

Araldite[®] CW 2122-1

Aradur[™] HY 2901-1

High Voltage Flame-Retardant Epoxy Encapsulation System

General

Araldite[®] CW 2122 with Aradur[™] HY 2901-1 is an advanced, heat-curing, epoxy system designed for the potting and encapsulation of high-voltage, stress-sensitive electrical and electronic components requiring flame retardancy. Potential end users include relays, voltage regulators, ferrites, modules and sensors.

Features

UL94-VO compliant
High thermal conductivity
Flexible
Excellent heat resistance
Filled encapsulating system
Excellent dielectric properties
Low shrinkage during cure

Benefits

Araldite[®] CW 2122-1 with Aradur[™] HY 2901-1 is a filled system which allows the end-user flexibility in the design of flame retardant modules and sensors. Its low viscosity at slightly elevated temperatures makes it an ideal system for vacuum impregnating. The performance properties of the cured encapsulant offer outstanding protection from harsh environments and temperature cycles from -40°C to 120°C.

Typical Properties*	Araldite® CW 2122-1	
	Viscosity, cPs	30,000 – 50,000
	Density, g/cm ³	1.64 – 1.70
	Flash point, °C	> 137
	As supplied form	Liquid
	Color	Red-brown

Aradur™ HY 2901-1

Viscosity, cPs	2,500 – 6,500
Density, g/cm ³	1.21 – 1.27
Flash point, °C	> 93
As supplied form	Liquid
Color	Beige

* Typical properties are based on Huntsman's test methods. Copies are available upon request.

Packaging & Storage The products described in this instruction sheet should be stored in a dry place and, whenever possible, in the tightly closed original containers. Under these conditions their shelf lives will be one year from date of shipping. Contact Customer Service for packaging information.

Processing Mix using Meter-mix dispensing equipment or manually as follows.

Weigh the desired amount of resin into mixing container whose weight has been tared. If material has been heated, allow to cool to 25±5°C or 77±9°F before continuing. The pot life of mixed material will be shortened considerably if warmed material is used.

Weigh the desired amount of hardener into mixing container with resin. Mix thoroughly by means of mechanical mixer or manual stirring. Check for uniform color as a sign of complete mixing.

Vacuum de airing is recommended to remove any entrapped air from the mixing procedure. To de air most products, 1-2 minutes under full vacuum is recommended for each quart of volume of mixed material. Quickly dispense potting material into cavity or channel to be sealed; be certain not to trap air bubbles as viscosity builds.

To reduce the cure time, the casting is often allowed to gel at room temperature and then post-cured 2-6 hours at 60-80°C. Small castings can be processed and directly cured at slightly higher temperatures (40-60°C.) In case of humid environments (≥75% relative humidity) it is advisable to effect a full cure in an oven at 40-60°C in order to prevent vapor absorption, leading to streaks on the surface of the castings.

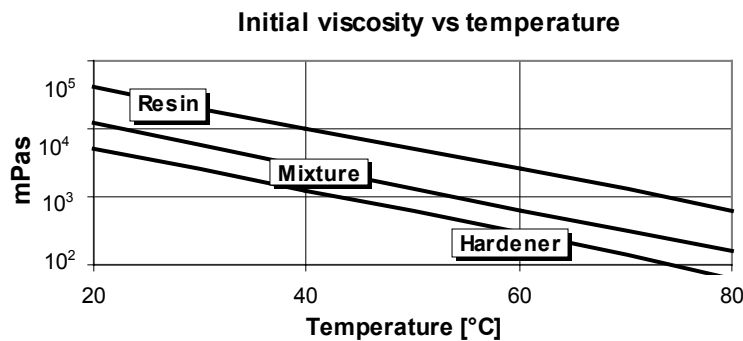
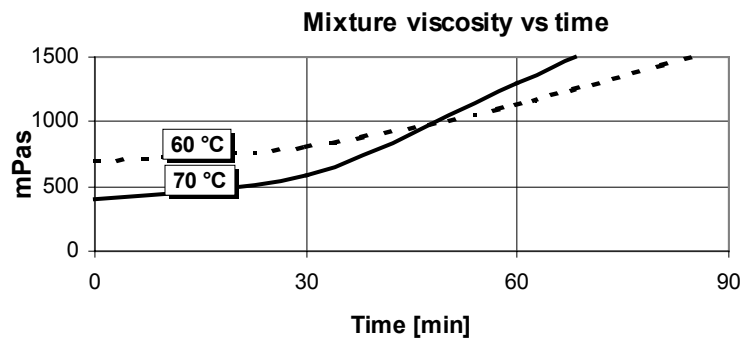
Mix ratios

