

Araldite[®] Casting Resin System

Araldite [®] CW 2245	Resin	100	pbv	100	pbw
Aradur [®] HY 177	Hardener	26	pbv	16	pbw
Aradur [®] HY 226	Hardener	19	pbv	12	pbw
Hardener LC 234	Hardener	16	pbv	10	pbw
Aradur [®] 943	Hardener	12	pbv	8	pbw

Flame retardant, epoxy based casting system for processing and curing at room temperature or slightly higher temperatures.

Application

Transformers, filters, capacitors etc.

Processing methods

Casting / Impregnating.

Manually or with automatic mixing and dosing equipment.

Key Properties

Low shrinkage on curing

Good thermal conductivity

Good temperature and shock resistance

Flame retardant

*Tested to AS 2431–1981 – Electrical equipment for explosive

atmospheres – report available

Product Data (Guideline Values)

Araldite® CW 2245 CI

Modified epoxy resin, containing mineral filler

Viscosity	at 25°C	mPa.s	18000 - 26000
Specific Gravity	at 25°C		1.65
Flash Point	°C		190 - 200
As Supplied Form	White high viscosity filled 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.		

Aradur® HY 177 CI

Hardener

Viscosity	at 25°C	mPa.s	700 - 1000
Specific Gravity	at 25°C		0.95 – 1.0
Flash Point	°C		> 160
As Supplied Form	Clear amber liquid		

Aradur® HY 226 CI

Hardener

Viscosity	at 25°C	mPa.s	600 - 1100
Specific Gravity	at 25°C		0.96 – 1.01
Flash Point	°C		> 100
As Supplied Form	Clear pale yellow liquid		

Hardener LC 234

Hardener

Viscosity	at 25°C	mPa.s	700 - 1200
Specific Gravity	at 25°C		1.0 – 1.05
Flash point	°C		> 100
As supplied form	Clear pale yellow liquid		

Aradur 943

Hardener

Viscosity	at 25°C	mPa.s	3400 - 5000
Specific Gravity	at 25°C		1.07
Flash Point	°C		> 110
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 nation and/or local authorities.		

Processing Data (Guideline Values)

Property	Araldite CW 2245 CI Aradur HY 177 CI	Araldite CW 2245 CI Aradur HY 226 CI	Araldite CW 2245 CI Hardener LC 234	Araldite CW 2245 CI Aradur 943
Mix Ratio	100 : 16 pbw 100 : 26 pbv	100 : 12 pbw 100 : 19 pbv	100 : 10 pbw 100 : 16 pbv	100 : 8 pbw 100 : 12 pbv
Gel time at 25°C	154 minutes	138 minutes	117 minutes	42 minutes
Pot life at 25°C	115 minutes	105 minutes	85 minutes	30 minutes
Gel time at 60°C	36 minutes	34 minutes	24 minutes	10 minutes
Initial Mix density	1.47	1.51	1.52	1.54
Initial Mix viscosity (mPa.s)	11,600	8,160	11,440	12,560
Peak exotherm (500 ml casting)	60°C after 2 hours	50°C after 2 hours 20 mins	70°C after 2 hours	115°C after 45 minutes

Processing and Storage (Guideline Values)

Mixing

Araldite® CW 2245 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.

Curing

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 gel 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.

Storage Conditions

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.

Conversion to S1 – units

1 mPa.s	=	1 cP
1 N/mm ²	=	10kp/cm ²
1 W(m.k)	=	0.86 kcal/mh° C
1 K ⁻¹	=	1/K 1mm/mm°C

Mechanical and Physical Properties (Guideline Values)

Determined on standard test specimen at 25°C. Cured for 7 days at 22° C

Property	Araldite CW 2245 CI Aradur HY 177	Araldite CW 2245 CI Aradur HY 226	Araldite CW 2245 CI Hardener LC 234	Araldite CW 2245 CI Aradur 943
Shore D after 24 hours at 25 °C	73	85	90	90
Shore D after 6 hours at 60 °C	83	90	95	90
Tg (°C)	51	48	70	74
Water absorption (after 10 days immersion)	0.5 % w/w	0.2 % w/w	0.2 % w/w	0.2 % w/w
Tensile strength (MPa) -ISO 527/95	25.2	30.6	32.8	34.1
Elongation at break (%)	2.4	1.2	1.0	0.9
Coefficient of linear expansion ($1 \times 10^{-6} \text{K}^{-1}$) - DIN 53752/80	84.3	67.4	64.8	53.2
Thermal Conductivity W/mK	0.6-0.65	0.6-0.65	0.6-0.65	0.6-0.65

Industrial hygiene

Mandatory and recommended industrial hygiene procedures should be followed whenever our products are being handled and processed. For additional information please consult the corresponding Safety Data Sheets and the brochure "Hygienic precautions for handling plastics products".

Handling Precautions

Safety precautions at workplace:

protective clothing
gloves
arm protectors
goggles/safety glasses
respirator/dust mask

Yes.
Essential.
Recommended when skin contact likely.
Yes.
Recommended.

Skin protection:
before starting work
after washing

Apply barrier cream to exposed skin.
Apply barrier or nourishing cream.

Cleaning 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.

Clean shop requirements

Cover workbenches, etc. with light coloured paper. Use disposable beakers, etc.

Disposal of spillage

Soak up with sawdust or cotton waste and

Ventilation:
of workshop
of workplace

deposit in plastic-lined bin.

Renew air 3 to 5 times an hour.
Exhaust fans. Operatives should avoid inhaling vapors.

First Aid

Contamination of the **eyes** by resin, hardener or casting 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.

For more detailed information please read Huntsman Advanced Material safety data sheets for the individual products.

Note

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