

Advanced Materials**Araldite® LY 3585* / Aradur® 5049-1 CH***

Araldite® LY 3585 is a low viscosity epoxy resin

Aradur® 5049-1 is a hardener mixture of polyamines

APPLICATIONS	• Recreational composites • Structural composites		
PROPERTIES	Easy-to-handle laminating system for the production of advanced composites lay-up by wet process.		
PROCESSING	• Wet lay-up		
TYPICAL KEY DATA	Araldite® LY 3585		
	Aspect (visual)**	Clear liquid	
	Colour (Gardner, ISO 4630)	≤ 3**	
	Viscosity at 25 °C (ISO 12058-1)	6500 – 9000**	[mPa s]
	Density at 25 °C (ISO 1675)	1.15-1.20	[g/cm³]
	Flash point (ISO 2719)	> 200	[°C]
	Storage temperature (see expiry date on original container)	2 - 40	[°C]
	Aradur® 5049-1		
	Aspect (visual)**	Brownish liquid	
	Viscosity at 25 °C (ISO 12058-1)	600 – 1200**	[mPa s]
	Density at 25 °C (ISO 1675)	0.90-1.0	[g/cm³]
	Flash point (ISO 2719)	115	[°C]
	Storage temperature (see expiry date on original container)	2 - 40	[°C]

*** 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 the products described above are stored in a dry place in their original, properly closed containers at the above mentioned storage temperatures they will have the shelf lives indicated on the labels. Partly emptied containers should be closed immediately after use. Araldite® LY 3585 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. Generally the same specifications apply for all versions. Please address any additional need for clarification to the appropriate Huntsman contact.

PROCESSING DATA (TYPICAL AVERAGE VALUES)

MIX RATIO	<i>Components</i>	<i>Parts by weight</i>	<i>Parts by volume</i>
	Araldite® LY 3585	100	100
	Aradur® 5049-1	44	52

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	<i>[°C]</i>	<i>[mPa s]</i>
(HOEPLER, ISO 12058-1B)	at 25	2300 – 2800

POT LIFE	<i>[°C]</i>	<i>[min]</i>
(TECAM, 200 GR, 65 % RH)	at 25	70 – 90

GEL TIME	<i>[°C]</i>	<i>[min]</i>
(HOT PLATE)	at 60	22 - 26
	at 80	6 - 10
	at 100	2 - 5

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.

TYPICAL CURE CYCLES	15 – 19 min at 80°C or 7 – 9 min at 100°C or 5 – 7 min at 120°C
----------------------------	---

The optimum cure cycle has to be determined case by case depending on the processing and the economic requirements.

PROPERTIES OF THE CURED, NEAT FORMULATION (TYPICAL AVERAGE VALUES)

GLASS TRANSITION TEMPERATURE	<i>Cure:</i>	<i>T_G [°C]</i>
(IEC 1006, DSC, 10 K/MIN)	7 min at 100°C	78 – 83
	30 min at 100°C	78 – 83
	5 min at 120°C	80 – 86
	30 min at 120°C	82 – 88

LAB SHEAR STRENGTH TEST ON ALU GRINDED	<i>Cure:</i>	<i>[N/mm²]</i>
(ISO 4587)	16 min at 80°C	ca.15
	7 min at 100°C	ca.16
	5 min at 120°C	ca.17

**HANDLING
PRECAUTIONS****Personal hygiene***Safety precautions at workplace*

protective clothing	overalls
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 Advanced Materials
(Switzerland) GmbH**
Klybeckstrasse 200
CH - 4057 Basel
Switzerland

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

www.huntsman.com/advanced_materials



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.