



# PRODUCT DATA SHEET

## UI-5854

### BLOCKING COMPOUND

#### LIQUID CASTABLE ELASTOMER 85 SHORE A

#### 1. PRODUCT

UI-5854 is a two component, polyether based, transparent, liquid urethane casting system used for a wide variety of applications. Part-A of the system is an isocyanate and Part-B is a polyol blend. It may be mixed and cured at room temperature and does not contain any TDI or Moca.

#### KEY FEATURES:

- Moisture Insensitive
- Superior Hydrolytic Stability
- Easy Mixing and Handling
- Low Shrinkage
- Excellent Insulation Resistance
- Low Exotherm
- Exceptional Physical Properties
- Fungus Resistant
- Non-Corrosive
- Non Expanding
- Flexible and Tough
- Low Water Absorption

#### SUGGESTED APPLICATIONS:

- Electronic and Electrical Encapsulation
- Abrasion Resistant Bumpers and Parts
- Molds and Mold Facing
- Vibration Mountings
- Metal Forming Pads
- Pattern and Core Boxes
- High Impact, Non Brittle Parts
- Training Aids
- Roller Facings and Castings
- Potting and Encapsulating
- Gaskets and Engine Mounts

**SHELF LIFE:** Shelf life of UI-5854 is one (1) year from shipping, providing it is stored in an cool dry place in unopened containers.

**STANDARD COLOR:** Black

#### STANDARD PACKAGING:

- Quart Kits
- 1 Gallon Packs
- 5 Gallon Packs

#### 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.

**SURFACE PREPARATION FOR MOLDS:** Porous surfaces, i.e., wood and plaster in contact with UI-5854 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. A 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.

**CAST PARTS:** To produce cast parts without bubbles, the mixture of Part A and Part B should be placed under a vacuum prior to pouring into the mold. The addition of UI-9908 up to 0.5% by weight or about 2.5 ml per pound of mixed system will facilitate air release under vacuum. The ratio of UI-9908 may vary depending on individual product requirements and the amount of material being degassed.

**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 a mold.

**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-5854 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 re-use. 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 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-5854 must wear protective gloves, glasses and clothing. Do not burn UI-5854 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. Neither the seller nor the manufacturer has any knowledge or control concerning the purchaser's use of the product. No express warranty is made by the seller or the manufacturer with respect to the results of any use of the product. Neither seller nor manufacturer assumes any liability for personal injury, loss or damage resulting from the use of the product. In the event that the product shall prove defective, 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	RESULT	TEST METHOD
Viscosity @ 77°F CPS		
Part A (Isocyanate)	1950	ASTM D-293
Part B (Polyol)	145	ASTM D-293
Mixed	1700	ASTM D-293
Mix Ratio (by weight)		
Part A	100	PLP LAB
Part B	30	PLP LAB
Volume Ratio (by volume)		
Part A	3.33	PLP LAB
Part B	1.00	PLP LAB
Weight per Gallon (Lbs.)		
Part A	8.5	PLP LAB
Part B	8.5	PLP LAB
Available NCO Content % (Isocyanate Only)	6.8	
Mixing and Curing		
Cure Schedule		
Days @ 75°F	7	—
Days @ 175°F	2	—
Pot Life (1 lb @ 77°F) Min.	12	ASTM D-2471
Gel Time (1 lb @ 77°F) Min.	15	AT&T Spec
Demold Time, (hours @ 75°F)	4	PLP LAB
Cured Properties		
Hardness, Shore A	83 ± 3	ASTM D-2240
Ultimate Tensile Strength, psi	1900	
Tear Strength, (die C) pli	180	ASTM D-624
Elongation %	180	ASTM D-256
Weight Gain (avg. wt. increase after 7 days immersion in water @ 75°F)	0.74%	AT&T Spec
Peak Exotherm (1 lb mass) °F	156	AT&T Spec
Shrinkage (in/in)	0.0015	ASTM D-2566
Volumetric Expansion, %	0	AT&T Spec
Hydrolytic Stability, (± % wt. loss)	-5.18	AT&T Spec
Corrosion of Copper & Aluminum	Non Corrosive	AT&T Spec
Fungi Resistance	No Growth	AT&T Spec
Water Sensitivity, %	0	AT&T Spec
Dry Heat Aging (wt. loss after 21 days @ 225°F) %	-8.1	AT&T Spec
Dry Heat Aging (hardness increase after 22 days @ 225°F) PIS	+6	AT&T Spec
Insulation Resistance - ohms	1.4 X 10 <sup>10</sup>	AT&T Spec