

Thermal Conductivity

Resin 8503/30N (ex FR 22) + Hardener 8901 (ex 1001)

- 2-components polyurethane casting resin
- solvent-free system and electrically insulating
- very high thermal conductivity
- no metallic fillers
- excellent adhesive properties
- no halogenated flame-retardants
- ideal for heat-reduction of winding goods, electric motors, accumulators, and high-performance components
- TIP: Design variations of effective cooling elements, good combination with Kisling's LED-casting resins

Product specification:

Mixing ratio (weight):	Resin 8503/30N	100 parts
	Hardener 8901	8 parts
Viscosity at 22°C:	Resin 8503/30N	45'000 – 60'000 mPa·s
(DIN 53019-1;	Hardener 8901	160 – 240 mPa·s
Plate/Plate; 10 rpm)	Mixing viscosity	8'500 – 12'500 mPa·s
Density at 22°C:	Resin 8503/30N	2.45 – 2.55 g/cm ³
(DIN EN ISO 2811-1)	Hardener 8901	1.20 – 1.25 g/cm ³
Colour:		Nature (beige)
Pot life:		
(Triplification of the initial viscosity)		25 – 35 minutes
Curing time at 22°C:		16 – 30 hours
Final hardness at 22°C		10 – 14 days

Physical properties:

Shore-Hardness: (DIN EN ISO 868)		D 50 – 60
Thermal conductivity: (TMA; ISO 11359)		1.5 W/(m·K)
Glass transition temperature: (TMA; ISO 11359)		10 °C
Coefficient of expansion: (TMA; ISO 11359)	< Tg > Tg	72.5 ppm/K 141.7 ppm/K
E-Modulus: (ISO 527-2)		65 N/mm ²
Tensile Strength: (ISO 527-2)		4 N/mm ²
Elongation at break: (ISO 527-2)		25 %
Shrinkage after curing:		<1 %
Water absorption: (30 days at 23°C)		0.2 %
Operating temperature:		-50°C up to +160°C
Flammability classification: (UL 94)		V-0 in 4.0 mm

Electrical properties:

Dielectric strength: (IEC 60243-1, VDE 0303, TI.2)		28 kV/mm
Volume resistance: (IEC 60243-1, VDE 0303, TI.30)	23°C/ 50% r.H.	10 ¹⁵ Ω·cm
Surface resistance: (IEC 60243-1, VDE 0303, TI.30)	23°C/ 50% r.H.	10 ¹⁶ Ω
Dielectric constant (ε _r) at 23°C: (IEC 60250, VDE 0303, TI.4)	at 50 Hz	5.6
	at 1 KHz	4.5
	at 1 MHz	3.9
Dielectric dissipation factor (tan δ): (IEC 60250, VDE 0303, TI.4)	at 50 Hz, 23 °C	0.08
Comparative Tracking Index (CTI): (IEC 60112, VDE 0303, TI.1)		600

Shelf life: 6 months in sealed original containers when stored in dry conditions (15°C to 25°C).

Packaging: Resin and hardener are offered in separate packaging units.

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