HUNTSMAN

®Araldite Casting Resin System

Araldite	**CY 221**	**100 pbw**
Aradur	**HY 2966**	**25 pbw**

Casting resin system for processing and curing at room temperature or slightly higher temperatures
High filler addition possibility.

Applications

Encapsulation or potting of low voltage and electronic components

Processing

Casting

Properties

Good heat resistance
Good resistance to atmospheric and chemical degradation
Castings with good crack resistance

Edition: **July 2003**
Replaces edition: February 2003

Product data

(Guideline values)

Modified, low viscous solvent free epoxy resin

Araldite CY 221

Viscosity	at 25°C		mPa s	ca. 450
Specific gravity	at 25°C		g/cm³	1.15
Flash point		ISO 1523	°C	190–200
Epoxy content			Eq/kg	4.05
As supplied form		Clear 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		

Formulated, low viscosity polyamine hardener

Aradur HY 2966

Viscosity (Hoeppler)	at 25°C		mPa s	ca. 500
Specific gravity	at 25°C		g/cm³	0.97
Flash point		ISO 1523	°C	>200
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		

Araldite Colouring Pastes

The colouring paste should normally be added to the resin component and mixed with it until a homogeneous colouration results. Prefilled, highly viscous resin components are best heated to 40-60°C to facilitate uniform dispersion of the colouring paste.

Coloured resin or mixes of several colouring pastes and resins are stable for some considerable time if stored at room temperature.

Product data

(Guideline values)

Fillers

The addition of powdered inorganic fillers such as silica flour, microdol, chalk flour, Alumina, aluminium hydroxide etc., has been found to offer considerable advantages in many applications.

Specifically, the use of such fillers:

- enhance important mechanical and electrical properties
- reduce shrinkage and exothermic temperature rise during gelling and cure
- impart a lower coefficient of thermal expansion
- improve thermal conductivity
- impart a greater elasticity modulus whilst reducing elongation at break

Storage

Store the components in a dry place, in tightly sealed original containers.

Under these conditions, the shelf life will correspond to the expiry date stated on the label.

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.

Due to their tendency of sedimentation, filled components should be stored at a temperature between 15-20°C.

Processing

Aradur HY 2966, together with the very low viscosity Araldite CY 221 produces flexible castings.

The casting mix is best prepared by heating the resin up to 40-50°C before stirring in the hardener. Casting should be stirred and then evacuated.

After the mixture has cooled down to room temperature, Aradur HY 2967 is added. Mix thoroughly and then evacuate the whole mixture once again.
Vapour pressure of the mixture at 60°C amounts <1.333 mbar.

Mix ratio	Araldite CY 221	parts by weight		100
	Aradur HY 2966	parts by weight		25

Processing data (Guideline values)	Initial viscosity (Hoeppler)	mPa s	at 25°C	490
			at 40°C	205
	Time to double initial viscosity (Hoeppler)	min	at 25°C	33
			at 40°C	13
	Pot life to 3000 mPa s	min	at 25°C	68
			at 40°C	37
	Pot life to 15 000 mPa s (Hoeppler)	min	at 25°C	117
			at 40°C	54
	Minimum curing time	h	at 20°C	24-48
		or	at 20°C+60°C	4+4
	Geltime	min.	at 40°C	45
		min.	at 60°C	10
		min.	at 80°C	4

