

**Advanced Materials****Araldite<sup>®</sup> GY 508**

## FLEXIBLE LIQUID EPOXY RESIN

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<b>GENERAL</b>	Araldite <sup>®</sup> GY 508 is a low viscosity, solvent-free flexible epoxy resin which serves as a modifier for other epoxy resins. It is used to give increased flexibility, improved impact resistance, higher elongation and extended pot life. Araldite <sup>®</sup> GY 508 is compatible with bisphenol A and F epoxy resins in all proportions, giving the user a wide choice of cured properties.	
<b>CHEMICAL DESCRIPTION</b>	Bisphenol A based epoxy resin blended with a polyglycol diepoxide	
<b>APPLICATIONS</b>	Civil engineering Sealers Coatings Floorings Expansion joints Adhesives	
<b>ADVANTAGES</b>	Excellent compatibility Excellent flexibility and toughness Excellent adhesion Low viscosity Light color Low odor Good chemical resistance Good heat resistance	
<b>TYPICAL PROPERTIES*</b>	Visual Appearance	Clear, slight haze
	Color, Gardner, max.	5
	Weight per Epoxide	390 - 425
	Viscosity @25°C (77°F), cPs	2000 - 5000
	Weight per Gallon, lb/gal	9.4
	Flash Point, Closed Cup, °C (°F)	149 (300)

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\* Typical properties are based on Huntsman's test methods. Copies are available upon request.

**FORMULATIONS**

Araldite<sup>®</sup> GY 508 can be blended with any conventional epoxy resin at any ratio; the user must optimize his formulation to suit his requirements. Araldite<sup>®</sup> GY 508 may be cured with amines, polyamides, and any other typical epoxy hardeners. It requires 40 to 45 percent the amount of hardener as does the standard epoxy resin Araldite<sup>®</sup> GY 6010. therefore, the amount of hardener needed will be reduced as the amount of Araldite<sup>®</sup> GY 508 is increased.

Due to low viscosity and depending on the hardener, coatings based on Araldite<sup>®</sup> GY 508 can be easily applied by brush, roller or trowel.

**EFFECT OF ADDED ARALDITE<sup>®</sup> GY 508 ON PHYSICAL PROPERTIES OF CURED FILMS**

**Table 1****Parts by weight**

<b>Formulation No.</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
<b>Composition of Formulations</b>						
GY 6010	100	75	50	100	75	50
GY 508	-	25	50	-	25	50
Aradur <sup>®</sup> 283	70	61	51	-	-	-
Aradur <sup>®</sup> 2963	-	-	-	45	39	33
<b>Tensile Properties</b>						
Ultimate Tensile Strength, (psi)	4700	2113	134	8426	6883	2052
Ultimate % Elongation	26.1	35.4	25.7	2.3	3.4	47.3
Modulus x10 <sup>3</sup> psi	272.5	77.2	0.5	415.3	321.6	58.9
<b>Shore Hardness</b>	N.D.	65D 74A	18D	84D	81D	70D

