

Electronic Polymers

Encapsulating

Araldite® LC 177 Resin Hardener HY 2954

Araldite® Epoxy Casting System

Epoxy based casting system for processing and curing at elevated temperature.

Applications Transformers, filters, capacitors etc.

Processing Methods Casting / Impregnating
Manually or with automatic mixing and dosing equipment

Properties

- Low shrinkage on curing
- Good thermal conductivity
- Non abrasive casting system
- Good static and dynamic mechanical properties
- Very good temperature resistance

Product data

(guideline values)

Resin (Containing mineral filler)

Araldite® LC 177	Viscosity	at 25°C	mPas	19-23000
	Specific gravity	at 25°C	g/cm ³	1.7
	Flash point		°C	135
As supplied form	Coloured liquid (Beige, Black, or Red)			
Hazardous decomposition products	Carbon monoxide, carbon dioxide and other toxic gases and vapours if burned			
Disposal	Regular procedures approved by national and/or local authorities			

Hardener

Hardener HY 2954	Viscosity	at 25°C	mPas	70-80
	Specific gravity	at 25°C	g/cm ³	0.941
	Flash point		°C	>175
As-supplied form	Clear ,pale yellow liquid			
Hazardous decomposition products	Carbon monoxide, carbon dioxide and other toxic gases and vapours if burned			
Disposal	Regular procedures approved by national and/or local authorities			

Storage

Store the components in a dry place at 18-25°C, in tightly sealed original containers. Under these conditions, the shelf life will correspond to the expiry date stated on the label. After this date, the product may be processed only after reanalysis. Partly emptied containers should be tightly closed immediately after use. For information on waste disposal and hazardous products of decomposition in the event of a fire, refer to the Material Safety Data Sheets (MSDS) for these particular products.

Processing and end properties

Mix Ratio

		Parts by weight	Parts by volume
Araldite® LC 177	Resin	100	100
HY 2954	Hardener	14	25

Processing Data

Mixed System:

Viscosity at 25°C	DIN 53019	mPas	3000-4000
Pot life	100gm	Minutes	250-300
	500gm		250-300
Minimum Curing cycle		6-10h at 50°C or 3-5h at 70°C	

Araldite® LC 177 contains fillers which tend to settle over time. It is therefore recommended to carefully homogenize the complete contents of the container before use.

In the storage vessels of the production equipment, the pre filled products should be stirred up from time to time to avoid sedimentation and irregular metering.

Mechanical and Physical Properties (guideline values)

Cured System:

Determined on standard test specimen at 25°C. Cured for 10h at 50°C

Specific gravity	g/cm ³	1.57-1.62
Heat distortion temperature	°C	92-102
Tensile strength	Mpa	55-60
Compressive Strength	Mpa	105-110
Coefficient of thermal expansion	mm/mm°Cx10 ⁻⁶	50-60
Modulus of Elasticity	Mpa	10-11x10 ³
Water absorption (specimen: 50x50x4 mm) ISO 62/80 10 days at 20°C	% by wt.	0.20-0.25

Electrical Properties (guideline values)

Determined on standard test specimen at 25°C. Cured for 7 days at 25°C

Dielectric strength (@ 50HZ, 25°C)	kV/mm	18-20
Power factor (tan@50HZ)	25°C	0.011
	60°C	0.015
	90°C	0.029
Dielectric constant (ε _r , 50Hz, 25°C)		4.2
Volume resistivity (r, 50Hz, 25°C)	OHMS/cm	2.5x10 ¹⁵

To determine whether cross linking has been carried to completion and the final properties are optimal, it is necessary to carry out relevant measurements on the actual object or to measure the glass transition temperature. Different gelling and cure cycles in the customer's manufacturing process could lead to a different degree of cross linking and thus a different glass transition temperature.

**Handling
Precautions**

Araldite® LC 177 and Hardener HY 2954 have been formulated with the objective of being as safe as possible, however, in common with most epoxy resins and hardeners, consistent skin contact with uncured materials may cause irritation of sensitive skins. For this reason contact with the uncured materials should be avoided at all times.

Caution

Vantico Pty Limited products are generally quite harmless to handle provided that certain precautions normally taken when handling chemicals are observed. The uncured materials must not, for instance, be allowed to come into contact with foodstuffs or food utensils, and measures should also be taken to prevent the uncured materials from coming into contact with skin, since people with particularly sensitive skin may be affected. The wearing of impervious rubber or plastic gloves will normally be necessary; likewise the use of eye protection. The skin should be thoroughly cleansed at the end of each working period by washing with soap and warm water. The use of solvents is to be avoided. Disposable paper - not cloth towels - should be used to dry the skin. Adequate ventilation of the working area is recommended. These precautions are described in greater detail in Vantico Pty Limited Publication No. 24264/3/e Hygienic precautions for handling plastic products of Vantico Pty Limited and in the Vantico Pty Limited Material Safety Data sheets for the individual products. These publications are available on request and should be referred to for fuller information.

First Aid

- If the material enters eyes, flood with water for at least 15 minutes, then consult a doctor.
- If skin rashes or allergic responses (such as wheezing, swelling) occur, consult a doctor.
- If swallowed, **DO NOT** induce vomiting. Drink copious amounts of water and contact a doctor or the Poisons Information Centre.

If more specific information on toxicity and safe handling is required, the following publications are available from Vantico on request.

Material Safety Data Sheet

"Epoxy Resins - Instructions for Use, Handling and Disposal"

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