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Advanced Materials

Araldite LY 3508* / Hardener XB 3473*

TOUGHENED EPOXY RESIN

Resin XU 3508 is a medium viscosity toughened epoxy resin.

APPLICATIONS	Industrial composites		
PROPERTIES	Laminating Araldite LY 3508 has a good toughness effect combined with a low viscosity		
PROCESSING	• Wet lay-up • Filament Winding • Pressure Moulding • Resin Transfer Moulding (RTM)		
PRODUCT DATA	**Araldite LY 3508**		
	Aspect (visual)	white liquid	
	Viscosity at 25 °C (ISO 2555)	11000 – 20000 **	[mPa s]
	Density at 25 °C (ISO 1675)	1.15 - 1.20	[g/cm^3]
	Epoxy value (ISO 3001)	4.8 - 5.4 **	[ep/Kg]
	Hardener XB 3473		
	Aspect (visual)	clear yellow to brown liquid	
	Viscosity at 25 °C (ISO 12058-1)	80 – 125 **	[mPa s]
	Density at 25 °C (ISO 1675)	0.99 - 1.02	[g/cm^3]
	Amine value (ISO 9702)	11.20 – 12.10 **	[Eq/kg]

** *Specified data are on a regular basis analysed. Data which is described in this document as 'typical' is not analysed on a regular basis and is given for information purposes only. Data values are not guaranteed or warranted unless if specifically mentioned.*

STORAGE	Provided that Araldite LY 3508, Hardener XB 3473 are stored in a dry place in their original, properly closed containers at the storage temperatures mentioned in the MSDS they will have the shelf lives indicated on the labels. Partly emptied containers should be closed immediately after use. Epoxy Araldite LY 3508 which has crystallized and looks cloudy can be restored to its original state by heating to 60 - 80°C.

* *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.*

TYPICAL SYSTEM DATA

PROCESSING DATA

MIX RATIO

Components	*Parts by weight*	*Parts by volume*
Araldite LY 3508	100	100
Hardener XB 3473	23	27

We recommend that the components are weighed with an accurate balance to prevent mixing inaccuracies which can affect the properties of the matrix system. The components should be mixed thoroughly to ensure homogeneity. It is important that the side and the bottom of the vessel are incorporated into the mixing process.

When processing large quantities of mixture the pot life will decrease due to exothermic reaction. It is advisable to divide large mixes into several smaller containers.

INITIAL MIX VISCOSITY
(CONE PLATE)

	[°C]	*[mPa s]*
LY 3508 / Hardener XB 3473	at 25	4400 - 5500

POT LIFE
(TECAM)

	[°C]	*[g]*	*[min.]*
LY 3508 / Hardener XB 3473	at 23	100	1700 - 2000

GEL TIME
(HOT PLATE)

	[°C]	*[min]*
LY 3508 / Hardener XB 3473	at 140	23 – 30
	at 160	15 – 21

The values shown are for small amounts of pure resin/hardener mix. In composite structures the gel time can differ significantly from the given values depending on the fibre content and the laminate thickness.

PROPERTIES OF THE CURED, NEAT FORMULATION			
GLASS TRANSITION TEMPERATURE	*Cure:*	T_G	*LY 3508* XB 3473
(ISO 11357-2, DSC, 10 K/MIN)	1 h 120°C + 2 h 200°C	[°C]	170 – 180
	2 h 120°C + 2 h 140°C + 2h180°C	[°C]	170 – 180
FLEXURAL TEST (ISO 178)	*Cure:* 2 h 120°C + 2 h 140°C + 2h180°C		*LY 3508* XB 3473
	Flexural strength	[MPa]	95 – 110
	Elongation at flexural strength	[%]	5.5 – 7.0
	Flexural modulus	[MPa]	2350 – 2450
FRACTURE PROPERTIES BEND NOTCH TEST (ISO 13586)	*Cure:* 2 h 120°C + 2 h 140°C + 2h180°C		*LY 3508* XB 3473
	Fracture toughness K_{1C}	[MPa√m]	0.7 – 0.8
	Fracture energy G_{1C}	[J/m^2]	220 - 260
WATER ABSORPTION (ISO 62)	*Cure:* 15 min 120°C + 2 h 150°C		*LY 3508* XB 3473
	10 days H_2O 23°C	[%]	0.54 – 0.62

HANDLING PRECAUTIONS

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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