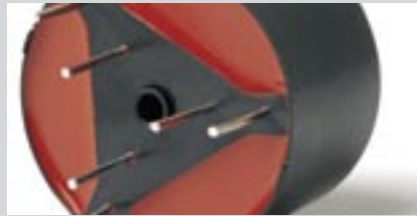
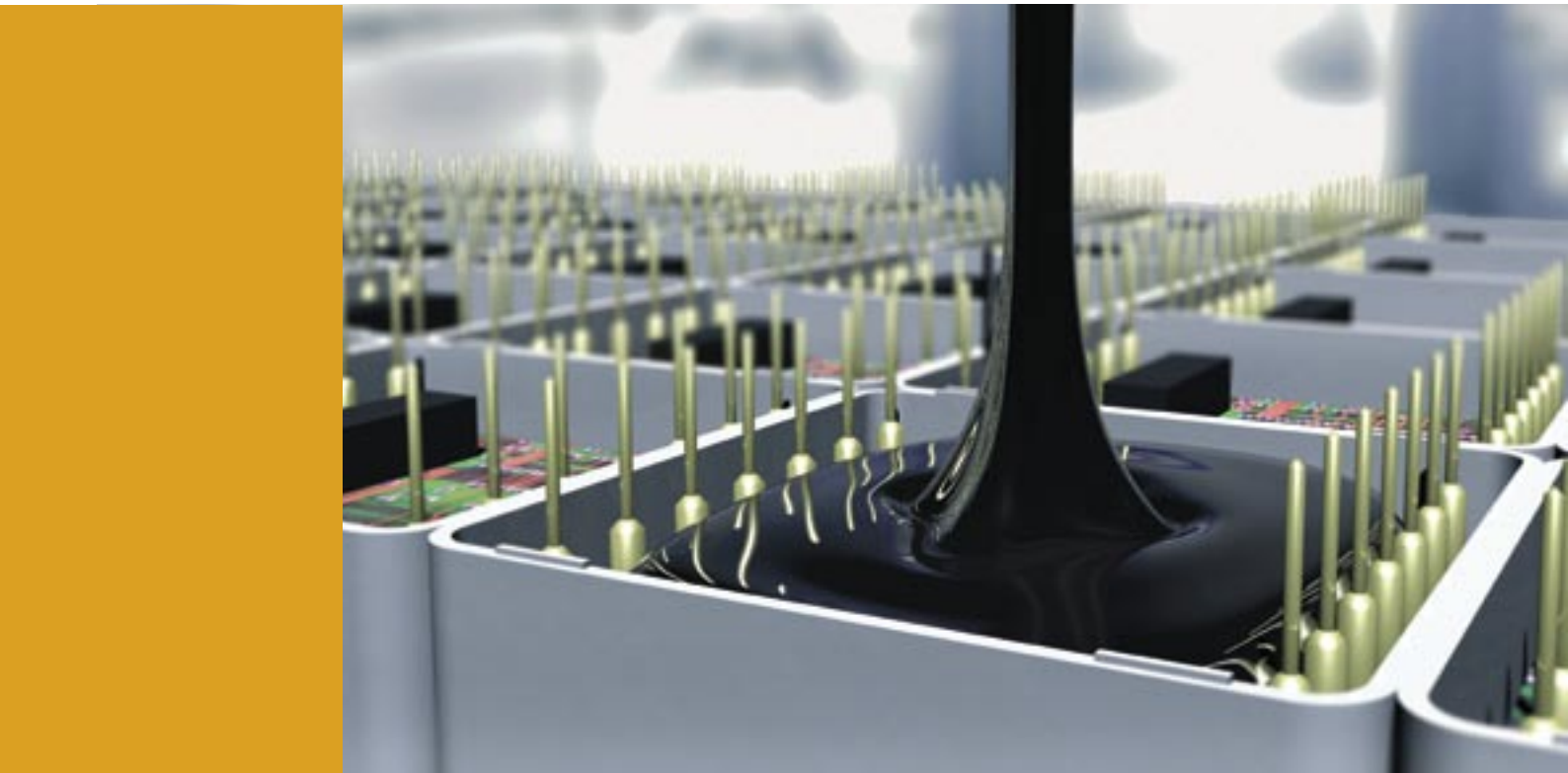


MICARES® – Polyurethane Casting Compounds

Just the Formulation You Need for Your Casting Solution



ABB

Innovative Solution for Protecting Your Products

Micafil Combines Electronics with Chemistry

A wealth of creative ideas and expertise has made Micafil the preferred partner of the electrical industry for more than 90 years. Customer satisfaction is our foremost goal. We forge long-term, trusting partnerships and respond to customers' specific needs. This is a solid foundation for optimum total solutions.



