

Advanced Materials

RenCast® 3209-1 / Ren® 3209-1/Ren 3209-2



MASS EPOXY SYSTEM
EPOXY IRON OXIDE FILLED THIN SECTION CASTING

DESCRIPTION :

RenCast® 3209-1 (Resin) / Ren® 3209-1 (Hardener) is a general purpose, black, filled epoxy resin suitable for rigid casting up to two inches thick when cast in non-conducting molds. It can be cast up to six inches thick against metal. RenCast® 3209-1 systems cure at room temperature and offer long gel times and good resistance to high humidity conditions. Useful for mass casting at temperature to 159 °F.

APPLICATIONS :

- Foundry patterns
- Hammerforms
- Core Boxes
- Stripped pads
- Holding fixtures
- Drop hammer dies
- Stretch press dies

MIX RATIO :

Reaction Ratio:	RenCast® 3209-1/ Ren® 3209-1	100R to 10H by wt. 100R to 25H by vol.
	RenCast® 3209-1/Ren® 3209-2	100R to 11H by wt. 100R to 28H by vol.

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.

TYPICAL MIXED PROPERTIES :

Property	ASTM Test Method	Test Values ⁽¹⁾	
		W/Ren® 3209-1 H	W/Ren® 3209-2H
Gel Time, 14 fl. oz.	D-2471	90 min.	240 min.
Color	Visual	Black	Black
Viscosity (mixed)	D-2393	15,000 cP	15,000 cP

⁽¹⁾ Tested @ 77°F (25°C)

TYPICAL CURED PROPERTIES :

Property	ASTM Test Method	Ren [®] 3209-1 Hardener	Ren [®] 3209-2 Hardener
Specific Gravity	D-792	2.04	2.15
Cubic inch per lb.	D-792	13.5	12.9
Hardness (Shore D)	D-2240	75	85
Ultimate Compressive Strength psi (Mpa)	D-695	16,500 (113.8)	11,500 (79.3)
Ultimate Flexural Strength (psi)	D-790	8,400 (57.9)	8,000 (55.2)
Flexural Modulus (psi)	D-790	1.0 x 10 ⁶ (6897)	--
Ultimate Tensile Strength (psi)	D-638	5,500 (37.9)	5,000 (34.5)
Deflection Temperature (264 psi) °F (°C)	D-648	165 (74)	120 (49)
Coefficient of Thermal Expansion in/in/°F (m/m-°C)	D-3386	2.60 x 10 ⁻⁵ (4.68 x 10 ⁻⁵)	3.20 x 10 ⁻⁵ (5.76 x 10 ⁻⁵)
Shrinkage (in/in) Cast	D-2566	Mold #1	--
Mold #2		0.005	0.003
Mold #3		--	0.006

(1) Cure Schedule – 7 days @ 77 °F (25 °C), tested @ 77 °F

(2)

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

CURING INSTRUCTIONS :

Although room temperature epoxies will normally set up to a rigid, demoldable state within 24 hours at room temperature (75 °F, 24°C ± 5%), these systems reach their full cure after seven days at room temperature. A full cure can be accelerated by applying heat after the part has set rigid. We recommend a post cure of 150 °F (66°C) for a minimum of six hours. (Add to this adequate time to bring the part to the post cure temperature.) After cure, the part should be cooled at a slow rate so as not to shock the part thermally.

Uniform heat distribution is also required during post cure ; concentrated heat, such as that directed from a lamp, can cause warp. An elevated temperature cure will slightly increase the shrinkage compared to a room temperature cure.

STORAGE/HANDLING INFORMATION :**RenCast[®] 3209-1 / Ren[®] 3209-1/Ren[®] 3209-2**

Store at 2 – 40°C (35 - 104°F) in a dry place. After use 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.

RenCast[®] 3209-1

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.

Distributed by
Freeman Manufacturing & Supply Co.
www.freemansupply.com (800) 321-8511



Stir well before use. This material will separate.

SHELF LIFE :

Provided materials are stored under the recommended storage conditions in their original containers, they will remain in useable condition for at least two years from date of manufacture.

PACKAGING :

Please call Customer Service (888-564-9318) for price and availability.

SAFETY/HANDLING PRECAUTIONS :

Do not use this product until the MSDSs have been read and understood. To protect against any potential health risks presented by our products, the use of proper personal protective equipment (PPE) is recommended. Eye and skin protection is normally advised. Respiratory protection may be needed if mechanical ventilation is not available or is insufficient to remove vapors. For detailed PPE recommendations and exposure control options consult the product MSDS or a Huntsman EHS representative.

PRECAUTION NOTE :

Thermosetting systems generate heat when curing. The amount of heat and the period of time in which heat is released vary significantly between systems. Additionally, ambient or compound temperature, amount of material mixed, and construction and shape of the mold or container can also be factors in the temperature profile of a mixed system. In some cases, the thermosetting reaction can be vigorous, generation heat sufficient to cause decomposition of the system with subsequent liberation of large volumes of acrid smoke.

A good rule of thumb is never mix more material than can be applied during the stated pot life or gel time. Also take care when using materials in applications other than stated on the product Data Sheet, i.e., a laminating resin for casting.

Caution To protect against any potential health risks presented by our products, the use of proper personal protective equipment (PPE) is recommended. Eye and skin protection is normally advised. Respiratory protection may be needed if mechanical ventilation is not available or is insufficient to remove vapors. For detailed PPE recommendations and exposure control options consult the product MSDS or a Huntsman EHS representative.

IMPORTANT LEGAL NOTICE

Huntsman Advanced Materials warrants only that its products meet the specifications agreed with the user. Typical properties, where stated, are to be considered as representative of current production and should not be treated as specifications.

The manufacture of materials is the subject of granted patents and patent applications; freedom to operate patented processes is not implied by this publication.

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