



POLY-CURE 1000®

High Performance Urethane Curative

DESCRIPTION

The chemical name for POLY-CURE 1000 is Methylene bis Methyl Anthranilate. The Methyl Anthranilate monomer from which POLY-CURE 1000 is made is present in food plants such as grapes, and Methyl Anthranilate itself has been approved for use in foods and perfume by the FDA. The EPA has also approved the use of Methyl Anthranilate as a bird repellent spray for food crops like corn, and for golf courses, even next to waterways.

Amine hardeners are used to provide urethanes with durability, toughness, high tear strength, elongation, and abrasion resistance to a greater extent than can be obtained with polyol cures. Use of most amines is limited because they are just too fast. Aromatic amines further hindered with halogens give usable pot life, but the halogen containing monomers from which they are made are very toxic, while the hardeners themselves are usually regulated as carcinogens. POLY-CURE 1000 is a halogen free high performance hardener with usable pot life. As a bonus, POLY-CURE 1000 gives urethanes with better abrasion resistance, and better solvent resistance, as well as better water resistance, than urethanes made with the halogen containing amine hardeners.

FEATURES and BENEFITS

- **Made from FDA and EPA approved monomer**
- **Mild pleasant odor**
- **Halogen free hardener with usable pot life**
- **High mechanical properties**
- **Better abrasion resistance**
- **Both better solvent resistance and better water resistance**

PRODUCT SPECIFICATIONS

	POLY-CURE 1000®	ASTM Method
Color	Tan to Yellow	Visual
Form	Granules	Visual
% Volatiles	< 0.20 %	PTM&W
pH	Neutral	PTM&W
Melting Range	260°F - 290°F	PTM&W
Equivalent Weight	154 - 156	PTM&W

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HANDLING and CURING

Formulators can use POLY-CURE 1000 with polyols to upgrade mechanical properties, or POLY-CURE 1000 can be used alone as the sole hardener with urethane prepolymers as follows. The amount of POLY-CURE 1000 required can be calculated with the following formula: (%NCO Prepolymer) x (3.4) = Parts of POLY-CURE 1000 for 100 Parts Prepolymer. This ratio corresponds to 92% of the theoretical amount. Good mechanical properties are usually obtained using ratio's between 85% to 95%. If POLY-CURE 1000 is heated to 275°F and used as a hot liquid, it will gradually darken. If color is important, exposure to air while hot should be avoided. A blanket of dry Nitrogen is effective in keeping the color change to a minimum. Prepolymers should be heated to 160°F to 200°F before mixing with POLY-CURE 1000. Pouring molten POLY-CURE 1000 into cold prepolymers will cause precipitation of POLY-CURE 1000. Cure mixed product at 180°F - 220°F for 2 to 4 hours, and follow with room temperature cure for 2 to 4 days for complete cure. Some prepolymers may require catalysts for faster curing.

TYPICAL MECHANICAL PROPERTIES

	POLY-CURE 1000 [®] with:				ASTM Method
	Adiprene [®] L83	Adiprene [®] L100	Adiprene [®] L167	Adiprene [®] L315	
Cured Hardness, Shore Durometer	80 Shore A	90 Shore A	95 Shore A	75 Shore D	D2240
Tensile Strength, psi	5,400 psi	5,900 psi	6,300 psi	6,400 psi	D638
Elongation at Break, %	525 %	440 %	380 %	250 %	
Tensile Modulus @ 100% Elongation	560 psi	1,100 psi	1,200 psi	2,500 psi	D412
Tensile Modulus @ 300% Elongation	1,200 psi	2,860 psi	3,600 psi	----	
Tear Strength, Die C, pli	430 pli	520 pli	500 pli	785 pli	D624
Compression Set, Method B	25 %	46 %	40 %	66 %	D395
Bashore Rebound	53 %	41 %	42 %	52 %	D2632
Taber Abrasion, H18 Wheel, 3000 grams load, 1000 cycles, mg loss	8 mg.	22 mg.	36 mg.	220 mg.	D1044

Adiprene[®] is a Trade Name of Crompton's Uniroyal Chemical.

PACKAGING

Available in 100 pound Fiber Drums with a sealed plastic inner liner bag.

STORAGE

To avoid moisture contamination, do not open until ready to use. After use, reseal plastic liner and close fiber drum.

CAUTION

Contains aromatic amines. Do not get in eyes, on skin or clothing. Avoid dust or vapor. Do not use until Material Safety Data Sheet has been read and understood.

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