Control unit for automotive electronics



Instrument transformer 12 kV

High-Tech Versatility

Enclosures and insulation for electronic components have tough demands to meet in terms of moisture and other environmental conditions as well as mechanical protection.

Micafil casting compounds made of polyurethane have an excellent track record and are well-established as indispensable and easy-to-process materials. With their versatility and high tech adaptability, they are used in virtually all segments of the solid electrical insulation industry worldwide.

Vast Expertise for Offering Optimum Solutions

Even the most demanding customer requests rarely throw us off. Thanks to our formulation- and processing know-how, our customers can benefit from our years of technological experience in insulation casting resins. The product undergoes a series of different tests at customers and at Micafil to assure full compliance with all stipulated requirements.

A Comprehensive Range

MICARES® casting compounds are used in the energy technology and electronics industries by renowned component manufacturers such as Alstom, Arcotronics, Bosch, Piffner, Schaffner, etc.

- We offer a broad range of high-quality 2-component casting systems (including expanding encapsulating compounds).
- You can choose between standard products and customized system solutions.
- You benefit from our long-term experience in formulation as well as our processing expertise and infrastructure (from the test stage to series production).



MICARES®

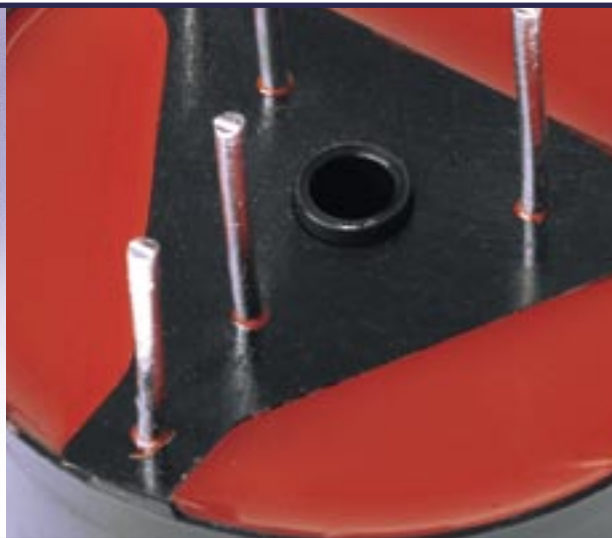
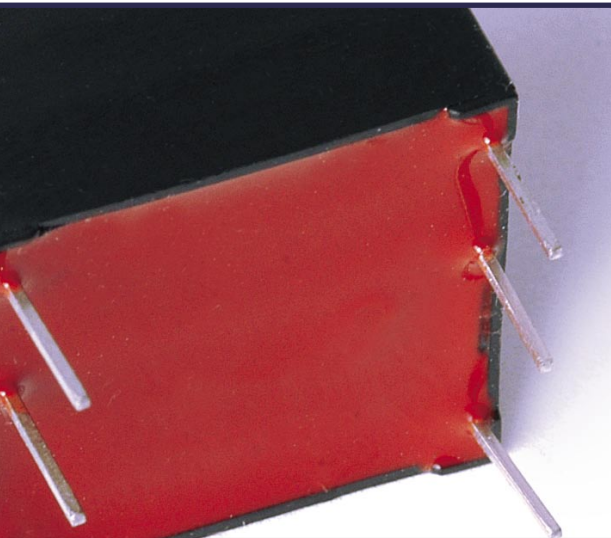
The Right Formulation for Electronic Applications

Possibilities of Use

- Main filters
- Capacitors
- HF reactors
- Sensors, proximity switches
- Relays
- Small transformers
- Control electronics, modules
- Solenoids, etc.

Optimum Product Characteristics

- Ease of processing
- Low viscosity
- Cold or hot curing
- Fast curing
- Minimal exothermia
- Casting compound ranging from soft to tough and resilient
- Minimal shrinkage pressure
- Very good crack resistance (even under changing thermal loads)
- Flame retardant/self-extinguishing systems and expanding insulation foams



MICARES®

The Right Formulation for Power Technology Applications

Possibilities of Use

- Current and voltage transformers
- Power capacitors
- Switch parts
- Transformers
- Cable couplers, etc.

