Technical data sheet

Resin

DOLPHON CB-1107

- **Two parts epoxy potting system.**
- **Room temperature curing.**
- **Very good resistance to thermal shocks.**
- **Very low shrinkage after cure.**
- **Non-abrasive, suitable for use in dispensing machines.**
- **Good thermal conductivity.**
- **Good electrical properties.**
- **High flexibility.**
- **Self-extinguishing, UL94 V0 approved (file QMFZ2.E513702).**

Description
DOLPHON CB-1107 with Reactor RE-2001 is a soft casting epoxy filled system, that meets the requirements of UL94 V0. It is suitable for the protection of electrical and electronic devices and components against moisture and mechanical shocks.

Application
Potting, casting resin for transformers, sensors.

Processing guidelines
This system is easily mixed and poured by hand or dispensing machine, static or dynamic mixer.
In case of slight sedimentation, stir the resin to homogenize it. In case of manual mixing, add the appropriate amount of hardener, slowly stirring the resin with the hardener for some minutes, taking care not to incorporate air, also scraping the walls and the bottom of the vessel to disperse uniformly the two components.
Mixing ratio (resin/hardener):
Weight: 100 / 20
Volume: 100 / 34
When the storage container of the machine is provided with vacuum, the resin could be kept at a value around 5-10 mbar: this operation will improve the dielectric properties of the system and the penetration of the resin in the most critical parts.
The curing time needed to achieve the final hardness depends on the mixed volume, the external temperature and the thickness of the layer. The resin will be firm and tack free after 24 hours at 25°C. 24 to 48 hours are usually long enough.

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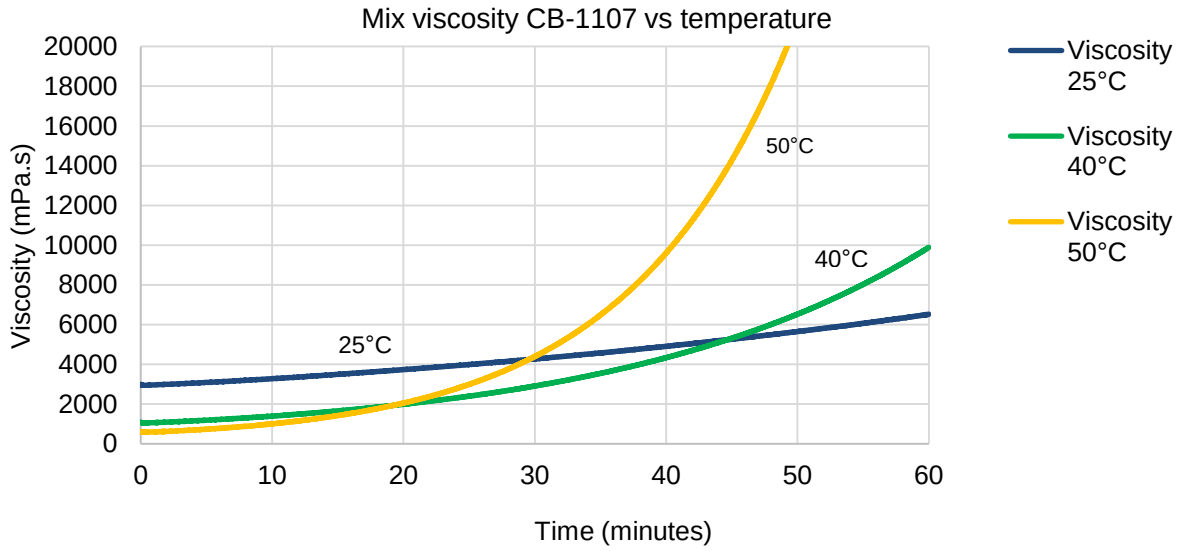
This process can be accelerated by baking at low temperatures, for instance a post curing process at 60°C will complete the polymerization in 6 hours.

Health and safety
Our products are intended for industrial use only. For any further information, please refer to the Safety Data Sheet.

Storage conditions
Resin and hardener: 12 months in original sealed packaging, at maximum 25°C, protected from direct sunlight and heating sources. Like all epoxy resins, the resin A base could show some crystallization; if any, it is needed to slightly heat the product to 40°C and homogenize it, to recover initial properties.

Physical Properties Resin	Test norm	Unit	Value
Colour			Black
Specific gravity @ 25°C		g/l	1610-1670
Viscosity Brookfield @ 25°C	ISO 2555	mPa.s	9000-16000
Physical Properties Hardener	**Test norm**	**Unit**	**Value**
Colour			Dark
Specific gravity @ 25°C		g/l	960-1020
Viscosity Brookfield @ 25°C	ISO 2555	mPa.s	400-900
Physical Properties Mix	**Test norm**	**Unit**	**Value**
Colour			Black
Specific gravity @ 25°C		g/l	1470-1530
Viscosity Brookfield @ 25°C	ISO 2555	mPa.s	2500-3500
Gel time @ 25°C, 100g mix		minutes	170-240



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After curing: Physical Properties	Test norm	Unit	Value
Hardness Shore D @ 25°C	ASTM D-676		40-50
Self-extinguishing	UL94		V0 (6.4mm)

Thermal Properties	Test norm	Unit	Value
Thermal Conductivity	ASTM D7984	W/m.K	0.9
Glass Transition Temperature Tg	TMA	°C	-10
Coef. Thermal expansion < Tg	TMA	µm/µ/°C	38
Coef. Thermal expansion > Tg	TMA	µm/µ/°C	140
Range of use*		°C	-40 / + 155

Mechanical Properties	Test norm	Unit	Value
Tensile strength @ 25°C	ISO R-527	MPa	6-10
Elongation at break @ 25°C	ISO R-527	%	30-40

Chemical Properties	Test norm	Unit	Value
Water absorption 1h @100°C		%	1 - 1.2

Electrical Properties	Test norm	Unit	Value
Dielectric strength	IEC 60243	KV/mm	20-23
Dielectric constant Ɛr	ASTM D-250		5.6 – 6.2
Comparative Tracking Index CTI	IEC 60112	V	≥600

(*) The range of use is a result of our Laboratory experience, but the users are responsible for the effective thermal resistance of the devices to protect according to their type and size.

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