



PRODUCT DATA SHEET

UI-5385

REPRODUCING URETHANE MATERIAL, 85 SHORE D

1. PRODUCT

UI-5385 is a two component, polyether based, liquid urethane casting system used for a wide variety of applications. Part-A of this system is an isocyanate and Part-B is a polyol polyether blend. This system does not contain any TDI or Moca. It may be mixed and cured at room temperature.

KEY FEATURES:

- Easy to Mix and Pour
- Picks Up Intricate Detail
- Very High Impact Strength
- Superior Abrasion Resistance
- Contains No Plasticizers
- Very Low Shrinkage
- Quick De-mold Time, Fast Cure
- Excellent Machineability
- High Heat Distortion

SUGGESTED APPLICATIONS:

- Molds and Plaques
- Prototype Parts
- Pattern and Core Boxes
- Jigs and Fixtures
- Tracing Models
- Tooling Aids
- Vacuum Forming Molds
- Tooling Stones
- High Impact, Non Brittle Parts

SHELF LIFE: Shelf life of UI-5385 is one (1) year from shipping, providing it is stored in an cool dry place in unopened containers.

STANDARD COLORS: Tan to Brown

STANDARD PACKAGING:

- Quart Kit
- 1 Gallon Kit
- 5 Gallon Pail Pack
- 55 Gallon Drum Pack

2. GENERAL PROCESSING INFORMATION

PROCESSING TEMPERATURES: The higher the temperatures, the faster the reaction rates. Reaction rates

are influenced by the temperature of the components and mold, the size of the batch being processed, the shape of the cavity being filled and the ambient conditions. It is not recommended to utilize UI-5385 at lower temperatures (under 100°F) unless additional catalysts are added. Contact Preformed Line Products' Technical Service Department for specific guidelines.

SURFACE PREPARATION FOR MOLDS: Porous surfaces, i.e., wood and plaster, in contact with UI-5385 must be well sealed with a urethane compatible sealer. An acrylic sealer is generally used. Allow final sealer coat to dry for 30-45 minutes and apply a suitable release agent.

MOLD RELEASE AGENTS: The user must perform all pertinent tests in order to determine the suitability of those products in the particular application. Silicone type release agents such as UI-9900 can be used where neither adhesion nor paintability of the molded part is required. Non silicone type may be used where paintability of the molded part is required. Frequent mold cleaning may be necessary to prevent mold release agent build up.

ADHESION TO METAL AND WOOD: In order to ensure good polymer adhesion, substrate must be free of rust, oils and other impurities. Substrate may be sanded and degreased with a solvent such as Methyl Ethyl Ketone (MEK). Priming steel and wood with a urethane compatible primer such as UI-7012 will enhance polymer adhesion and application longevity. Other materials being primed may require experimentation in order to ensure optimum polymer adhesion. For further information regarding primers, contact Preformed Line Products' Technical Service Department.

WEIGHT RATIO: Must be maintained within $\pm 2.0\%$. Deviation from the ratio and processing conditions recommended herein will alter the properties of this product.

HAND PROCESSING PROCEDURE: For kit packs, Pour Part B into Part A container. For pail packs, weigh Part B, then weigh Part A into Part B. The two components should be mixed thoroughly by hand, paddle or power mixer for the specified mix time (see Properties section). Caution must be used to generate only a small vortex when mixing to prevent mixing excess air into the

mixture. Scrape the sides and bottom of the mixing container periodically as unmixed material has a tendency to adhere to surfaces of mixing container. Pour the mixed material into the prepared mold or surface and allow to cure. Proper application of a parting agent is required for satisfactory release from mold.

NOTE: Degassing mixtures of UI-5385 before pouring is highly recommended. The addition of a defoamer will greatly reduce the time required to remove entrapped air under vacuum.

MAINTENANCE AND CLEAN UP: Clean up of the automatic mixing equipment can be performed with the use of a non flammable cleaning solvent, such as Methylene Chloride. Methylene Chloride is a hazardous chemical, therefore chemical data, legislative acts, regulatory guidelines and manufacturer's precautions must be read and understood before use. Hand mixing equipment may be cleaned with a cleaning solvent such as Methyl Ethyl Ketone (MEK). MEK is a highly flammable chemical, therefore necessary safety precautions must be exercised.

STORAGE, SAFETY AND HANDLING: Store UI-5385 in a dry cool area. Avoid storage temperatures above 85°F and below 50°F. In case of skin contact, wash immediately with soap and water. Wash contaminated clothing before reuse. In case of eye contact, flush eyes with water and immediately contact physician. Do not reseal isocyanate containers which have become moisture contaminated. Sealing moisture contaminated containers will trap the generated carbon dioxide from the

chemical reaction of the water with the isocyanate. This will create dangerous pressures in the sealed containers, which may rupture explosively.

PRECAUTIONS: Normal handling precautions must be exercised. Use in a well ventilated area and wash hands before eating or smoking. Personnel handling UI-5385 must wear protective gloves, glasses and clothing. Do not burn UI-5385 as it will release toxic vapors. Read Material Safety Data Sheet before using.

TECHNICAL SERVICE: Technical assistance is available by contacting Preformed Line Products' Technical Service Department.

3. WARRANTY

The statements made herein are based on our research and the research of others and are believed to be accurate. No guarantee of their accuracy is made, however. Because of variables beyond the manufacturer's control which may effect results, the manufacturer makes no warranty of any kind, express or implied, including that of merchantability, other than that the product conforms to its applicable current specifications. If breach of warranty is established, the buyer's exclusive remedy shall be repayment of the purchase price, or, at the manufacturer's option, replacement of the non-conforming product. The buyer expressly waives any claim to additional damages, including consequential damages. Warranty claims are void unless made in writing within thirty (30) days after purchase. Warranty runs exclusively to the benefit of the original buyer.

| 4. PHYSICAL PROPERTIES (TYPICAL) | | |
|----------------------------------|---------|------------------|
| PROPERTY | RESULTS | ASTM TEST METHOD |
| Viscosity @ 77°F CPS | | |
| Part A (Isocyanate) | 120 | D-2393 |
| Part B (Polyol) | 9,000 | D-2393 |
| Mixed | 3,500 | D-2393 |
| Mix Ratio (by Wt.) | | |
| Part A | 56 | |
| Part B | 100 | |
| Volume Ratio (by Vol.) | | |
| Part A | 1.0 | |
| Part B | 1.47 | |
| Weight Per Gallon (by Lbs.) | | |
| Part A | 10.3 | |
| Part B | 12.7 | |
| Gel Time, 1 lb. mass @77°F, Sec. | 90 | |

| 5. MIXING AND CURING | |
|---------------------------------|---------|
| Mix Time (Sec.) | 30 |
| Polymer Mix Temperature (°F) | 100-105 |
| Demold Time @ 77°F (Min.) | 1 |
| Peak Exotherm (1 lb. Mass - °F) | 240 |

| 6. CURED PROPERTIES | | |
|----------------------------------|------------------------|------------------|
| PROPERTY | RESULTS | ASTM TEST METHOD |
| Specific Gravity (@ 77°F, Cured) | 1.41 | D-792 |
| Hardness, Shore D | 85 | D-2240 |
| Ultimate Tensile Strength (psi) | 9800 | D-638 |
| Flexural Modulus, Psi | 0.40 X 10 ⁶ | D-790 |
| Heat Distortion Temperature (°F) | 185 | |
| Shrinkage (in/in) | 0.0005 | D-2566 |
| Compressive Strength | 20,000 | D-695 |