HUNTSMAN

Light Electrical

®Araldite Casting Resin System

Araldite®	**CW 1302 GB**	**100 pbw**
Hardener	**HY 1300 GB**	**11 pbw**

Optimally filled casting system for processing and curing at room temperature or slightly higher temperatures

Applications

Inductive Components
Wound capacitors
Electrical devices working in potentially explosive environment

Processing

Casting

Properties

Good thermal conductivity
Low water absorption
Good long term thermal resistance
Flammability: UL 94 V-0 (3.2 mm)
NF F 16 – 102 classified
Complies with requirements of EN 50014 and EN 50028

Edition: **April 2006**
Replaces edition: November 2004

Product data

(Guideline values)

Modified, solvent free epoxy resin with inorganic filler

Araldite CW 1302 GB

Viscosity	at 25°C		mPa s	ca. 40 000
Specific gravity	at 25°C		g/cm³	1.76
Flash point		DIN 51 758	°C	>200
Filler content			%	66

As supplied form	Filled, high viscous 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, medium viscosity polyamine hardener

Hardener HY 1300 GB

Viscosity	at 25°C		mPa s	ca. 180
Specific gravity	at 25°C		g/cm³	1.0
Flash point		DIN 51 758	°C	>150

As supplied form	Brown 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

The filled resin component should be stirred and homogenized in the original container before use.
The casting mix is best prepared by heating the resin up to 40-50°C before stirring in the hardener. Brief degassing of the mix under 5-10 mbar vacuum improves the mixture homogeneity and enhances the dielectric properties of the castings.

Mix ratio

Araldite CW 1302 GB	100 parts by weight
Hardener HY 1300 GB	11 parts by weight

Processing data (Guideline values)

Initial viscosity (Hoeppler)	mPa s	at 25°C	ca.	10 000
		at 40°C	ca.	3400
Pot life to 15 000 mPa s (Hoeppler)	min	at 25°C	ca.	34
		at 40°C	ca.	28
Geltime (Gelnorm) (ISO 9396)	min	at 25°C		120
		at 40°C		75
		at 60°C		30
Minimum curing times	h	at 25°C		48
		at 40°C		8
		at 60°C		2

Properties

Guideline values determined on standard test specimens cured for 24 h/25°C+6 h/60°C

Colour of castings				beige
Specific gravity	at 25°C	ISO 1675	g/cm^3	1.65
Shore D hardness (4 mm plate)	at 25°C	DIN 53 505		80
Glass transition temperature derived from torsion modulus		ISO 6721	°C	76
Martens deflection temperature		DIN 53 458	°C	58
Relative Temperature Index		IEC 60216	°C	181
Flexural strength				
max. bending stress	at 25°C	ISO 178	MPa	63
surface strain(failure)	at 25°C	ISO 178	%	1.0
Impact strength	at 25°C	ISO 179	kJ/mm^2	4.5
Compressive strength				
max. compressive stress	at 25°C	ISO 604	MPa	103
Tensile strength				
max. tensile stress	at 25°C	ISO/R 527	MPa	30
elongation at break	at 25°C	ISO/R 527	%	0.5
Elastic modulus from tensile test				
at 25°C			MPa	8450
Flammability	UL 94		grade	V-0 (3.2 mm)
	ISO 1210			passed
Railway rolling stock – fire behaviour	NF F 16-102		Class	F 1 / I 2
Water absorption				
1 day	at 23°C	ISO 62	%	0.04
30 min	at 100°C	ISO 62	%	0.22
Coefficient of linear thermal expansion	at 24-46°C	ISO 11359-2	ppm/K	48
	at 46-56°C			80·
Thermal conductivity	at 18°C	ISO 8894-1	W/mK	0.83
Dielectric constant ε_r	at 23°C	IEC 60250		5.5
	at 50°C			6.5
Dissipation factor tan δ	at 23°C	IEC 60250	%	9.3
	at 50°C			17.9
Volume resistivity ρ	at 23°C	IEC 60093	Ω·cm	$5 \cdot 10^{14}$
	at 50°C			$4 \cdot 10^{13}$
Electrolytic corrosion		IEC 60426	grade	A/1.2
Tracking resistance		IEC 60112		CTI>600
Electric strength				
20 sec value (2 mm plates, 50 Hz)	at 23°C	IEC 60243	kV/mm	15
4 kV @ 140 °C		EN 60028	sec	> 300, passed

