

### CONATHANE® TU-401 SERIES

- Non-MBOCA / Non-TDI / Non-MDA
  - Non-mercury catalyzed
    - Room or elevated temperature curing
      - Excellent abrasion resistance
      - High tensile and tear strength
      - Low viscosity
    - Adequate pot life

CONATHANE® TU-401 SERIES elastomers are two-component, **Non-MBOCA/Non-TDI/Non-MDA**, liquid casting systems that produce elastomers of exceptional toughness, high elongation, high tensile and tear strength, and excellent abrasion resistance. The TU-401 Series has been specifically formulated to resist environmental degradation. The entire series has passed 8,000 hours exposure in a Q.U.V. weatherometer.

The TU-401 Series consists of six flexible elastomer systems ranging in hardness from 70 Shore A to 90 Shore A. The relatively low viscosity and adequate pot life of these systems allow for ease of mixing and makes them pourable into almost any configuration. Curing may be accomplished at room or elevated temperatures. For void-free castings, vacuum degassing is recommended.

**Typical applications** for the TU-401 Series include long-lasting flexible molds, cast-in-place linings for vibratory finishing and metal polishing equipment, vibration, shock and sound dampening pads, industrial wheels, belts and pulleys, casters, and impellers.

See *TYPICAL HANDLING CHARACTERISTICS* and *TYPICAL CURED PROPERTIES* Chart on Page 2

#### ACCESSORY PRODUCTS

##### ▪ RECOMMENDED PRIMERS

CONAP® PR-1167 is a single component primer formulated for use in bonding liquid polyurethane casting systems to substrates such as cured polyurethanes, neoprene rubbers, and cadmium plated metals.

##### ▪ RECOMMENDED RELEASE AGENTS

CONAP® MR-5002 General Purpose Mold Release, CONAP® MR-5012 Non-flammable mold release.

CONAP® MR-5002 and MR-5012 are used to release epoxy, polyurethane, polyester, and most other plastic resins from metal, plastic, or other non-porous molds.

#### RECOMMENDED BATCH-CASTING PROCEDURE

1. Maintain mixing ratio accuracy between TU-401 Part A and the appropriate Part B to within  $\pm 2\%$  using a double-pan or triple-beam balance. Avoid spring-loaded scales.
2. Containers used for weighing or mixing should be metal, glass, or plastic. Mixing rods should also be plastic or glass. Avoid paper containers and wooden sticks!
3. Use a separate container for mixing, with enough space to allow for expansion during degassing (usually 2 to 3 times the volume of material being mixed), if void-free castings are desired. In many applications, the degassing step may be eliminated.
4. Weigh the correct proportions of the two components together, **MIX THOROUGHLY**, and degas at 28-29 inches of mercury to remove entrapped air caused by mixing.
5. When casting, pour in a steady stream in one spot at a rate that avoids overlapping or enfolding air. To improve flowability, preheat parts to be cast to 50-60°C (120-140°F). CAUTION: Work life of material will decrease.
6. Some urethane prepolymers or hardeners may freeze or crystallize below 18°C(65°F). They may be re-liquefied by heating to 50-60°C (120-140°F). Avoid prolonged preheating. After heating, blend thoroughly.
7. If parts are to be demolded, a quality mold release, such as CONAP® MR-5002 or MR-5012 should be applied prior to pouring.
8. Equipment may be cleaned with Methyl Ethyl Ketone.

	CONATHANE® TU-701	CONATHANE® TU-801	CONATHANE® TU-901
<p><b><u>TYPICAL HANDLING CHARACTERISTICS</u></b> (These are typical data and are not meant to serve as specifications.) Contact Cytec Industries Inc. for product specifications.</p> <p><b>NOTE: Resins (Part A) of these systems are always TU-401 PART A</b></p>			
Mix Ratio, by weight, Resin/Hardener (A/B)	100/65	100/51	100/44
Mix Ratio, by volume, Resin/Hardener (A/B)	100/67	100/53	100/45
Initial Mixed Viscosity @ 25°C, cps	2,000	3,500	4,000
Pot Life @ 25°C, Minutes	20-30	20-30	20-30
Recommended Cure, 80°C, hours	16	16	16
Alternate Cure @ 25°C, Days	7-21	7-21	7-21
<p><b><u>TYPICAL CURED PROPERTIES</u></b> (These are typical data and are not meant to serve as specifications.) Contact Cytec Industries Inc. for product specifications.</p>			
Color	Clear, Lt. Amber	Clear, Lt. Amber	Clear, Lt. Amber
Shore A Hardness, ±5 (ASTM D2240)	70	80	90
Tensile Strength, psi (ASTM D412)	3,000	3,500	4,000
100% Modulus, psi	300	500	600
200% Modulus, psi	500	600	875
300% Modulus, psi	650	800	1,000
Ultimate elongation, % (ASTM D412)	750	700	750
Tear Strength (Graves), pli (ASTM D624)	280	360	400
Linear Shrinkage @80°C (Cytec)	1.00%	0.93%	1.00%
@ Room Temperature	Undetectable	Undetectable	Undetectable
Demold Time @80°C (Cytec)	2 hours	6 hours	2 hours
@ Room Temperature	1 day	1 day	1 day
Volume Resistivity (ohm-cm) (ASTM D257)	3.4 x 10 <sup>11</sup>	1.2 x 10 <sup>12</sup>	7.6 x 10 <sup>12</sup>
Surface Resistivity (ohms) (ASTM D257)	9.4 x 10 <sup>12</sup>	6.2 x 10 <sup>13</sup>	3.5 x 10 <sup>14</sup>
Dielectric Constant @ 25°C, 100Hz (ASTM D150)	5.62	5.31	5.27
1 KHz	5.42	5.13	5.12
1 MHz	4.32	4.18	4.25
Dissipation Factor @ 25°C, 100Hz (ASTM D150)	0.086	0.074	0.072
1 KHz	0.030	0.027	0.023
1 MHz	0.083	0.078	0.076
Arc Resistance, sec (MIL-M-24041)	>120	>120	>120
Dielectric Strength (vpm)(ASTM D149)	500	519	579
U.V. Resistance (ASTM G-53) Hours in Weatherometer without visual degradation	8,000	8,000	8,000
Technical Bulletin Number	ES-194	ES-195	ES-196

**RECOMMENDED SAFETY AND HANDLING PROCEDURES**

Wear gloves. Avoid skin contact. If contact occurs, wash thoroughly with soap and water.

Urethane products normally contain trace amounts of free isocyanates that irritate the respiratory tract. Avoid breathing fumes or airborne mist. Adequate ventilation is a must and should be provided at work level to pull fumes away from the operator and vent them to the outside.

Avoid eye contact. If contact occurs flush thoroughly with water.

Do not place urethane products that may be contaminated with materials such as water or hardeners in closed containers. Uncontrolled reactions may create hazardous internal pressures. See individual Product Bulletins and Material Safety Data Sheets for additional information.

**BULLETIN: ES-201(c)**

**Page 2 of 2**

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