

Technical Information

MICARES[®] X1225 R1

Two-component casting resin

TYPE Micares[®] X1225 R1 is a flexible casting resin system based on polyurethane, consisting of resin and hardener. This two component potting compound, designed for use in the electrical engineering and the electronics has especially low viscosity and is cold or thermal curable. Micares[®] X1225 R1 is solvent-free and liquid at ambient temperature. The resin contains no filler and the final system is transparent.

GENERAL PROPERTIES Flexible, transparent synthetic material; Shore hardness A 52 - 60. Adheres well to metals and other materials. Low moisture absorption. Good dielectrical properties.

USE It is easy to process under normal conditions, e.g. ambient temperature and atmospheric pressure.

For electrical and electronic applications in the temperature range of -50°C and max. 120 °C.

SUPPLY Micares[®] X1225 R1 consists of two components (resin and hardener):

- Resin X1225 R1 = **unfilled** PUR - resin formulation
- Hardener P 980 = unfilled modified MDI - hardener

Containers / Weights	Resin X1225 R1	Hardener P 980
200 l - steel drum	180 kg	
25 l - bucket (resin); 20 l - can (hardener)	20 kg	20 kg
630 / 1000 l – container	on request	
Mixing ratio (parts by weight)	2.5	1
Shelf life (months)	12	9
Storage temperature	<40 °C	15 – 35 °C
Toxicity (Swiss classification) / BAG #	4 / 619004	3 / 614463



STORAGE

Both components should be stored in an appropriate room in their originally sealed containers. **Please avoid outside storage.**

The resin is chemically stable. However, before use, the resin must be carefully stirred with a suitable equipment. Stirring with particular care is necessary, when the resin has been stored for a long period of time.

The hardener must be kept away from any exposure to humidity and should always be stored well sealed.

MIXING

The resin and hardener are mixed in the specified proportions at ambient temperature, preferably using automatic dosing and mixing equipment. If the resin has been stored for a long period of time, it is recommended to stir well the complete content of the container and to check the viscosity before the processing is being started.

CASTING

The mixture is applied at ambient temperature (above 18°C). The moulds should be treated with a release agent (e.g. MICAFIL V8055) to facilitate subsequent mould removal. For complicated components, or if optimal electrical properties are specified, casting under vacuum is required.

Components and moulds generally do not need pre-heating for casting with Micares X1225. Reactivity of the casting compound however, can be changed on request, and or by pre-heating the mould to about 40°C to 80°C, e.g. to reduce cycle - time. Accelerator can be used without adverse effects on the final properties of the resin. We can supply a suitable product separately.

**HARDENING
CONDITIONS**

Micares X1225 casting resin is specially designed to cure at ambient temperature. The curing time depends on the resin quantity and temperature. Final curing therefore can be achieved after a few hours or days or in considerably less time at higher temperatures. The self-heating effect of a low exothermal reaction in the resin, depending on the resin quantity, is usually sufficient to bring it to final cure in 10-24 hours.

**SAFETY
PRECAUTIONS**

Many synthetic resin components are found to be liable for causing skin irritation, or otherwise affect health, if placed into a direct contact with the skin, or if their vapours have been inhaled. Adequate ventilation, use of protective clothing, goggles, gloves and chem. resistant shoes; clean working conditions and careful personal hygiene are usually sufficient as accident prevention measures. Medical advice is essential in all severe or doubtful cases. MICARES X1225 R1 resin cannot to be considered a health hazard.

MICARES hardener P980 is a toxic substance, but it has a low vapor pressure at ambient temperature and it may be applied without special equipment, providing that care is taken to avoid possible skin, mucous membranes, or eye contact.

For further details regarding safety, please refer to the safety datasheet.

MICARES^â X1225 R1

	Properties		Test Method	Units	Values
Resin X1225 R1	Colour		RAL		transparent
	Density		DIN 51757	g/cm ³	0.92 – 0.96
	Viscosity as supplied	25°C	Brookfield	Pa s	0.62 – 0.72
Hardener P 980	Density		DIN 51757	g/cm ³	1,20 - 1,24
	Viscosity as supplied	25°C	Brookfield	M Pa s	25 - 50
	Vapour pressure	25°C		10 ⁻⁵ mbar	1,33
Casting resin compound	Mixing ratio (resin / hardener)			parts by weight	2.5 : 1
	Initial viscosity	25°C	Brookfield	Pa s	0.25 – 0.32
	Gel time	23°C	DIN 16945	min	110 - 150
	Hardening conditions			48h / 25°C	or 4h /80°C
	Density		ISO 1183	g/cm ³	1.00 - 1,05
Electrical properties	Dielectric strength 50 Hz, h = 2mm	20 s	IEC 243	kV/mm	16 - 19
	Spec. surface resistance	20°C	IEC 93	Ω	10 ¹⁴
	Comparative tracking index		IEC 112		CTI 600
	Dissipation factor tan δ 50 Hz	23°C 60°C	IEC 250		0,20 0,06
	Relative permittivity ε _r 50 Hz	23°C	IEC 250		5.5
Mechanical properties	Tensile strength		ISO 527	N/mm ²	2.0 – 2.5
	E-modulus		ISO 527	N/mm ²	4.0
	Elongation at break		ISO 527	%	85
Physical properties	Hardness, Shore A	25°C	DIN 53505		52 - 60
	Cold water absorption 24 h/H ₂ O	23°C	ISO 62	Wt-%	0.13
	Linear shrinkage			%	1.0 – 1.5

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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