

Advanced Materials**RenPaste® 4569 RESIN
Ren® 4569 HARDENER****EPOXY SEAMLESS MODELING AND TOOLING PASTE**

DESCRIPTION :

RenPaste® 4569 resin and Ren® 4569 hardener epoxy system is a heat-resistant seamless modeling and tooling paste that is machine applied. The material is a cost-effective way to produce highly accurate, precision models, molds and fixtures for applications up to 176°F (80°C).

RenPaste® 4569 epoxy resin and Ren® 4569 hardener are designed to be proportioned, mixed and dispensed with equipment build specifically for using the epoxy seamless modeling paste. The applicator nozzle extrudes paste directly onto an undersized form, including horizontal, vertical and slightly overhanging contours. After curing, the product provides a seamless surface for CNC machining of the final tool contours.

APPLICATIONS :

Automotive jigs and quality control fixtures
Prepreg curing molds
Aircraft models

ADVANTAGES :

1.2-inch (30mm) thickness layer in one application
Can be used at temperatures up to 176°F (80°C)
Good edge strength and definition
Room-temperature curing; machinable after 2 days
Option of postcure to develop full mechanical and thermal properties
Easy-to-machine formulation, producing a fine, void-free, seamless surface
Compatible with epoxy prepregs

MIX RATIO	4569R/4569H	By Weight	100:100	Resin to Hardener
	4569R/4569H	By Volume	100:100	Resin to Hardener

TYPICAL HANDLING PROPERTIES Tested @ 77°F(25°C)

<u>Property</u>	<u>Criteria</u>	<u>Test Method</u>	<u>Test Value</u>
Color	Resin	Visual	Dark Gray
	Hardener		White
	Cured		Dark Gray
Specific Gravity	Resin	ASTM D-1963	1.5—1.7
	Hardener		1.5—1.7
Gel Time, minutes at 77°F (25°C)	1.2 in. (30mm)	ASTM D-2471	240--320

NOTE : These physical properties are reported as typical test values obtained by the Huntsman Advanced Materials laboratories. If assistance is needed in establishing product specifications, please consult with the Huntsman Advanced Materials Quality Control Department.

PROCESSING : Before beginning, ensure that the undersized form is strong, stable, clean and free of loose material. Apply paste as a single layer up to 1.2 in. (30mm) in thickness using suitable meter/mix equipment.

RECOMMENDED CURE SCHEDULE

	<u>Temperature</u>	<u>Time</u>
Minimum properties	77°F (25°C)	72 hours
Full properties	77°F (25°C) PLUS	24—48 hours
	176°F (80°C)*	8 hours

* Maximum temperature rise of 1°F per minute

TYPICAL CURED PROPERTIES :

Tested @ 77°F(25°C) unless otherwise noted.

Not for specification purposes.

<u>Property</u>	<u>Test Method</u>	<u>Test Values¹</u>	<u>Test Values²</u>
Density, lb./ft. ³ (g.cm ³)	ASTM D-792	100 (1.6)	100 (1.6)
Cubin Inch per Lb.		17.3	17.3
Hardness, Shore D	ASTM D-2240	79—80	83—84
Flexural Strength, psi (MPa)	ASTM D-790	5,650 (39)	8,550 (59)
Tg by TMA, °F (°C)	ASTM D-4065	108 (42)	183 (84)
Ultimate Compressive Strength, psi (MPa)	ASTM D-695	8,200 (56.6)	13,300 (92)
Coefficient of Thermal Expansion, in./in./°F	TMA	30x10 ⁻⁶	25x10 ⁻⁶

¹ Cured for 72 hours at 77°F (25°C)

² Cured for 72 hours at 77°F (25°C) plus 8 hours at 176°F (80°C)

STORAGE/ SHELF LIFE :

Epoxy resins and hardeners should be stored in a dry place in their original, sealed containers at temperatures from 60-100°F (16-38°C). Material temperatures should be above 65°F (18°C) when mixing. After use, tightly reseal containers. Under these conditions, epoxy resins and hardeners will remain useable for 12 months from date of shipping from Huntsman.

CAUTION :

Huntsman Advanced Materials Americas Inc. 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. Copies of the latest MSDS may be requested by calling our customer service group at 800-367-8793 or emailing your request to adhesives_group@huntsman.com.

FIRST AID !

Eyes and skin : Flush eyes with water for 15 minutes. Contact a physician if irritation persists. Wash skin thoroughly with soap and water. Remove and wash contaminated clothing before reuse.

Inhalation : Remove subject to fresh air.

Swallowing : Dilute by giving water to drink and contact a physician promptly. Never give anything to drink to an unconscious person.

KEEP OUT OF REACH OF CHILDREN**FOR PROFESSIONAL AND INDUSTRIAL USE ONLY**

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