

Light Electrical

®Araldite Casting Resin System

Araldite® **CW5702** **100 pbw**
Hardener **HY 5703** **30 pbw**

**Optimally filled epoxy system with good impregnation capability
for processing and curing at high temperature**

Ignition coils

Applications

Vacuum casting

Processing

Very good thermal shock resistance
Very good thermal endurance
Excellent impregnation capability

Properties

Edition: **May 2004**
Replaces edition: July 2003

Product data

(Guideline values)

Modified, solvent free epoxy resin containing an inorganic filler

Araldite CW 5702	Viscosity	at 60°C	DIN 53015	mPa s	7000
	Specific gravity	at 25°C	DIN 53217	g/cm ³	1.87
	Flash point		DIN 51 758	°C	>200
	Filler content			%	65

As supplied form	Black, high viscosity 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

Liquid, accelerated anhydride hardener

Hardener HY 5703	Viscosity	at 25°C	DIN 53015	mPa s	70
	Specific gravity	at 25°C	DIN 53217	g/cm ³	1.19
	Flash point		DIN 51 758	°C	160

As supplied form	Clear, yellowish 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.

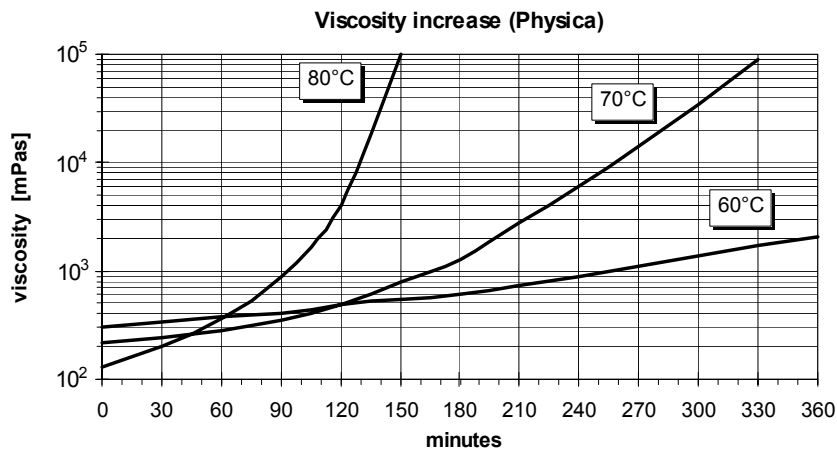
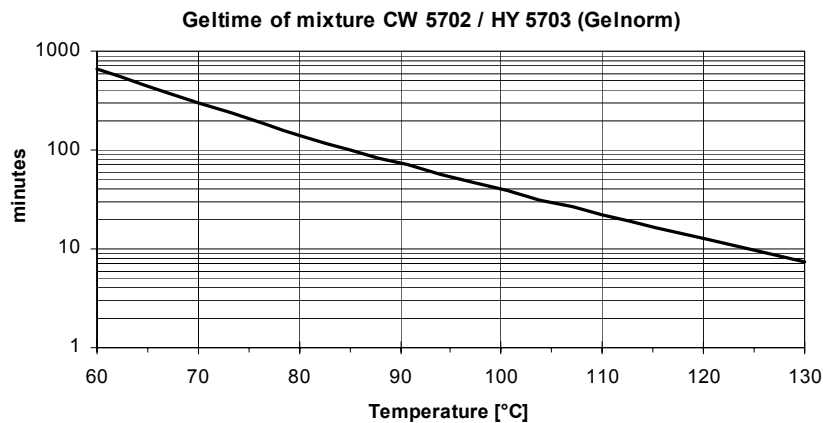
Processing

The filled resin component should be stirred and homogenized in the original container before use. To facilitate stirring and drum emptying the resin can be heated up to 60 to 80°C.

The casting mix is best prepared by heating up and homogenize the resin at 80 to 90°C and the hardener at 30 to 40°C in the component vessels. A brief degassing of both components under a vacuum of 1-3 mbar before metering and mixing enhances the dielectric properties of the castings.