**HIGHLY FLEXIBLE EPOXY SYSTEMS:****Table 2**

Formulation No.	Parts by weight		
	1	2	3
Araldite® GY 6005	100	80	70
Araldite® GY 508		20	30
Aradur® 837	35	32	30
Viscosity of resin/hardener mix, cP @ 25°C (DIN 53015)	8300	7000	6800
Gel time (100 ml) at 20°C (Tecam), min	21	25	25
Dust-dry time @ 20°C, 65% rh, hr	> 30*	> 30*	>30*
Through cure @ 20°C, 65% rh, hr	4	5	5
Flow @ 20°C, 65% rh	Very good	Very good	Very good
Transparency	Clear	Clear	Clear
Surface aspect @ 20°C, 65% rh	Glossy	Glossy	Glossy
Exudation @ 20°C, 65% rh	Slight	Slight	Slight
Persoz hardness <sup>1</sup>			
after 1 day, 20°C, 65% rh, sec	270	250	210
after 1 week, 20°C, 65% rh, sec	380	310	270
after 1 month, 20°C, 65% rh, sec	380	330	290
Erichsen distensibility (DIN 53156) <sup>2</sup>			
after 2 months, 20°C, 65% rh, mm	1.5	6-8	7-9
after 2 months, 60°C, 65% rh, mm	1-3	5-7	5-7
Impact test <sup>2</sup>			
after 2 months, 20°C, 65% rh, in/lb	40	60	90
after 2 months, 60°C, 65% rh, in/lb	60	90	90
Mandrel test 15 mm mandrel <sup>2</sup>			
after 2 months, 20°C, 65% rh, °<	50	50	180
after 2 months, 60°C, 65% rh, °<	60	90	180
Boiling water test, 6 hr @ 96°C	Unaffected	Unaffected	Unaffected
Adhesion <sup>3</sup> after 10 days @ 20°C, 65% rh	Good	Good	Good
Cure @ 20°C, 100% rh			
Surface aspect	Fine structure	Fine structure	Fine structure
Transparency	Clear	Clear	Clear
Exudation	None	None	None
Cure @ 5°C, 45% rh			
Hardening time, hr	< 24	~ 24	< 48
Surface aspect	Fine structure	Fine structure	Fine structure
Transparency	Clear	Clear	Clear
Exudation	Slight	Slight	Slight
Persoz hardness <sup>1</sup>			
after 1 day, sec	170	50	30
after 1 week, sec	330	160	160
after 1 month, sec	350	230	190

<sup>1</sup> film thickness approx. 8 mils (200 microns) on glass<sup>2</sup> film thickness approx. 8 mils (200 microns) on degreased, pickled steel<sup>3</sup> sandblasted steel panel

\* the long dust-drying time is due to the exudation. The exudation is eliminated by pigmentation and/or addition of benzyl alcohol

**CHEMICAL RESISTANCE AT ROOM TEMPERATURE (Immersion Tests)**

Substrate : Steel, sandblasted  
 Film thickness : 12-20 mil (300-500 microns)  
 Cure prior to testing : 10 days at 20 - 22°C

**Formulation No.**

**1**  
**GY 6005 : 100**  
**Aradur® 837 : 35**

**2**  
**GY 6005 : 80**  
**GY 508 : 20**  
**Aradur® 837 : 32**

**3**  
**GY 6005 : 70**  
**GY 508 : 30**  
**Aradur® 837 : 30**

Test in Months	1												2												3															
	½	1	2	3	4	5	6	7	8	9	10	11	12	½	1	2	3	4	5	6	7	8	9	10	11	12	½	1	2	3	4	5	6	7	8	9	10	11	12	
Water deionized	+++++																																							
Hydrochloric acid 20%	+++++																																							
Hydrochloric acid 36%	+++	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	D										A	A	A	D										
Sulphuric acid, 50%	+++++																																							
Ammonia, 25%	+++++																																							
Xylene	+++++																																							
Ethanol, 95%	A	A	A	A	A	A	A	A	A	A	A	A	A	D													A	A	A	A	A	A	A	A	A	A	A	A	A	
Ethanol, 50%	+++++																																							
Acetic acid, 10%	+ D																																							
Acetic acid, 5%	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	

+ = resistant  
 A = attacked  
 D = destroyed

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**PACKAGING AND STORAGE**

Araldite<sup>®</sup> GY 508 is supplied in a 500 pound steel drum and bulk. This material should be stored at room temperature in the original sealed container (actual expiration date appears on the label).

**FIRST AID****In case of contact :**

**Eyes :** Immediately flush with water for at least 15 minutes.

**Skin :** Promptly wash thoroughly with mild soap and water.

**Inhalation :** Remove to fresh air. If breathing is difficult, give oxygen.

**Ingestion :** If conscious, give plenty of water. Get medical attention.

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**HANDLING/SAFETY  
PRECAUTIONS**

**Warning ! Causes irritation.**

**May cause dermatitis and sensitization.**

Avoid contact with skin, eyes, and clothing.

Avoid breathing vapor, mist or spray.

Use with good ventilation.

Promptly remove wet contaminated non-impervious clothing;

Wash before re-use.

Destroy contaminated leather and absorbent shoes.

Wash after handling.

Use of protective barrier cream is recommended.

Store in closed containers in cool, dry area.

**Read Material Safety Data Sheet Before Using This Product.  
For Industrial Use Only.**

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