Thermal endurance profile
(IEC 60216)

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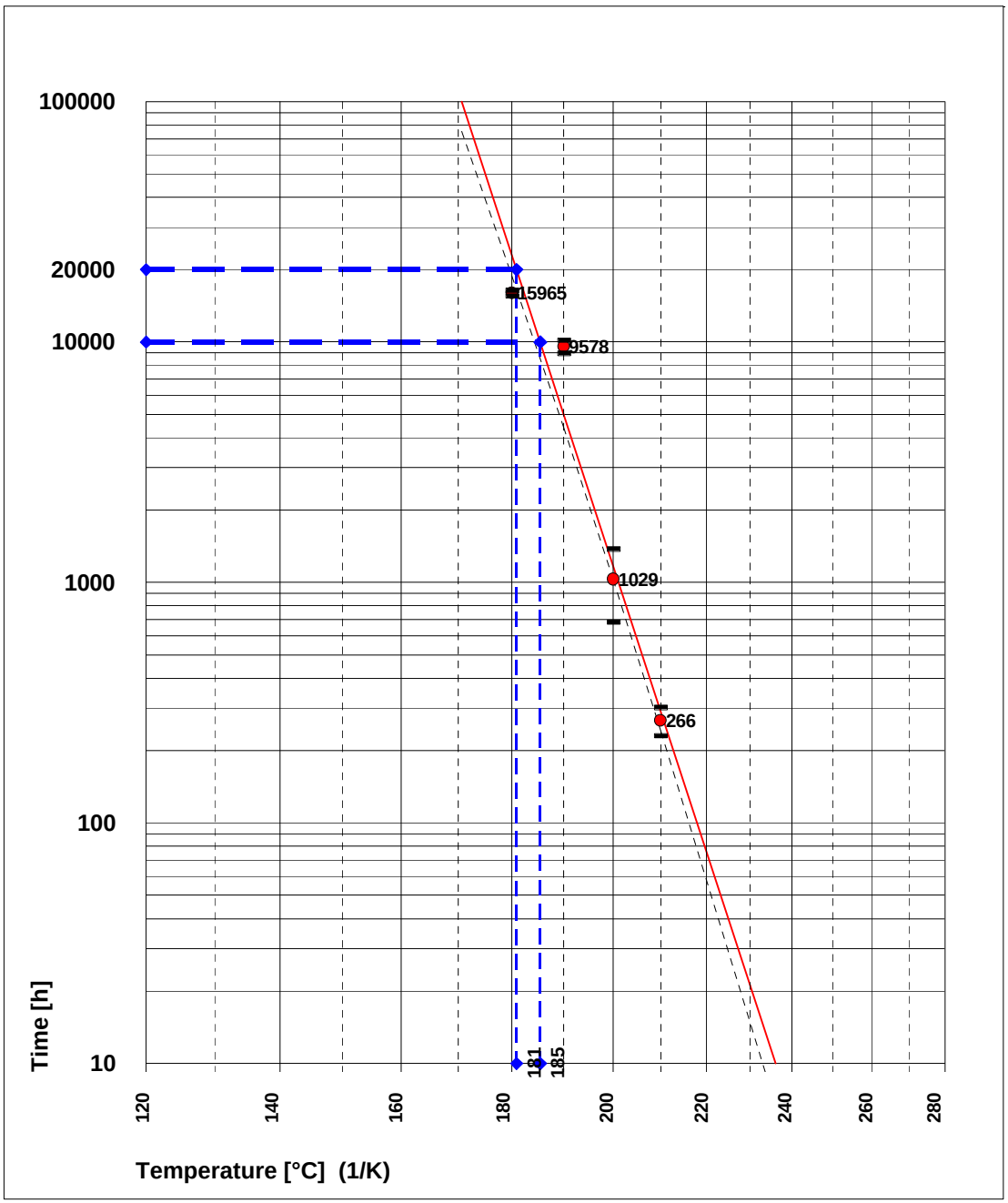
Date : 10.11.2004

Material :	**CW 1302 GB/HY 1300 GB (100/11)**
Investigated property :	Flexural strength (ISO 178)
Selected end point :	50 % of initial v alue (69.3 MPa)
T I g :	**181**
H I C g :	**5**
Statistical test variables :	CHI²= 46.44
	F= 81.98
- - - - - - - :	Lower 95% confidence curv e T C : 180°C
Comments:	



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	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.

Note

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