

RIMCast 836A Polyol

RIMCast 836B Isocyanate

Polyurethane resin for low-pressure casting

Product description :

RIMCast 836 is a two-component polyurethane resin for low-pressure casting into glass-reinforced plastic or silicone molds to produce prototypes or trial parts with thermoplastic-like properties. It offers high strength and good toughness.

Key features :

- Moderate strength and modulus, PP-like properties and good toughness
- Heat resistance: 78°C
- Fast curing and demolding
- Available in two reaction speeds

Physical properties :

Property	Test method	RIMCast836A Polyol	RIMCast836B Isocyanate	After mixing
Mix ratio by weight		100	125	
Appearance	Visual inspection	Liquid	Liquid	Liquid
Color	Visual inspection	Black	Transparent pale yellow	Black
Viscosity at 25°C (mPa.s)	BROOKFIELD LVT	Approx. 1250	Approx. 200	
Density before mixing at 25°C (g/cm3)	ISO 1675:1985	Approx. 1.08	Approx. 1.16	-
Density after curing at 25°C (g/cm3)	ISO 2781:1996	-	-	Approx. 1.12
Working time at 25°C (seconds) (100g mix)		Slower version RIMCast836A-75		Approx. 75 seconds
		Faster version RIMCast836A-60		Approx. 60 seconds
Demolding time Mold temperature (50-70°C)		Slower version RIMCast836A-75		Approx. 30 minutes
		Faster version RIMCast836A-60		Approx. 20 minutes

Mechanical properties

Hardness at 23°C	ISO868:1985	Shore hardness	76D
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Mechanical properties			
Flexural modulus	ISO178:2001	MPa	1500
Flexural strength	ISO178:2001	MPa	65
Tensile strength	ISO527:1993	MPa	50

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Elongation at break	ISO527:1993	%	55
Charpy impact strength	ISO179/2D:1994	kJ/m2	>100

Other properties			
Heat deflection temperature	ISO75-1:2003	°C	78
Linear shrinkage 1)	-	mm/m	Approx. 4

1) The values above are averages measured on standard specimens / Cure conditions: 70°C/16 hours

Low-pressure casting instructions :

(1) Automatic dispensing equipment

Use an automatic two-component dispensing machine with metering, mixing and cleaning functions for components A and B. The materials in contact with the resin can affect its properties. In particular, replace galvanised steel pipework with stainless steel (SUS304) where applicable. (2) Resin temperature: keep both components A and B at approximately 25-30°C during casting. Higher resin temperatures shorten working time; lower temperatures extend it. Excessively high or low temperatures can cause poor mixing and incomplete cure. (3) Mold temperature: preheat silicone molds to 60°C. If the mold temperature is lower, extend the demolding time accordingly. Mold temperature directly affects part accuracy and must be controlled carefully. (4) Metering: the mix ratio is 100:125. Set the metering error within $\pm 5\%$ and adjust the dispensing flow rate. (5) Mixing: mix polyol and isocyanate using a static or dynamic mixer. Mixing quality depends on output, element count and rotational speed, so establish optimum conditions in advance. (6) Casting: apply release agent beforehand and inject the resin into a mold with appropriate degassing and parting-line sealing. (7) Cure conditions: maintain the mold at 60°C and demold after 30 minutes. Placing the part immediately after demolding at a temperature above the mold temperature may cause distortion, depending on its shape. Use a suitable holding fixture.

Packaging :

RIMCast 836A Polyol	RIMCast 836B Isocyanate
16kg	20 kg

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Storage :

RIMCast 836 has a shelf life of 9 months when stored dry in unopened containers at 15°C-25°C. Both RIMCast 836 polyol and isocyanate components are highly sensitive to moisture. Avoid water contamination or prolonged exposure to humid air, and reseal containers immediately after use. Moisture reacts with the isocyanate component, causing cloudiness or solidification, loss of transparency and reduced properties in the cured material. Do not use moisture-contaminated material. Prolonged storage of the isocyanate component at 5°C may cause partial or complete crystallisation. Heat it in an oven at 60-70°C until dissolved, then stir thoroughly before use. Continuous heating at 50°C accelerates deterioration and may cause container swelling. Storage in a crystallised state also

accelerates deterioration; dissolve the crystals, then store at 20-25°C.

Safety precautions :

Avoid skin contact during application. Wear protective clothing, a mask and protective gloves as necessary, and work in a well-ventilated area. Refer to the material safety data sheet for further information.

Notes :

All data above were measured under specified conditions. As actual processing methods and other factors may affect performance, customers should conduct the necessary tests before use to confirm suitability for their application. We guarantee that our products meet our quality specifications.

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US customary-unit equivalents

US customary-unit equivalents are provided for convenience alongside the original SI test data. The original source values and test methods remain the controlling reference. Converted values are rounded.

Source value	US equivalent
78 °C	172.4 °F
25 °C	77 °F
100 g	0.2205 lb
50-70 °C	122 to 158 °F
23 °C	73.4 °F
1500 MPa	217557 psi
65 MPa	9427 psi
50 MPa	7252 psi
78 °C	172.4 °F
70 °C	158 °F
25-30 °C	77 to 86 °F
60 °C	140 °F
16 kg	35.3 lb
20 kg	44.1 lb
15 °C	59 °F
-25 °C	-13 °F
5 °C	41 °F
60-70 °C	140 to 158 °F
50 °C	122 °F
20-25 °C	68 to 77 °F