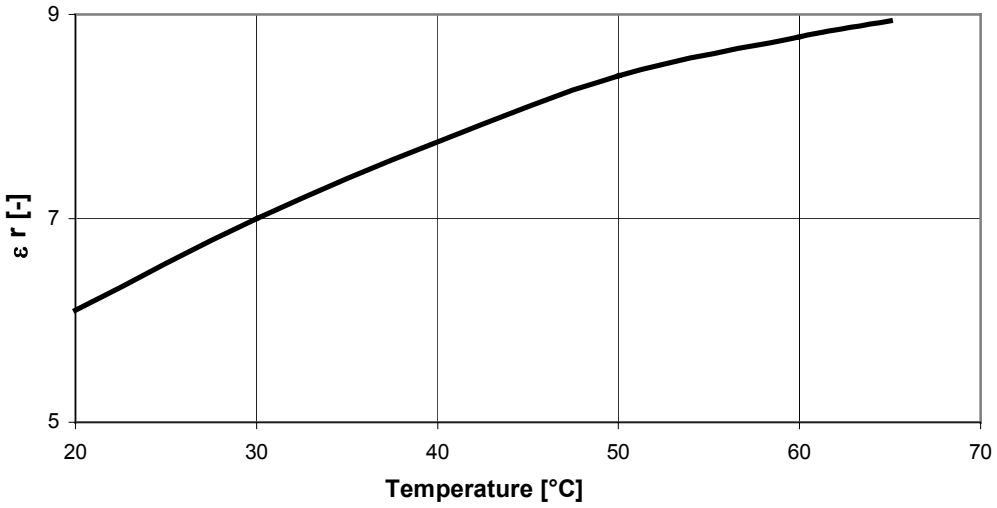
Properties

Guideline values determined on standard test specimens cured for 48 h/20°C

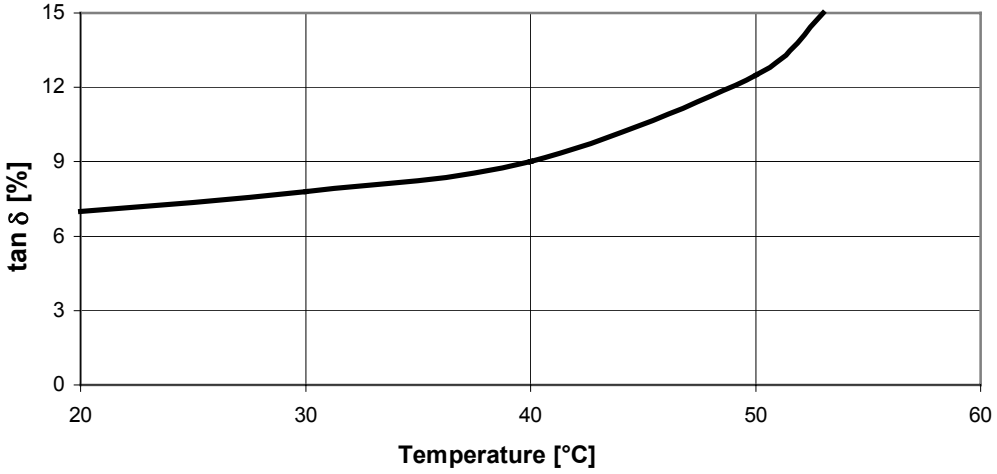
Colour of castings			clear yellow	
Shore D hardness (4 mm plate)	at 25°C	DIN 53 505		25
Tensile strength				
max. tensile stress	at 25°C	ISO 527	MPa	5
elongation at break	at 25°C	ISO 527	%	55
Water absorption				
10 days	at 23°C	ISO 62	%	1.8
30 min	at 100°C	ISO 62	%	1.2
Electrolytic corrosion		DIN 53 489	grade	AN/1
Electric strength				
20 s value for 2 mm plate (50 Hz)	at 23°C	IEC 60243	kV/mm	21

Properties

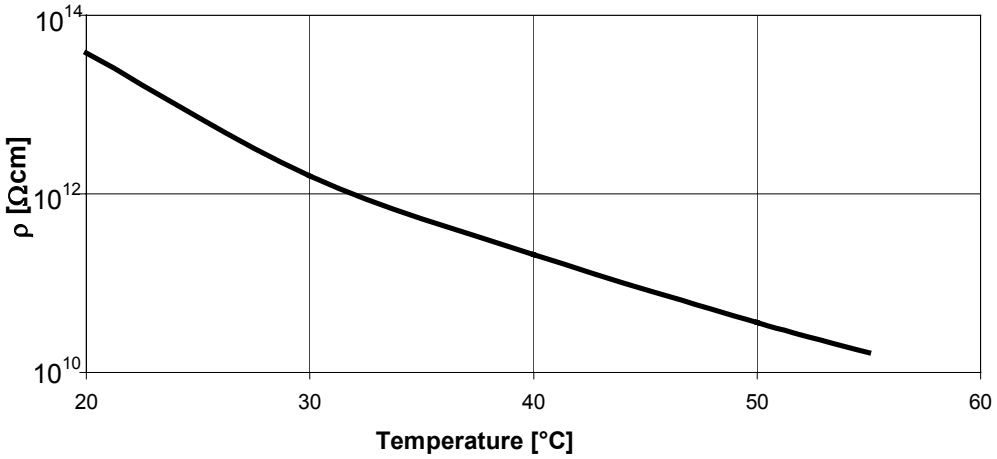
Dielectric constant εr at 50 Hz vs temperature (DIN 53483)



Loss factor tan δ at 50 hz vs temperature (DIN 53483)



Specific volume resistivity ρ vs temperature (DIN 53482)



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 of Huntsman (Publ. No. 24264/e).

Handling precautions

Safety precautions at workplace:	
protective clothing	yes
gloves	essential
arm protectors	recommended when skin contact likely
goggles/safety glasses	yes
respirator/dust mask	no
Skin protection:	
before starting work	Apply barrier cream to exposed skin
after washing	Apply barrier or nourishing cream
Cleansing 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 deposit in plastic-lined bin
Ventilation:	
of workshop	Renew air 3 to 5 times an hour
of workplace	Exhaust fans. Operatives should avoid inhaling vapours.

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.

Anyone taken ill after **inhaling** vapours should be moved out of doors immediately. In all cases of doubt call for medical assistance.