

**Advanced Materials****RenPim<sup>®</sup> 6452 Resin / Hardener System**

PARTS IN MINUTES<sup>®</sup> POLYURETHANE  
HIGH IMPACT / RAPID DEMOLD POLYURETHANE PROTOTYPE SYSTEM  
FOR MACHINE DISPENSING

**DESCRIPTION :**

RenPim<sup>®</sup> 6452 polyurethane Resin/Hardener System is formulated to rapidly produce tough, durable prototype parts using automated dispensing equipment. Cured prototypes are thermoplastic-like in appearance and exhibit outstanding compressive and flexural strength, high impact strength and good thermal resistance. This white system permits easy pigmentation of molded parts. Prototypes weighing up to 10 pounds can be cast and demolded in 15 to 30 minutes using meter mix equipment with this fast-cure polyurethane.

**APPLICATIONS :**

Rapid production of tough, impact resistant prototypes and that closely resemble thermoplastic end products. Excellent for pre-production and short production.

**MIXING INSTRUCTIONS :**

Reaction Ratio                      80 Resin to 100 Hardener by weight  
   67 Resin to 100 Hardener by volume

This highly reactive system is best suited for use employing a meter mix dispensing system or suitable cartridges/static mixer system. Your technical sales representative is available to discuss the requirements for dispensing this material.

Simple silicone, polyurethane or epoxy molds can be used for molding the RP 6452 system. Mold design and construction should be for pressure-free casting.

**TYPICAL MIXED PROPERTIES :**

Property	Criteria	ASTM Test Method	Test Value <sup>1</sup>
Gel time (150 g)		D-2471	50 to 70 seconds
Color	Resin	Visual	Clear Lt. Amber
	Hardener		Cream
	Mixed		White to Off White
Viscosity	Resin	D-2393	30 cP
	Hardener		1600 cP
Demold Time			15 to 30 minutes

<sup>1</sup>Tested @ 77 °F (25 °C)

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**TYPICAL CURED PROPERTIES :**

<b>Property</b>	<b>ASTM Test Method</b>	<b>Test Values<sup>1</sup></b>	<b>Test Values<sup>2</sup></b>
Density (g/cc)	D-792	1.15	1.15
Izod Impact (ft <sup>3</sup> lb/in.)	D-256	.84	.98
Hardness (Shore D)	D-2240	79	79
Ultimate Compressive Strength (psi)	D-695	18,000	14,500
Compressive Modulus (psi)	D-695	193,000	186,000
Ultimate Flexural Strength (psi)	D-790	> 8,500 <sup>3</sup>	> 8,400 <sup>3</sup>
Flexural Modulus (psi)	D-790	198,000	192,000
Ultimate Tensile Strength (psi)	D-638	4,300	3,800
Tensile Modulus (psi)	D-638	188,000	189,000
% Elongation	D-638	3.4	2.7
Tg per DMA °F (°C)	D-4065	261 (127)	261 (127)
Deflection Temperature °F (°C)	D-648		
66 psi		206 (96)	211 (99)
264 psi		179 (81)	194 (90)
Coefficient of Thermal Expansion (in/in/°F) -30 to +30 °C	D-3386	7.06 x 10 <sup>-5</sup>	6.72 x 10 <sup>-5</sup>

**Note Typical Properties :** These physical properties are reported as typical test values obtained by our test laboratory. If assistance is needed in establishing product specifications, please consult with our Quality Control Department.

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**CURING INSTRUCTIONS :**

Parts can be cured unsupported at room temperature. This system requires a post-cure for development of maximum physical properties. After demolding at room temperature, the parts should be post-cured and supported for 14 hours at 176 °F (80 °C).

<sup>1</sup> Cure Schedule – 7 days @ RT

<sup>2</sup> Cure Schedule – 24 hours @ RT. Plus 14 hours @ 176 °F (80 °C)

<sup>3</sup> Samples did not break

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**HANDLING :****RP 6452 Resin and Hardener**

This product is moisture-sensitive and packaged under a blanket of dry nitrogen. Maintain factory seal, after use re-blanket with dry nitrogen and tightly reseal.

Work in a well ventilated area and use clean, dry tools for mixing and applying. For two component system, combine the resin and hardener according to mix ration. Mix together thoroughly and use immediately after mixing. Material temperature should not be below 65 °F (18 °C) when mixing.

**RP 6452 Resin**

This product may crystallize upon storage. If crystallized, vent container and heat to 125 – 145 °F until crystals dissolve. Stir well after product has liquefied.

**RP 6452 Hardener**

Stir well before use. This material will separate.

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**PACKAGING :**

This product is available in the following package size(s) :

A Packages	= Resin	6.4# with appropriate hardener	8#	Total 14.4#
Pail Units	= Pail resin	32# with appropriate hardener	40#	Total 72#
Drum Units	= Pail Resin	360# with appropriate hardener	450#	Total 810#

Please call Customer Service (800) 376 8793 for price and availability.

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**STORAGE :**

RenPim<sup>®</sup> 6452 polyurethane Resin/Hardener System should be stored in a dry place, in the sealed original container, at temperatures between +2°C and +40°C (+35.6°F and 104°F). Under these storage conditions, the shelf life is 1 year. The product should not be exposed to direct sunlight.

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**PRECAUTIONARY STATEMENT :**

Huntsman Advanced Materials Americas LLC maintains up-to-date Material Safety Data Sheets (MSDS) on all of its products. These sheets contain pertinent information that you may need to protect your employees and customers against any known health or safety hazards associated with our products. Users should review the latest MSDS to determine possible health hazards and appropriate precautions to implement prior to using this material.

**First Aid!**

Refer to MSDS as mentioned above.

**KEEP OUT OF REACH OF CHILDREN****FOR PROFESSIONAL**

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