

Renlam[®] M – 1

Renlam [®] M - 1	Resin	100	pbw
Hardener [®] HY 956	Hardener	20	pbw
Hardener [®] HY 2404	Hardener	20	pbw

Renlam M-1 has been formulated to provide flexibility in processing parameters when used with any of the above Hardeners.

Application

Offers the superior cured characteristics and performance required to satisfy most laminating and back-up casting applications in the tooling industry.

Processing methods

Manual mixing

Key Properties

Good wetting properties
 Room temperature curing
 Minimal shrinkage when used with glass cloth
 Very good dimensional stability
 Very good mechanical stability

Product Data (Guideline Values)

Renlam® M - 1

Laminating Resin System

Colour	Light Yellow liquid		
Flash Point	Method: estimated	°C	>200
Density	g/cm ³	At 25°C	1.1
Viscosity	mPa.s	At 25°C	1,275 – 1,625

Hardener HY 956

Hardener

Colour	Clear liquid		
Flash Point	Method: DIN 51758	°C	152
Density	g/cm ³	At 25°C	1 - 1.05
Viscosity	mPa.s	At 25°C	370 - 470

Hardener HY 2404

Hardener

Colour	Clear yellow liquid		
Flash Point	Method: DIN 51758	°C	110
Density	g/cm ³	At 20°C	1.05 - 1.08
Viscosity	mPa.s	At 25°C	3,400 – 5,000

Processing Data (Guideline Values)

Properties			Renlam M – 1 Hardener HY 956	Renlam M – 1 Hardener HY 2404
Mix Ratio			100:20 pbw	100:20 pbw
Appearance			clear pale yellow liquid	clear pale yellow liquid
Viscosity	mPa.s	At 25°C	850	1750
Pot Life	500g	At 15°C	62 - 67 min	30 - 35 min
		At 25°C	30 - 35 min	13 - 18 min
		At 35°C	12 - 17 min	5 - 10 min
Demouldable After	hrs	At 25°C	20 - 24	14 - 18
Tack Free Time	hrs	At 25°C	8 - 10	4 - 6

Processing and Storage (Guideline Values)

Preparation

To obtain air-bubble free transparent and impact resistant castings the mix should be degassed under vacuum before use.

Mixing

Brief degassing of the mix under 2 – 10 mbar vacuum improves the mixture homogeneity and enhances the dielectric properties of the castings. Mixing of the components can be done at room temperature, heating of the polyol is not required.

Curing

To determine whether crosslinking has been carried to completion and the final properties are optimal, it is necessary to carry out relevant measurements on the actual object or to measure the glass transition temperature. Different gel and cure cycles in the customer's manufacturing process could lead to a different degree of crosslinking and thus a different glass transition temperature.

Storage Conditions

Store the components in a dry place at RT, in tightly sealed original containers. Under these conditions, the shelf life will correspond to the expiry date stated on the label. After this date, the product may be processed only after reanalysis. Partly emptied containers should be tightly closed immediately after use.

For information on waste disposal and hazardous products of decomposition in the event of a fire, refer to the Material Safety Data Sheets (MSDS) for these particular products

Mechanical and Physical Properties (Guideline Values)

Determined on standard test specimen at 23°C. Cured for 24h/RT + 6h/80°C

Properties		Renlam M – 1 Hardener HY 956	Renlam M – 1 Hardener HY 2404
Mixed Density	g/cm ³	1.11	1.13
Shore D Hardness		84	85
Compressive Strength	(N/mm ²)	50	93
Flexural Strength	(N/mm ²)	67	85
Water Absorption	(%)	14 days at 20°C	0.84
Tg	(°C)	7 days at 25°C	60
Exotherm	(°C)	neat	210
		sand	67
		- slate powder	66
		al. (cap 1000)	56
			217
			113
			83
			87

Industrial hygiene

Mandatory and recommended industrial hygiene procedures should be followed whenever our products are being handled and processed. For additional information please consult the corresponding Safety Data Sheets and the brochure "Hygienic precautions for handling plastics products".

Handling Precautions

Safety precautions at workplace:

protective clothing

Yes.

gloves

Essential.

arm protectors

Recommended when skin contact likely.

goggles/safety glasses

Yes.

respirator/dust mask

Recommended.

Skin protection:

before starting work

Apply barrier cream to exposed skin.

after washing

Apply barrier or nourishing cream.

Cleaning of contaminated skin

Dab off with absorbent paper, wash with warm water and alkali-free soap, then dry with disposable towels. Do not use solvents.

Clean shop requirements

Cover workbenches, etc. with light coloured paper. Use disposable beakers, etc.

Disposal of spillage

Soak up with sawdust or cotton waste and

Ventilation:

deposit in plastic-lined bin.

of workshop

Renew air 3 to 5 times an hour.

of workplace

Exhaust fans. Operatives should avoid inhaling vapors.

First Aid

Contamination of the **eyes** by resin, hardener or casting mix should be treated immediately by flushing with clean, running water for 10 to 15 minutes. A doctor should then be consulted.

Material smeared or splashed on the **skin** should be dabbed off, and the contaminated area then washed and treated with a cleansing cream (see above). A doctor should be consulted in the event of severe irritation or burns. Contaminated clothing should be changed immediately.

For more detailed information please read Huntsman Advanced Material safety data sheets for the individual products

Note

Renlam[®] is a registered trademark of Huntsman Corporation or an affiliate thereof in one or more countries, but not all countries.

Huntsman Corporation
[®]Registered trademark



All recommendations for use of our products, whether given by us in writing, verbally, or to be implied from results of tests carried out by us are based on the current state of our knowledge. Notwithstanding any such recommendations the Buyer shall remain responsible for satisfying himself that the products as supplied by us are suitable for his intended process or purpose. Since we cannot control the application, use or processing of the products, we cannot accept responsibility therefore. The Buyer shall ensure that the intended use of the products will not infringe any third party's intellectual property rights. We warrant that our products are free from defects in accordance with and subject to our general conditions of supply.

HUNTSMAN ADVANCED MATERIALS

Huntsman Advanced Materials(Australia) Pty Limited
ABN 93 091 627 879

Gate 3 Ballarat Road, Deer Park, VIC
Tel: + 61 3 9361 6060
Fax: +61 3 9361 6066
<http://www.huntsman.com>