	Parts by weight	Parts by volume
Araldite® CW 2122-1	100	100
Aradur™ HY 2901-1	100	135

Processing data

(average values)

Initial viscosity, cPs	@ 25°C	9,400
	@ 60°C	630
	@ 70°C	360
Work-Life, hours	@ 25°C	> 8
Time to double initial viscosity, min	@ 60°C	70
	@ 70°C	35
	Pot life to 15,000 mPas, hours	@ 60°C
	@ 70°C	2.75
Minimum cure time, hours/°C		4 / 70 + 6 / 90



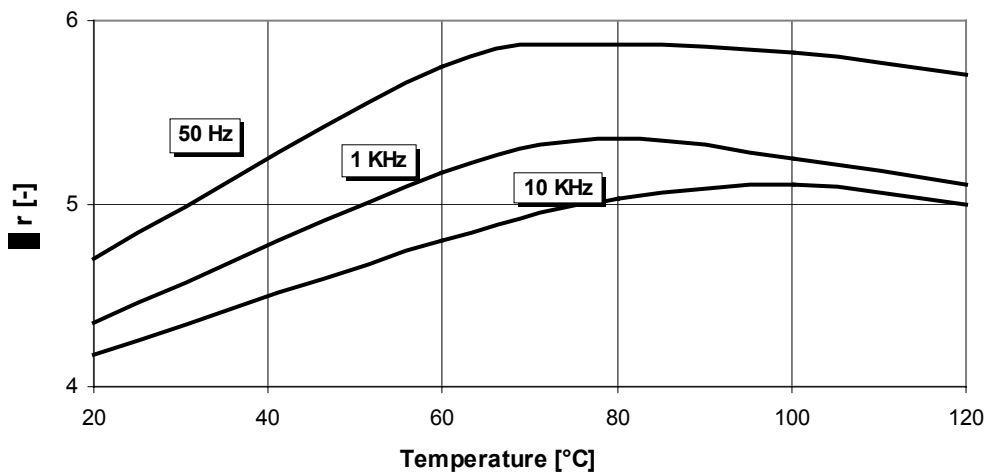
**Physical Properties
(typical values)**

