

Advanced Materials**Resin XU 3508* / Hardeners XB 3403* / XB 3486* /
Aradur® 22962* / Aradur® 2954* / Hardener XB 3473*****TOUGHENED EPOXY RESIN**

Resin XU 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	<ul style="list-style-type: none">• Wet lay-up• Filament Winding• Pressure Moulding• Resin Transfer Moulding (RTM)																		
KEY DATA	Resin XU 3508 <table border="1"><tr><td>Aspect (visual)</td><td>white liquid</td><td></td></tr><tr><td>Viscosity at 25 °C (ISO 2555)</td><td>11000 - 20000</td><td>[mPa s]</td></tr><tr><td>Epoxy value</td><td>4.8 - 5.2</td><td>[ep/Kg]</td></tr><tr><td>Density at 25 °C (ISO 1675)</td><td>1.15 - 1.20</td><td>[g/cm³]</td></tr><tr><td>Flash point (ISO 2719)</td><td>200</td><td>[°C]</td></tr><tr><td>Storage temperature (see expiry date on original container)</td><td>2 - 40</td><td>[°C]</td></tr></table>	Aspect (visual)	white liquid		Viscosity at 25 °C (ISO 2555)	11000 - 20000	[mPa s]	Epoxy value	4.8 - 5.2	[ep/Kg]	Density at 25 °C (ISO 1675)	1.15 - 1.20	[g/cm ³]	Flash point (ISO 2719)	200	[°C]	Storage temperature (see expiry date on original container)	2 - 40	[°C]
Aspect (visual)	white liquid																		
Viscosity at 25 °C (ISO 2555)	11000 - 20000	[mPa s]																	
Epoxy value	4.8 - 5.2	[ep/Kg]																	
Density at 25 °C (ISO 1675)	1.15 - 1.20	[g/cm ³]																	
Flash point (ISO 2719)	200	[°C]																	
Storage temperature (see expiry date on original container)	2 - 40	[°C]																	
STORAGE	<p>Provided that Resin XU 3508 are stored in a dry place in his original, properly closed containers at the above mentioned storage temperatures they will have the shelf lives indicated on the labels.</p> <p>Partly emptied containers should be closed immediately after use.</p>																		

* 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

Mix ratio [pbw]					
Resin XU 3508	100	100	100	100	100
Hardener XB 3403	30	-	-	-	-
Hardener XB 3486	-	30	-	-	-
Aradur® 22962	-	-	22	-	-
Aradur® 2954	-	-	-	30	-
Hardener XB 3473	-	-	-	-	23
Gel time [min.] (hot plate)					
at 80 °C	30 - 36	-	-	-	-
at 100 °C	13 - 18	9 - 14	6 - 10	9 - 14	-
at 110 °C	-	-	-	-	-
at 120 °C	-	3 - 7	4 - 8	-	-
at 140 °C	-	-	-	2 - 4	23 - 30
at 160 °C	-	-	-	-	15 - 21
Pot life [min.] (Tecam, 100 ml)					
at 23 °C	600 - 720	380 - 480	100 - 150	320 - 380	1700 - 2000
Initial mix viscosity [mPas] (cone plate viscosimeter)					
at 25 °C	650 - 800	720 - 860	1800 - 2100	2600 - 3300	4400 - 5500

PROPERTIES OF THE CURED, NEAT FORMULATION

Resin XU 3508	Hardeners				
	XB 3403	XB 3486	Aradur® 22962	Aradur® 2954	XB 3473
Glass transition temperature (DSC, 10 K/min) <i>Cure:</i> <i>Cure</i> <i>Cure cycle</i>	 	 	 	 	
Flexural test (ISO 178) Flexural strength [MPa] Elongation at flexural strength [%] Ultimate strength [MPa] Ultimate elongation [%] Flexural modulus [MPa]	 	 	 	 	
Fracture properties Bend notch test (PM 258-0/90) Fracture toughness K_{1C} [MPa√m] Fracture energy G_{1C} [J/m ²]	 	 	 	 	
Water absorption (ISO 62) 10 days H ₂ O 23 °C [%]	 	 	 	 	

**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.

IMPORTANT LEGAL NOTICE

Huntsman Advanced Materials warrants only that its products meet the specifications agreed with the user. Typical properties, where stated, are to be considered as representative of current production and should not be treated as specifications.

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., 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.

Aradur is a registered trademark of Huntsman Corporation or an affiliate thereof.

Copyright © 2007 Huntsman Corporation or an affiliate thereof. All rights reserved.

Main Office :
Huntsman Advanced Materials (Switzerland) GmbH
Klybeckstrasse 200
CH-4057 BASEL
Switzerland
+41 61 966 3333