

Advanced Materials**Araldite® LY 1556 / Aradur® 34055****WARM CURING EPOXY SYSTEM**

Araldite® LY 1556 epoxy resin
Aradur® 34055 amine hardener

APPLICATIONS	<ul style="list-style-type: none">• Industrial composites• Structural composites
PROPERTIES	Laminating system with high flexibility.
PROCESSING	Filament Winding Resin Transfer Moulding (RTM) Wet Lay-up
KEY DATA	Araldite® LY 1556
	Aspect (visual) clear liquid
	Viscosity at 25 °C (ISO 12058-1) 10000 - 12000 [cps]
	Density at 25 °C (ISO 1675) 1.15 - 1.20 [g/cm ³]
	Aradur® 34055
	Aspect (visual) liquid
	Viscosity at 25 °C (ISO 12058-1) 70-90 [cps]
	Density at 25 °C (ISO 1675) 0.95 – 1.0 [g/cm ³]
	Flash point (ISO 2719) 228 [109] °F [°C]

PROCESSING DATA

MIX RATIO	<i>Components</i>	<i>Parts by weight</i>	<i>Parts by volume</i>
	Araldite® LY 1556	100	100
	Aradur® 34055	33	41

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>°F [°C]</i>	<i>[cps]</i>
(HOEPLER, ISO 12058-1B)	at 77 [25]	1500 - 1800

POT LIFE	<i>°F [°C]</i>	<i>[min]</i>
(TECAM, 100 ML, 65 % RH)	at 82 [28]	40 - 50

GEL TIME	<i>°F [°C]</i>	<i>[min]</i>
(HOT PLATE)	at 176 [80]	6 - 9

GELATION AT 28°C		<i>[min]</i>
(IN THIN LAYERS 0.4-0.7 MM)	Start	200-260
	End	300-360

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	4h 140°F (60°C)+ 6h 176°F (80°C)
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PROPERTIES OF THE CURED, NEAT FORMULATION

GLASS TRANSITION TEMPERATURE (IEC 1006, DSC, 10 K/MIN)	<i>Cure:</i> 4h 140°F + 6h 176°F		°F 198 - 208
HEAT DEFLECTION TEMPERATURE (ISO 75)	<i>Cure:</i> 4h 140°F + 6h 176°F		176 - 185
TENSILE TEST (ISO 527)		<i>Cure:</i>	4h 140°F + 6h 176°F
	Tensile strength	[psi]	11310 – 12760
	Elongation at tensile strength	[%]	4.5 - 5.5
	Ultimate strength	[psi]	10150 – 11600
	Ultimate elongation	[%]	8 - 10
	Tensile modulus	[psi]	464000 - 507500
FLEXURAL TEST (ISO 178)		<i>Cure:</i>	4h 140°F + 6h 176°F
	Flexural strength	[psi]	18850 – 21025
	Elongation at flexural strength	[%]	6 - 7
	Ultimate strength	[psi]	15950 – 18125
	Ultimate elongation	[%]	9 - 11
	Flexural modulus	[psi]	449500 – 493000
FRACTURE PROPERTIES		<i>Cure:</i>	4h 140°F + 6h 176°F
BEND NOTCH TEST (PM 258-0/90)	Fracture toughness K_{1C}	[psi $\sqrt{\text{inch}}$]	714 - 879
	Fracture energy G_{1C}	[in-lb/inch ²]	0.74 – 0.97
WATER ABSORPTION (ISO 62)	<i>Immersion:</i>	<i>Cure:</i>	4h 140°F + 6h 176°F
	1 day H ₂ O 23 °C	[%]	0.13 - 0.17
	10 days H ₂ O 23 °C	[%]	0.50 - 0.55

STORAGE

Araldite® LY 1556 should be stored in a dry place, the sealed original container, away from heat and humidity, at temperatures between +2°C and +40°C (+35.6°F and +104°F). Under these storage conditions, the shelf life is 5 years. The product should not be exposed to direct sunlight.

Like many liquid epoxy resins, Araldite® LY 1556 may crystallize when stored below room temperature. Heating the resin to 60-70°C (140-160°F), preferably in a water bath, for several hours, will reliquify it and restore its original properties.

Aradur® 34055 should be stored in a dry place, the sealed original container, away from heat and humidity, at temperatures between +2°C and +40°C (+35.6°F and +104°F). Under these storage conditions, the shelf life is 3 years. The product should not be exposed to direct sunlight.

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First Aid!

Refer to MSDS as mentioned above.

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