, polyethylene, glass, or non-corroding metal. (Stainless steel, aluminum, etc.). Always use weighing equipment having accuracy that is ±1% or less of the smallest quantity that you will be weighing. Blend Parts A & B thoroughly using a spatula or stirring stick for at least 2 minutes using a kneading motion. Scrape the bottom and sides of the mixing container carefully and frequently to produce a uniform mixture.

## PACKAGING AVAILABLE:

This product is available in quarts and 5-gallon pails. Other package sizes available by request.

## STORAGE GUIDELINES:

Store these materials in a clean, cool and dry environment in their tightly closed original containers. Protect from exposure to temperatures below 15ºC (59ºF). Crystallization may occur if the material is exposed to cold for extend periods. If this occurs, heat the entire container for 4-8 hours at 60ºC - 70ºC to re-liquefy the material. Allow to cool to ambient temperature prior to using. Also protect the Ultralane 760-1A & 761-1B from exposure to moisture or high humidity. Tightly re-seal containers after use. If the recommended storage conditions are observed the products will have a minimum shelf-life of 6 months from the date of shipment.

## HANDLING PRECAUTIONS & PERSONAL HYGENIE

Mandatory and recommended industrial hygiene procedures should be followed whenever these products are being handled and processed. For additional information please consult the corresponding material safety data sheets.

### Ultralane 760-1A

**WARNING!** Can cause skin irritation, eye irritation, allergic respiratory reaction, and allergic skin reaction. Can be Harmful if inhaled. May cause eye & skin irritation. Avoid contact with eyes, skin, or clothing. Wear eye protection and impervious gloves when handling. Wash thoroughly after handling. Avoid breathing vapor or mist. Keep containers closed when not in use. Use only with adequate ventilation. Do not take internally.

### Ultralane 761-1B

**CAUTION!** In accord with good industrial practice, handle with due care. Avoid contact with eyes, skin, or clothing. Wear eye protection and impervious gloves when handling. Wash thoroughly after handling. Avoid breathing vapor or mist. Keep containers closed when not in use. Use only with adequate ventilation.

## FIRST AID

In case of contact:

**Skin** – Immediately wash skin thoroughly with mild soap and water. Remove contaminated clothing and wash before reuse. Destroy contaminated shoes and other articles made of leather.

**Eyes** – Immediately flush eyes with plenty of water for 15 minutes and get prompt medical attention.

**Inhalation** - Remove person to fresh air. Administer oxygen or artificial respiration if necessary. Call a physician.

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

## DISCLAIMER:

**IMPORTANT**: The following supercedes Buyer's documents. **SELLER / MANUFACTURER MAKES NO REPRESENTATION OR WARRANTY, EXPRESS OR IMPLIED, INCLUDING OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE**. No statements herein are to be construed as inducements to infringe any relevant patent. Under no circumstances shall Seller / Manufacturer be liable for incidental, consequential or indirect damages for alleged negligence, breach of warranty, strict liability, tort or contract arising in connection with the product(s). Buyer's sole remedy and Seller's sole liability for any claims shall be Buyer's purchase price. Data and results presented are based on controlled or laboratory work and must be confirmed by Buyer by testing for its intended conditions of use. The product(s) has not been tested for, and is therefore not recommended for, uses for which prolonged contact with mucous membranes, abraded skin, or blood is intended; or for uses for which implantation within the human body is intended

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