

Advanced Materials**RenCast[®] 6419****HEAT RESISTANT 85D POLYURETHANE**

DESCRIPTION :

RenCast[®] 6419 is a low viscosity, off-white polyurethane casting system. The system can be easily pigmented or dyed.

The system passes UL94V-O at a thickness of 0.125 inch. RP 6419 has a deflection temperature of 174 °F when heat cured by the recommended procedure.

The system is formulated without MOCA⁽¹⁾, TDI⁽²⁾, MDA⁽³⁾ or a mercury catalyst.

APPLICATIONS :

RenCast[®] 6419 is an ideal prototyping candidate for simulating hard injection molded or thermoformed thermoplastics or hard RIM production polyurethane.

RenCast[®] 6419 is also useful for limited production series parts for end-use applications.

MIXING INTRUSCTIONS :

Reaction Ratio 100R to 80H by weight
 100R to 85H by volume

Mixing: Stir each component thoroughly before use. Weigh each component accurately (\pm 5%) into clean containers. Thoroughly mix resin and hardener together (minimum 3 minutes) scraping container sidewalls, bottom and mixing stick several times to assure a uniform mix. Vacuum deairing is recommended where void free parts are required.

RenCast[®] 6419 contains special fillers which impart flammability characteristics and moisture scavenging ability to the formulation. The materials must be resuspended before use. Failure to do so may cause foaming in the cured part and will cause the material to fail flammability requirements.

⁽¹⁾MOCA – 4,4' methylene bis (2-chloroaniline)

⁽²⁾TDI – toluene diisocyanate

⁽³⁾MDA – 4,4' – methylene dianiline

TYPICAL PROPERTIES :

Property	ASTM Test Method	Test Values
Resin Color	Visual	Amber
Hardener Color	Visual	Cloudy, Off-White
Mixed Color	Visual	Translucent, Off-White
Mixed Viscosity, cP	D-2393	250
Get Time, minutes	D-2471	15

TYPICAL PHYSICAL PROPERTIES :

Property	ASTM Test Method	Test Values
Cured Density, g/cc	D-792	1.27
Hardness, Shore D	D-2240	85 ± 3
Ultimate Compressive Strength, psi	D-695	21,700
Ultimate Flexural Strength, psi	D-790, Procedure A	16,300
Flexural Modulus, psi	D-790, Procedure A	439,000
Ultimate Tensile Strength, psi	D-638 @ 0.2"/min, Type 1	10,300
Tensile Modulus, psi	D-638 @ 0.2"/min, Type 1	459,000
Ultimate Elongation, %	D-638 @ 0.2"/min, Type 1	3.5
Tg per DMA, °F (°C)	D-3418	207 (97)
Coefficient of Thermal Expansion per TMA (-30 °C to 30 °C)		
	In/in °F	3.8 x 10 ⁻⁵
	In/in °C	6.8 x 10 ⁻⁵
Shrinkage, in/in	D-3566, Mold #0, 0.5" Deep	0.001
Izod Impact, ft-lbs/in	D-256	0.54
Deflection Temperature, °F (°C)	D-648, 264 psi	163 (73)
	D-648, 66 psi	174 (79)
Flame Test	UL94V-O, specimen size: 5" x 0.5" x 0.125"	Passes, self-extinguishing

Tested at 77 °F (25 °C)

Cure Schedule – 24 hours @ 77 °F/25°C + 16 hours @ 176°F/80°C.

NOTE : The cast part must be post-cured in either the original mold or in a supported fixture.

NOTE ON 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.

CURING INSTRUCTIONS :

RenCast® 6419 polyurethane system must be post-cured to achieve good results. If the original mold is not suitable for the elevated post cure operation, the casting must be cured a minimum of 24 hours at 75 °F ± 5 °F before demolding.

The casting must be post-cured 16 hours at 176 °F on a support which will not deform during this heat cycle.

PACKAGING :

Unit		Size
Working Kits		15 pounds
5 Gallon	Resin	45 pounds
	Hardener	36 pounds
Drum	Resin	500 pounds
	Hardener	400 pounds

HANDLING :

Stir well before use. This material will separate.

Work in a well ventilated area and use clean, dry tools for mixing and applying. 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.

If heating of product in plastic packaging is necessary, heat in a ventilated oven to 145 °F maximum. Before heating, loosen the container lid slightly to relieve any pressure buildup and place container to be heated into a metal bucket of sufficient volume to contain the product, should the container tip over or leak.

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.

Nuisance dust may be generated when sanding or sawing cured material.

STORAGE :

RenCast® 6419 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.

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 AND INDUSTRIAL USE ONLY**

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Main Offices :

Huntsman Corporation
10003 Woodloch Forest Dr.
The Woodlands
Texas 77380
(281) 719-6000

**Huntsman Advanced Technology
Center**

8600 Gosling Rd.
The Woodlands
Texas 77381
(281) 719-7400

Website :

www.huntsman.com/advanced_materials