HUNTSMAN

Enriching lives through innovation

Advanced Materials

Araldite® LY 3508* / Hardener XB 3403*

TOUGHENED EPOXY RESIN

Araldite® LY 3508 is a medium viscosity toughened epoxy resin.

APPLICATIONS	Industrial composites		
PROPERTIES	Laminating Resin XU 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 3403		
	Aspect (visual)	transparent liquid	
	Viscosity at 25 °C (ISO 12058-1)	5 - 20	[mPa s]
	Density at 25 °C (ISO 1675)	0.95 - 1.0	[g/cm^3]

** *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 3403 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 3403	30	37

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 3403	at 25		650 - 800
POT LIFE (TECAM)		*[°C]*	*[g]*	*[min.]*
	LY 3508 / Hardener XB 3403	at 23	100	600 - 720
GEL TIME (HOT PLATE)		*[°C]*		*[min]*
	LY 3508 / Hardener XB 3403	at 80		30 – 36
		at 100		13 – 18

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 3403
(ISO 11357-2, DSC, 10 K/MIN)	8h 60 °C	[°C]	63 – 68
	4 h 60 °C + 6 h 80 °C	[°C]	70 – 75
FLEXURAL TEST (ISO 178)	*Cure:*		LY 3508 XB 3403
	4 h 60 °C + 6 h 80 °C		
	Flexural strength	[MPa]	1010 – 125
	Elongation at flexural strength	[%]	4.5 – 5.5
	Ultimate strength	[MPa]	80 – 90
	Ultimate elongation	[%]	9.0 – 11.0
	Flexural modulus	[MPa]	2900 – 3100
FRACTURE PROPERTIES BEND NOTCH TEST (ISO 13586)	*Cure:*		LY 3508 XB 3403
	4 h 60 °C + 6 h 80 °C		
	Fracture toughness K_{1C}	[MPa√m]	2.1 – 2.3
	Fracture energy G_{1C}	[J/m^2]	1250 - 1400
WATER ABSORPTION (ISO 62)	*Cure:*		LY 3508 XB 3403
	4 h 60 °C + 6 h 80 °C		
	10 days H_2O 23 °C	[%]	0.44 – 0.52

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.

HUNTSMAN

Enriching lives through innovation

Huntsman Advanced Materials
(Switzerland) GmbH
Klybeckstrasse 200
4057 Basel
Switzerland

Tel: +41 (0)61 299 11 11
Fax: +41 (0)61 299 11 12

www.huntsman.com/advanced_materials
Email: advanced_materials@huntsman.com



Huntsman Advanced Materials warrants only that its products meet the specifications agreed with the user. Specified data are analysed on a regular basis. Data which is described in this document as 'typical' or 'guideline' 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.
The manufacture of materials is the subject of granted patents and patent applications; freedom to operate patented processes is not implied by this publication. While all the information and recommendations in this publication are, to the best of Huntsman Advanced Material's knowledge, information and belief, accurate at the date of publication, nothing herein is to be construed as a warranty, whether express or implied, including but without limitation, as to merchantability or fitness for a particular purpose. In all cases, it is the responsibility of the user to determine the applicability of such information and recommendations and the suitability of any product for its own particular purpose.
The behaviour of the products referred to in this publication in manufacturing processes and their suitability in any given end-use environment are dependent upon various conditions such as chemical compatibility, temperature, and other variables, which are not known to Huntsman Advanced Materials. It is the responsibility of the user to evaluate the manufacturing circumstances and the final product under actual end-use requirements and to adequately advise and warn purchasers and users thereof.
Products may be toxic and require special precautions in handling. The user should obtain Safety Data Sheets from Huntsman Advanced Materials containing detailed information on toxicity, together with proper shipping, handling and storage procedures, and should comply with all applicable safety and environmental standards.
Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent on manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.
Except where explicitly agreed otherwise, the sale of products referred to in this publication is subject to the general terms and conditions of sale of Huntsman Advanced Materials LLC or of its affiliated companies including without limitation, Huntsman Advanced Materials (Europe) BVBA, Huntsman Advanced Materials Americas Inc., Huntsman Advanced Materials (UAE) FZE, Huntsman Advanced Materials (Guangdong) Company Limited, and Huntsman Advanced Materials (Hong Kong) Ltd.
Huntsman Advanced Materials is an international business unit of Huntsman Corporation. Huntsman Advanced Materials trades through Huntsman affiliated companies in different countries including but not limited to Huntsman Advanced Materials LLC in the USA and Huntsman Advanced Materials (Europe) BVBA in Europe.

All trademarks mentioned are either property of or licensed to Huntsman Corporation or an affiliate thereof in one or more, but not all, countries.
Copyright © 2012 Huntsman Corporation or an affiliate thereof. All rights reserved.