Optimum Product Characteristics

- Low processing viscosity
- Processing with short mold occupation times
- Minimal exothermia
- Good dimensional stability on component
- Excellent adhesion to nearly all base materials
- Very good electrical insulation properties
- Compressible molded material with minimal density



MICARES®

Typical Technical Characteristics

System	Standard	Unit	Resin Hardener	MICARES	MICARES	MICARES	MICARES	MICARES	MICARES	MICARES	MICARES	MICARES	MICARES	MICARES	MICARES
				700 P978	720 P978	730R1 P978	730R6 P978	751 P978	850 P978	730-9051 P983	X1080R14 P978	X1087 P978	X1118 P978	X1243 P983	X1269 P978

Characteristics of the components

Mix ratio		[wt-%]		2:1	2.5:1	6:1	2.5:1	5:1	4:1	9:1	3.5:1	5:1	8:1	1:2	4:1
Resin viscosity	Brookfield	[Pa s], 25 °C		4–8	3–6	3–7	0.7–1.0	9–18	10–15	6–9	10–20	2.5–4.5	20–40	4–6	10–11
Hardener viscosity	Brookfield	[mPa s], 25 °C		150–250	150–250	150–250	150–250	150–250	150–250	80–140	150–250	150–250	150–250	80–150	150–250
Initial viscosity	Brookfield	[Pa s], 25 °C		2.5–3	1.2–2.2	2.5–3.0	0.35–0.5	3.0–3.5	1.0–2.0	2.8–4.2	2.5–3.0	1.5–2.5	6.5–7.5	0.3–0.5	3–3.5
Gel point (*)	DIN 16945	[min]		30–80	60–100	240–360	40–60	180–300	240–360	45–90	10–20	90–130	180–230	4–6	10–12
Curing time	Reference	[h/°C]		–	–	40/25 or 7/80	40/25 or 7/80	48/25 or 7/80	24/100 or 8/120	72/25 or 7/100	24/25 or 4/80	24/25 or 7/80	24/25 or 4/80	12/120 or 7/160	24/25 or 4/80
	200g			7/120	7/120	7/80	7/80	7/80	8/120	7/100	4/80	7/80	4/80	7/160	4/80

Characteristics of the molded materials

Glass transition temperature	IEC 1006	[°C]		120–135	95–105	25–35	35–40	55–65	70–90	<(-50 °C)	20–30	5–15	30–35	165	55–65
Density	ISO 1183	[g/cm³]		1.50–1.55	1.50–1.60	1.70–1.80	1.3	1.7–1.8	1.60–1.65	1.35–1.40	0.30–0.50	1.37	2.1	1.38	1.55
Dielectric strength	IEC 243 (20 s., 50 Hz) 2mm plates	[kV/mm]		24	24	18	18	18	20	23	8	18	10.5	20–24	20–24
Volume resistivity	IEC 93	[Ω cm]		1.0 x 10 ¹⁴	1.0 x 10 ¹⁴	1.0 x 10 ¹⁴	1.0 x 10 ¹⁵	1.0 x 10 ¹⁵	1.0 x 10 ¹⁵	1.0 x 10 ¹⁵	1.2 x 10 ¹³	1.7 x 10 ¹⁴	10 ¹³	5 x 10 ¹⁵	3 x 10 ¹³
Dissipation factor	IEC 250	tan δ		0.01	0.04	0.03	0.016	0.01	0.01	0.01	0.02	0.08	0.03	0.01	0.01
Coefficient of thermal Expansion	VSM 77110	[10 ⁻⁶ /K] 20–100 °C		35–45	35–45	100–120	110–130	90–110	40–50	120–180	100–165	120–150	80–100	35–45	40–50
Thermal conductivity	VDE 0304T1	[W/m·K] 20–100 °C		0.60–0.70	0.40–0.50	0.50–0.70	0.25–0.30	0.60–0.70	0.45–0.48	0.40–0.45	0.20–0.25	0.45	1.1	0.5	0.5–0.53
Shore hardness	DIN 53505	[A/D] 25 °C		D-90	D-88	D-75	D-65	D-80	D-80	A-50	D-60	D-45	D-80	D-89	D-80
Tensile strength	ISO 527	[N/mm²]		50–60	50–60	15–25	20–25	40–45	50–60	1.0–1.5	8–10	5.5	25–30	45–55	37–42
Elongation at break	ISO 527	[%]		1.5–2.0	1.5–3.0	20	55–65	2.0–3.0	1.5–2.5	90–100	1.5–2.5	45	8	1.1–1.3	1.0–1.5
Thermal class	IEC 85	–		B	B	B	B	B	F	B	E(**)	B(**)	B	F	B(**)
Applications				□	□	■	■□	□	□	■	■	■	■	■	■

(*) The indicated gel points apply to the standard versions. Gel time can be adjusted according customer needs

(**) Self-extinguishing; listed according to UL94-VO

□ Power technology applications

■ Electronic applications

All the information in this publication corresponds to our current state of knowledge and gives an unbinding indication of possible applications for our products. We cannot guarantee the technical outcome in individual cases owing to the diversity of possible application processes and processing methods.



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