Mix ratio		parts by weight	parts by volume
Araldite CW 5702		100	100
Hardener HY 5703		30	47

Processing data (Guideline values)	Initial viscosity (Physica)	mPa s	at 25°C	
			at 40°C	1500
			at 60°C	300
			at 80°C	140
	Time to double initial viscosity (Physica)	min	at 60°C	190
			at 70°C	110
			at 80°C	50
	Pot life (time to reach 15 000 mPas)	min	at 60°C	480
			at 80°C	130
	Geltime (Gelnorm, c. 20 g RHM)	min	at 70°C	300
			at 80°C	160
			at 90°C	70
	Minimum curing time	h/°C	2.5/90 + 2.5/140	



Properties

Guideline values determined on standard test specimens
cured for 2.5 h/90°C+2.5 h/140°C

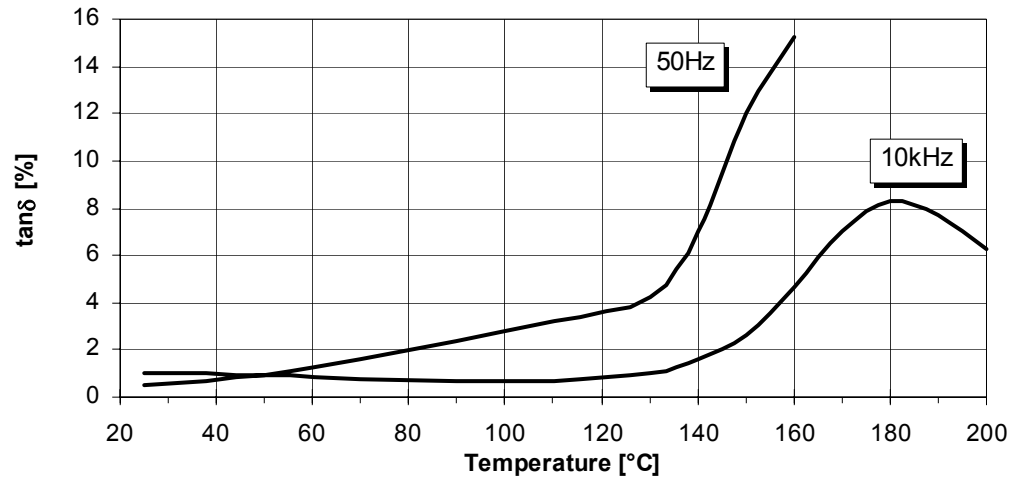
Physical and mechanical properties	Colour of castings			black
	Specific Gravity	DIN 55990	g/cm ³	1.65
	Shore D hardness	DIN 53505	---	90
	Tensile strength	ISO/R 527	MPa	60
	Elongation at break	ISO/R 527	%	1.1
	E modulus	ISO/R 527	MPa	6800
	Flexural strength	ISO 178	MPa	90
	Surface strain	ISO 178	%	1.4
	Flexural modulus	ISO 178	MPa	7800
	Double torsion test	CG 216-0/89		
	Critical stress intensity factor (K _{IC})		MPa m ^{1/2}	1.7
	Specific energy at break (G _{IC})		J/m ²	340
	Martens deflection temperature	DIN 53458	°C	125
	Thermal conductivity	DIN 52612	W/mK	0.65
	Glass transition temperature (DSC)	IEC 1006	°C	140
	Coefficient of linear thermal expansion	DIN 53752	ppmK ⁻¹	40
Water absorption				
10 days at 23°C	ISO 62	%	0.13	
30 min at 100°C	ISO 62	%	0.04	
Electrical properties	Dissipation factor (tanδ, 50Hz)	IEC 250	%	0.5
	Dielectric constant (ε _r , 50Hz)	IEC 250	---	4.4
	Volume resistivity (ρ, 23°C)	IEC 93	Ωcm	40 x 10 ¹⁵
	Dielectric strength (on 2 mm plaques at 23°C)	IEC 243-1	kV/mm	25
	Electrolytic corrosion	IEC 426	grade	A-1
	Tracking resistance with test solution A	IEC 112	---	>600-0.1
	with test solution B	IEC 112	---	>600M-0.1

