Araldite® LC 177 Resin
Hardener HY 956
(Araldite K83)

Epoxy based, mineral filled casting system for processing and curing at room temperature.

Applications

The construction of foundry patterns, duplicate milling models ancillary tooling, and working models for the ceramics industry.

Processing methods

Casting
Manually or with automatic mixing and dosing equipment

Properties

Low shrinkage on curing
Good thermal conductivity
Non abrasive casting system
Good static and dynamic properties

Product data

(guideline values)

Resin (Containing mineral filler)

Araldite LC 177

Viscosity	at 25°C	mPa.s	19-23000
Specific gravity	at 25°C	g/cm^3	1.7
Flash point		°C	135

As supplied form	Grey-beige coloured 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

Hardener

Hardener HY 956

Viscosity	at 25°C	mPa.s	300-800
Specific gravity	at 25°C	g/cm^3	1.00
Flash point		°C	

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
HY956	Hardener	10	17

Processing data (guideline values)

Mixed System:			
Viscosity at 25°C		mPa.s	4-5000
Pot life	100g	min	40-50
	500g	min	35-45
Minimum Curing cycle	100g		
		16-24h at 25°C or 5-8h at 50°C or 2-3h 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 7 days at 25°C

Specific gravity	g/cm^3		1.58-1.63
Heat distortion temperature	°C		50-55
Tensile strength	Mpa		35-40
Compressive Strength	Mpa		105-115
Coefficient of thermal expansion	$mm/mm°C x10^{-6}$		50-60
Modulus of Elasticity	Mpa		7-8 $x10^3$
Water absorption (specimen: 50x50x4 mm)	ISO 62/80		
10 days at 20°C		% by wt.	0.3-.04

Remarks

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 956 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.

Recommended working procedures as follows:

1. Before Commencing Work:

Make sure the following items are available:

- Clean overalls, rubber gloves, thin cotton inner gloves and goggles or face shields.
- Showers and wash basins with hot and cold running water
- Soap, waterless hand cleaner in the work area.
- Absorbent paper towels or clean rags
- Barrier cream
- Respiratory protective equipment if local exhaust ventilation is inadequate.

*Activate local extraction equipment.
*Apply barrier cream to exposed skin areas such as wrists and neck.

2. During Work:

- If material comes into contact with skin, wipe off **immediately** with paper towels or rags, and wash with plenty of soap and water (use waterless hand cleaner if necessary)
- DO NOT use solvents to wash the skin as this can result in de-fatting of the skin.
- If overalls or inside of gloves become contaminated, remove **immediately** and replace with clean overalls and gloves.
- Reapply barrier cream after washing
- If the material is used in fully confined spaces, a means of removing any fumes must provided. A respirator is used when vapours cannot be removed from the confined space.
- Do NOT eat, drink or smoke when handling these materials in the work area.
- Wash hands with soap and water after finishing work and before eating drinking or using toilet facilities.

*Prevent the formation of aerosols and excess vapours during use of these materials.

3. After Work

- Clean work area thoroughly with use of soap and water.
- Where required properly clean all protective equipment by first wiping with acetone and methyl ethyl ketone and then washing with soap and water.
- Discard damaged or heavily soiled gloves, boots and overalls.
- Ensure overalls are laundered at least weekly

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 Ciba on request.

Material Safety Data Sheet

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