

Advanced Materials

**HUNTSMAN**

Structural Composites

## PROVISIONAL DATA SHEET

**Resin XB 3292\* and Amine hardeners****Resin XB 3292 is a low viscosity epoxy resin****Applications**

- Industrial composites
- Structural composites

**Properties**

Amine cured matrix systems offering high Temperature resistance

**Processing**

- Wet lay-up
- Filament Winding
- Resin Transfer Moulding (RTM)
- Pressure Moulding

**Key data****Resin XB 3292**

Aspect (visual)	Clear yellow to brown liquid	
Viscosity at 25 °C (ISO 12058-1)	2500 - 3500	[mPa s]
Density at 25 °C (ISO 1675)	1.10 - 1.20	[g/cm <sup>3</sup> ]
Flash point (ISO 2719)	> 100	[°C]
Storage temperature (see expiry date on original container)	2 - 8	[°C]

**Storage**

Provided that resin XB 3292 are stored in a dry place in his original, properly closed containers at the above mentioned storage temperature they will have the shelf lives indicated on the labels.

Partly emptied containers should be closed immediately after use.

\* In addition to the brand name product denomination may show different appendices , which allows us to differentiate between our production sites: e.g , BD = Germany, US = United States, IN = India, CI = China, etc.. These appendices are in use on packaging, transport and invoicing documents. Generally the same specifications apply for all versions. Please address any additional need for clarification to the appropriate Huntsman contact.

## Processing data

<b>Mix ratio</b> [pbw]			
Resin XB 3292	100	100	100
Aradur 2954	48		
Hardener XB 3473		34	
Hardener LMB 6261			39
<b>Gel time</b> [min] (hot plate)			
at 80 °C	34 - 44	360 - 420	195 - 225
at 100 °C	11 - 17	170 - 210	70 - 90
at 120 °C	4 - 8	55 - 75	35 - 40
at 140 °C	2 - 4	25 - 35	15 - 20
at 150 °C	1 - 3	18 - 24	10 - 14
<b>Pot life</b> [hours] (Tecam, 100 ml)			
at 23°C	11 - 14	78 - 86	26 - 32
<b>Initial mix viscosity</b> [mPas] (cone plate viscosimeter)			
at 25°C	1400 - 1800	1600 - 2000	2300 - 2800

## Properties of the cured, neat formulation

	Hardener	Hardener	Hardener
<b>Resin XB 3292</b>	Aradur 2954	XB 3473	LMB 6261
<b>Cure cycle:</b> 2h at 100°C + 1h at 140°C + 1h at 180°C + 2h at 200°C			
<b>Glass transition temperature</b>			
DSC, 10 K/min $T_g$ [°C]	198 - 206	195 - 203	194 - 202
DMA, 2 K/min $T_g$ [°C]	220 - 230	210 - 220	208 - 218
<b>Flexural test</b> (ISO 178)			
Flexural strength [MPa]	115 - 125	98 - 108	120 - 130
Elongation at flexural strength [%]	4.4 - 4.9	4.1 - 4.6	4.4 - 4.9
Ultimate strength [MPa]	115 - 125	98 - 108	120 - 130
Ultimate elongation [%]	4.4 - 4.9	4.1 - 4.6	4.4 - 4.9
Flexural modulus [MPa]	3050 - 3250	3050 - 3250	3150 - 3350
<b>Fracture properties</b>			
<b>Bend notch test</b> (PM 258-0/90)			
Fracture toughness $K_{Ic}$ [MPa√m]	0.53 - 0.58	0.50 - 0.55	0.50 - 0.55
Fracture energy $G_{Ic}$ [J/m <sup>2</sup> ]	75 - 85	70 - 75	70 - 75
<b>Water absorption</b> (ISO 62)			
10 days H <sub>2</sub> O 23 °C [%]	0.62 - 0.68	0.76 - 0.82	0.67 - 0.73
1 day H <sub>2</sub> O 100 °C [%]	0.34 - 0.40	0.39 - 0.45	0.37 - 0.43

**Handling precautions** Mandatory and recommended industrial hygiene procedures should be followed whenever our products are being handled and processed. For additional information please consult the corresponding product safety data sheets and the brochure "Hygienic precautions for handling plastics products" .

**Personal hygiene**

*Safety precautions at workplace*

protective clothing	yes
gloves	essential
arm protectors	recommended when skin contact likely
goggles/safety glasses	yes

*Skin protection*

before starting work	Apply barrier cream to exposed skin
after washing	Apply barrier or nourishing cream

*Cleansing 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

*Disposal of spillage*

Soak up with sawdust or cotton waste and deposit in plastic-lined bin

*Ventilation*

of workshop	Renew air 3 to 5 times an hour
of workplaces	Exhaust fans. Operatives should avoid inhaling vapours

**First aid**

Contamination of the eyes by resin, hardener or 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.

Anyone taken ill after *inhaling* vapours should be moved out of doors immediately. In all cases of doubt call for medical assistance.

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