Properties

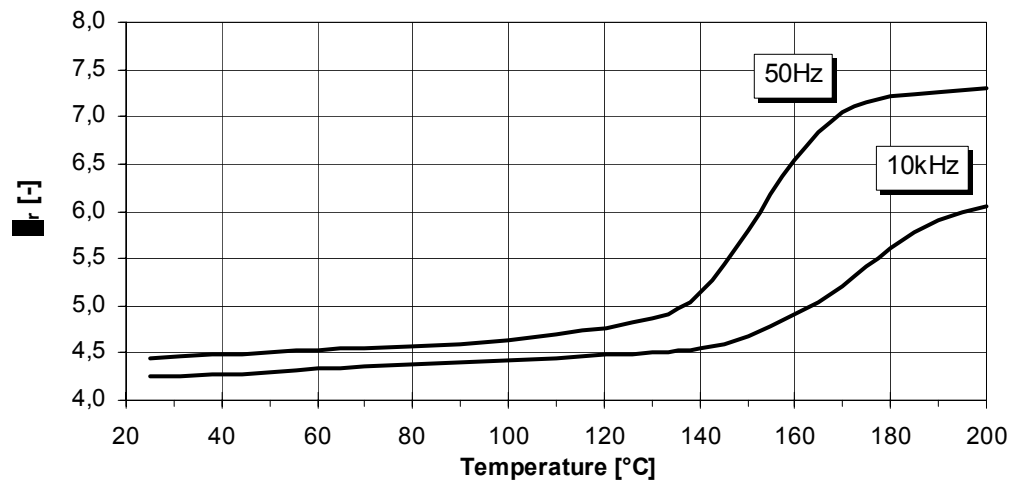
Guideline values determined on standard test specimens
cured for 2.5 h/90°C+2.5 h/140°C

Electrical properties

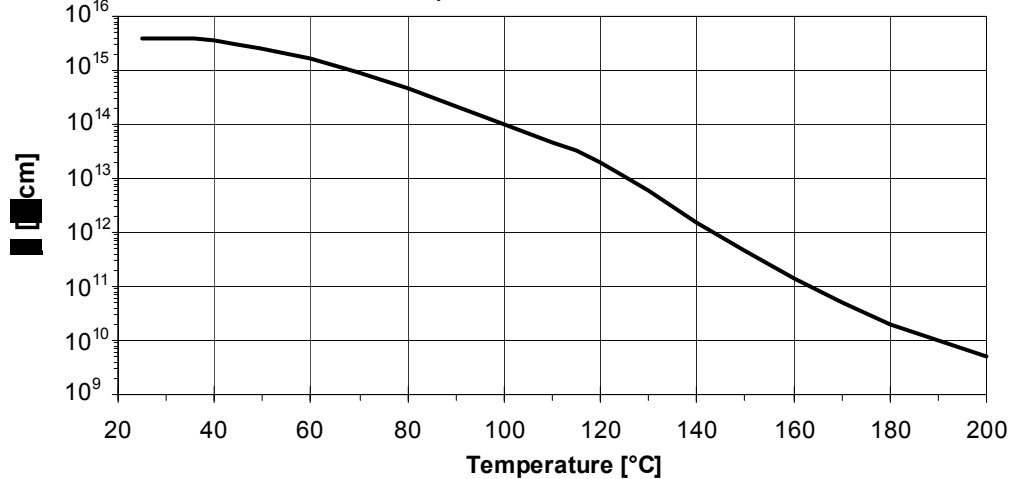
Dissipation factor $\tan\delta$ vs temperature (IEC 250 / DIN 53483)



Dielectric constant ϵ_r vs temperature (IEC 250 / DIN 53483)



Volume resistivity ρ vs temperature (IEC 93 / DIN IEC 93)



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	recommended
Skin protection	
before starting work	Apply barrier cream to exposed skin
after washing	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 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

Araldite® is a registered trademark of Huntsman LLC or an affiliate thereof in one or more countries, but not all countries.

Huntsman LLC

® Registered trademark



All recommendations for use of our products, whether given by us in writing, verbally, or to be implied from results of tests carried out by us are based on the current state of our knowledge. Notwithstanding any such recommendations the Buyer shall remain responsible for satisfying himself that the products as supplied by us are suitable for his intended process or purpose. Since we cannot control the application, use or processing of the products, we cannot accept responsibility therefore. The Buyer shall ensure that the intended use of the products will not infringe any third party's intellectual property rights. We warrant that our products are free from defects in accordance with and subject to our general conditions of supply.