

Description

The product from multicomp-Pro is a low viscosity, semi-rigid polyurethane resin system exhibiting high electrical strength, toughness and adhesion. It has been designed for surface and subsea electrical and electronic units, encapsulation, moulding, bend restrictors and connectors.

It has high electrical insulating characteristics, low viscosity, low water absorption and high resistance to seawater and low temperature flexibility

Properties	Result	Unit
Water absorption (24 hours @ 23°C)	0.09	%
Water absorption (168 hours @ 23.C)	0.3	%
Flame retardant	No	
Hardness	85	Shore A
Tensile strength	10	MPa
Elongation at break	200	%
Compressive strength	Flexible	MPa
Thermal conductivity	0.22	W/m.k
Coefficient of thermal expansion	75 – 100	ppm/°C
Operating temperature range	-60 to +120	°C (application & geometry dependent)
Maximum service temperature	130	°C (application & geometry dependent)
Volume Resistivity	3 x 10 ¹⁵	ohm.cm
Surface Resistivity	2 x 10 ¹⁴	ohm
Electric strength	25	kV/mm
Dielectric constant	3.1	@ 100 Hz
Dielectric constant	3.0	@ 1 kHz
Dielectric constant	3.7	@ 10 kHz
Dissipation factor	0.023	1 MHz

Physical Data (approx. – values)	Resin	Hardener	Mixed
Colour	Black	Brown	Black
Specific Gravity	1.17	1.22	1.18
Viscosity (mPas) @ 25°C	9000	100	2500

Mix ratio by weight 3.64:1

Mix ratio by volume 3.78:1

Cure Schedule (150g)

Temperature	Working Life	Gel Time	Light Handling	Full Cure	Post Cure
	(minutes)	(minutes)	(hours)	(hours)	(hours)
*RT	10	18	24	48	76
60°C	-	-	2	4	8
80°C	-	-	1	2	4

*RT is defined as 20-25°C

The above are typical values and will vary depending on the cured mass and application. Hotter temperatures may be used for faster cure but will result in higher post cure shrinkage and higher cure exotherm. Experimentation and testing are suggested to avoid side effects. For maximum properties a post cure may be required – Contact our technical service department for advice.

Approvals

UL94 V-0	No
REACH (SVHC concentration)	Refer to SDS

Mixing Instructions

Twinpacks are pre-weighed resin and hardener components contained in a tough flexible film, separated by a removable clip and rail.

Once the clip and rail are removed the resin and hardener is thoroughly mixed within the bag and is immediately ready for use. Mixing will normally take ~ 2 minutes due to the viscosity; but pay special attention to the corners.

Twinpacks are ideal for small to medium production runs, prototyping and on-site or field use.

Cleaning

All equipment contaminated with material should be cleaned before the material has hardened.

Use a suitable non-flammable, solvent cleaning agent.

Storage and Shelf Life

12 months @ 25°C

Bulk containers should be inverted every two to three weeks to reduce the accumulation of the fillers on the bottom of the containers.

Isocyanates are sensitive to moisture and should be kept in their original container or in a volume tank under dry nitrogen blanketing.

Many isocyanates are prone to dimerization, the formation of a white precipitate. Products with minor amounts of this precipitate normally cure to full properties.

Storage at 20 ±5°C (60°F to 86°F) is recommended to ensure full shelf life.

Health and Safety

MP000430 health and safety data or our technical service department for individual/specific advice.

Part Number Table

Description	Part Number
Polyurethane Composite, Black, Twinpack, 250g	MP000430

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