

PRODUCT INFORMATION

Resodip[®] 647 R1
(Resodip[®] 647 R1)

1-component self-extinguishing epoxy resin system

Material:

Resodip® 647 is a dip resin system on the basis of epoxy resin. It is free of solvent and liquid at room temperature. Furthermore it contains an inorganic filling material and is already pre-evacuated.

General characteristics:

High quality electrical characteristics. Excellent adhesion to metallic and non-metallic materials. Uniform covering thickness up to approx. 5 mm wall strength in one working process. No unnecessary drip development on immersion core. Only slight crack occurrence at temperature change. Self extinguishing.

Glass transition temperature: 85 - 90°C

Application:

For the manufacture of non-porous, electrical and mechanical high quality coverings of metallic and non-metallic materials, such as e.g. distributing bus-bars, screening electrodes, glass fibre reinforced materials.

Resodip can be excellently processed by cutting, dividing, milling, grinding, rotating and drilling. Commonly available tools can be used for the metallic processing.

Storage:

The resin must be stored (no storing in the open) at 0 ... 10°C in a storage room and in the original and sealed drums/tanks. When storing at room temperature (18 ... 25°C) the storage stability is vastly shortened. When storing in a cooling room (-20 ... 0°C) the resin is practically storage consistent.

As all filling material bearing resin has the tendency to develop deposits, due to the higher specified weight of the filling, the resin must be stirred prior to use. This must be carried out very carefully, especially if the resin has been stored for a longer period of time.

Processing:

The dip resin is processed at a temperature of 15 - 25°C. The object to be covered must be free of grease, oil and other contaminations. A roughening of the surface ensures a better adhesion. Pre-heating temperature, heat capacity of the immersion core, submersion and immersion velocity are factors which must be considered in order to reach the required layer thickness and a uniform covering, in one working process. Basically a short, practical trial is sufficient to determine the submersion conditions.

The dip resin is filled into a tank which is adjusted to the object to be dipped. The immersion core is pre-heated to 160 - 200°C and kept in the dipping mass for 5 - 45 sec.

Guide values:

- Submersion speed: 400 - 600 mm/min.
- Immersion speed: 10 - 50 mm/min.

Hardening:

Post-hardening is carried out at 160 - 180°C during 4 - 6 hrs, according to size and material of the object to be dipped.

Safety precautions:

Chemical substances, also including the components for synthetic resin, may cause effects to the skin or through inhaling of vapours, eczema or other health damages. Serious affections and in case of doubt a doctor should be consulted. RESO-DIP dip resin has to be regarded as harmful; good aeration of work place, protection of the naked skin, cleanliness at place of work and a careful personal hygiene are necessary.

Further details can be found in the safety data sheets.

Refer to the data sheet and comply with regulations relating to industrial health and waste disposal.

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	Characteristics		Test method	Unit	Value
Resin Resodip 647 R1	Colour		RAL	~3011	Brown red
	Density	25°C	DIN 51757	g/cm ³	1,4 - 1,5
	Initial viscosity	25°C	Brookfield	Pa s	12 - 18
	Shelf life			months	6
Form mass / Form material	Gelling time	100°C	DIN 16945	min	6 - 8
	Hardening				4 - 6h / 160 - 180°C
Electrical Characteristics	Dielectric strength 50 Hz, h = 2mm, 1 min.		IEC 243	kV/mm	18 - 22
	Spec. Surface resistance	20°C	IEC 93	Ω	10 ¹⁴
	Diel. Loss factor tan δ 50 Hz	RT 60°C 70°C 90°C	IEC 250		0,02 - 0,03 0,08 - 0,1 0,3 1,0
	Relative Permittance ε _r 50 Hz	RT	IEC 250		4,4
	Tracking current index		IEC 112		CTI 300 - 400
	Arcing consistency		ASTM D 495	s	100
	Mechanical Characteristics	Tensile strength		ISO 527	N/mm ²
Elongation at tear			ISO 527	%	1,5 - 2,5
Bending consistency			ISO 178	N/mm ²	55 - 60
Impact strength			ISO 179	kJ/m ²	10 - 13
Bending – Flexible Module			ISO 178	N/mm ²	2000 - 3000
Thermal Characteristics	Glass transition temperature T _g		ASTM D648	°C	85 - 90
	Heat form consistency		ISO 75 Method A	°C	≥80
	Thermal conductivity	20 - 100°C	VDE 0304 T1	W/m K	0,29
	Combustibility		UL 94 ASTM D-635 NFC 20-455 ²⁾ NFC 20-455 ³⁾	mm s	V - 0 Self-extinguishing ATB max. 18 AEB max. 7
	Temperature index		IEC 216	°C	105 / 106
	Temperature shock-consistency		IEC 455-2 ⁴⁾	°C	-30 ... +130
		²⁾ Average expansion of the fire zone ³⁾ Average time till self-extinguishing ⁴⁾ In accordance to IEC 455-2 (Screw + Nut M10 x 42)			

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	Characteristics	Test method	Unit	Value
Physical - chemical Characteristics	Cold water acceptance 24 h / H ₂ O (Test A)	ISO 62	Mass-%	0,1 - 0,2
	Boiling water acceptance 1 h / H ₂ O (Test A)	ISO 62	Mass-%	0,5 - 0,7

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Disclaimer:

These properties have been determined by the above shown methods. The data given are valid for standard test specimen only. Unless otherwise specified, all data were measured at ambient temperature on specimen as manufactured and without particular treatment.

The contents of this publication are based on our present experience. They are an indication for application of our products without any liability for ourselves. Notice of legal requirements and existing patent rights has to be taken.

Due to the many application and manufacturing process possibilities, we cannot give any warranty for the technical results in individual cases.

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