

**RoHS
Compliant**

Description

The product from multicomp-Pro is a low viscosity, fast curing polyurethane resin system. It has been designed for encapsulating, potting, moulding and casting

It has high electrical insulating characteristics, low viscosity, convenient mix ratio and does not contain halogens or heavy metals.

Properties	Result	Unit
Peak Exotherm	104	°C
Shrinkage	0.5	%
Water absorption (24hrs @ 23°C)	0.12	%
Water absorption (168hrs @ 23°C)	0.37	%
Flame retardant	Yes	Not certified
Hardness	80	Shore D
Tensile Strength	40	MPa
Compressive strength	110	MPa
Thermal conductivity	0.8	W/m. K
Co-efficient of thermal expansion	60 - 80	ppm/°C
Operating temperature range	-40 to +140	°C (application & geometry dependent)
Short term exposure limit	180	°C (application & geometry dependent)
Volume Resistivity	1.6×13^{12}	ohm.cm
Surface Resistivity	1.6×13^{10}	ohm
Electric strength	19	kV/mm
Dielectric constant	4.2	100 Hz
Dielectric constant	3.9	1 kHz
Dielectric constant	3.8	10 kHz
Tg	-20	°C

Physical Data (approx. – values)	Resin	Hardener	Mixed
Colour	Black	Brown	Black
Specific Gravity	1.56	1.24	1.48
Viscosity (mPas) @ 25°C	8000	200	3000

Mix ratio by weight 3.83:1

Mix ratio by volume 3.0:1

Cure Schedule (150g)

Temperature	Working Life (minutes)	Gel Time (minutes)	Light Handling (hours)	Full Cure (hours)
RT*	3	5-7	16	168
40°C	-		4	16
60°C	-		2	6

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*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

Chemical Resistance

	Duration	Weight increase (%)	Hardness	Colour Change	Swelling
Engine Oil @ 80°C	1 week	0.065	D80	None	None
	2 weeks	-0.049	D77	None	None
	4 weeks	-0.023	D77	None	None
	10 weeks	0.113	D77	None	None
Brakes Fluid @ 80°C	1 week	1.28	D75	Mottled surface	None
	2 weeks	1.99	D74	Mottled surface	None
	4 weeks	2.68	D74	Mottled surface	None
	10 weeks	4.45	D70	Mottled surface	None
Battery Acid @ 25°C	1 week	0.16	D78	None	None
	2 weeks	0.29	D78	None	None
	4 weeks	0.40	D78	None	None
	10 weeks	0.74	D78	None	None
Diesel @ 25°C	1 week	0.023	D81	None	None
	2 weeks	0.044	D80	None	None
	4 weeks	0.118	D80	None	None
	10 weeks	0.206	D80	None	None
Petrol @ 25°C	1 week	0.009	D77	None	None
	2 weeks	0.033	D77	None	None
	4 weeks	0.118	D77	None	None
	10 weeks	0.242	D77	None	None

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

MP000432 health and safety data or our technical service department for individual/specific advice.

Part Number Table

Description	Part Number
Polyurethane Composite, Black, Twinpack, 250g	MP000432

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