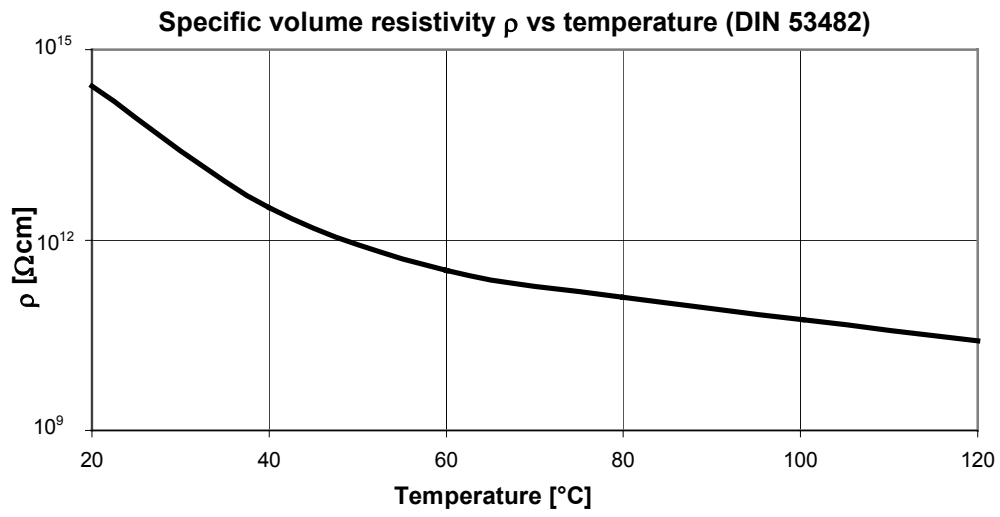
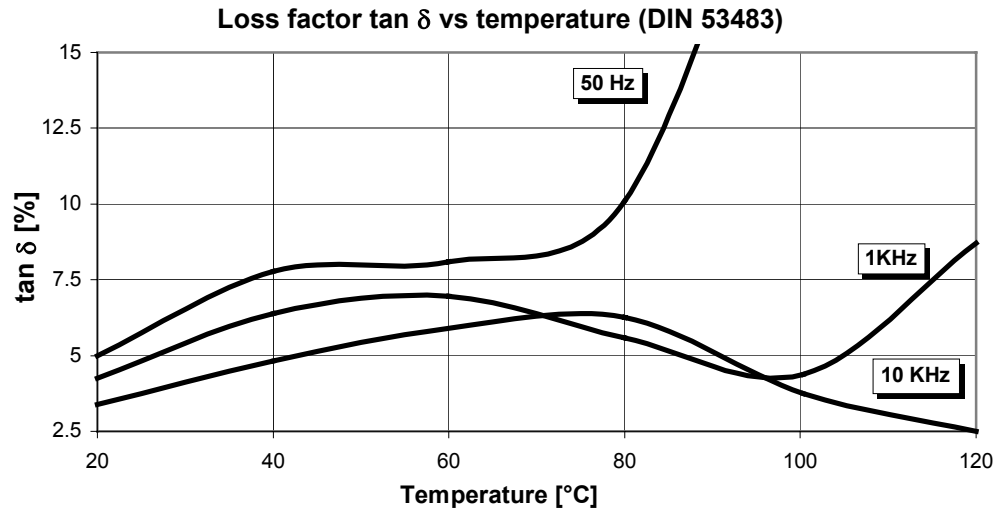
Color of casting	Red Brown
Specific gravity, g/cm ³	1.42
Hardness, Shore D	47
Hardness, Shore A	96
Glass transition temperature, T _g , °C	22
Tensile strength	
Maximum tensile stress @ 25°C, MPa	9
Elongation at break @ 25°C,%	55
Elastic modulus in tension @ 25°C, MPa	90
Flammability	UL 94 grade V-0 (1.6mm)
Water absorption	
1 day @ 23°C, %	0.21
30 min @ 100°C, %	0.42
Coefficient of Thermal Expansion, in/in/ °C	
@ 24-38°C, ppm/K	60 – 80
@ 38-65°C, ppm/K	160 – 175
Thermal Conductivity, W/mK	0.34

**Electrical Properties
(typical values)**

Dielectric Strength, kV/mm	25
Dielectric Constant at 50 Hz	4.7
Dissipation Factor at 50 Hz, %	5
Volume Resistivity, Ω .cm	10 ¹⁴
Electrolytic corrosion	Grade A-1.2
Tracking resistance, CTI	> 600-0.0
Electric strength, 20 s value for 1mm plate (50 Hz) @ 23°C, kV/mm	25

Dielectric constant ϵ_r vs temperature (DIN 53483)





**Handling/Safety
Precautions**

Mandatory and recommended industrial hygiene procedures should be followed whenever our products are being handled and processed. For additional information please consult the corresponding material safety data sheets.

Araldite® CW 2122-1

Warning! Causes skin and eye irritation. May cause allergic skin reaction. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated contact with skin. Wash thoroughly after handling.

Notice! Cancer hazard based on tests with laboratory animals. Overexposure may create cancer risk. Contains crystalline silica. Breathing dust may cause cancer and delayed lung injury.

Aradur™ HY 2901-1

Warning! Causes eye, skin, and respiratory irritations. Avoid contact with eyes, skin, and clothing. Avoid breathing vapor or mist. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling.

First Aid**In case of contact:**

Eyes: Flush with plenty of water for 15 minutes and get prompt medical attention.

Skin: Wash thoroughly with mild soap and water. Remove contaminated clothing and launder before reuse. Discard contaminated shoes and other articles made of leather.

Inhalation: Remove person to fresh air.

Ingestion: Do not induce vomiting. Dilute with plenty of water and contact a physician immediately. Never give anything by mouth to an unconscious person.

Other: Referral to physician is recommended if there is any question about the seriousness of an injury

Important

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Note

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