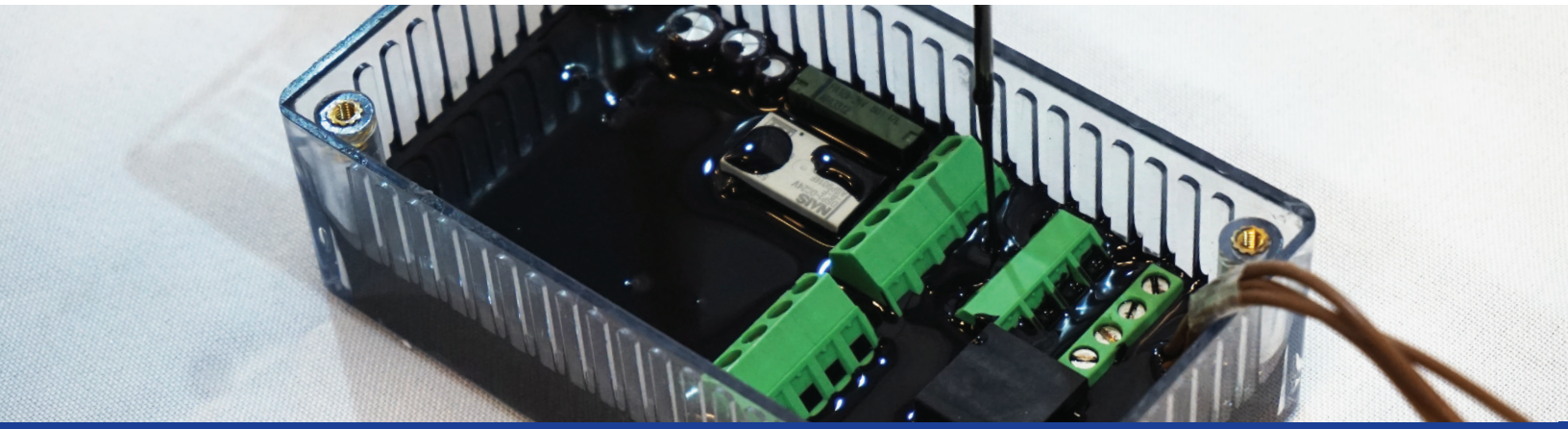
Polyurethane (PU) Potting and Encapsulating Compounds



Ideal potting choice in challenging environments

Features and Benefits:

- 2:1 mix ratio
- Low mixed viscosity
- Exceptional salt water resistance
- Superior physical and shock resistance
- Excellent dielectric properties
- Wide range of hardness from flexible to rigid
- Resistant to aggressive thermal cycling

Applications:

- Potting and encapsulating of delicate printed circuit boards (PCBs) and electronic devices
- Marine applications such as deep-water oil drilling
- Ideal for under-water cable jointing

Three types of PU potting compounds are available:

8800 (Black Flexible)

A cost-effective option for flexible potting applications.

- Excellent flexibility at low temperatures
- 5-7 minute working time
- 24 hour cure at room temperature
- Constant service temperature of -50 to 120 °C

8810 (Black Rigid)

A general-purpose, rigid potting compound that provides excellent physical protection to delicate electronic components.

- Hardness 80 Shore D
- 45 minute working time
- 24 hour cure at room temperature
- Constant service temperature of -50 to 120 °C
- Low exotherm

8820 (High Temperature)

A general purpose, rigid potting compound that offers exceptional chemical resistance and high service temperature.

- Hardness 73 Shore D
- 15 minute working time
- 48 hour cure at room temperature
- Excellent chemical resistance
- Constant service temperature of -50 to 150 °C
- Low exotherm

Polyurethane Potting Compound Comparison Chart

	8800	8810	8820
UNCURED PROPERTIES			
Mix ratio by volume	2:1	2:1	2:1
CURED PROPERTIES			
Application Parameters			
Working life	5–7 min	45 min	15 min
Full cure @22 °C (72 °F)	24 h	24 h	48 h
Full cure @65 °C (149 °F)	30 min	1 h	2 h
Full cure @80 °C (176 °F)	25 min	45 min	1.5 h
Thermal Properties			
Constant service temperature	-50 to 120 °C [-58 to 248 °F]	-50 to 120 °C [-58 to 248 °F]	-50 to 150 °C [-58 to 302 °F]
Glass transition temperature (T_g)	11 °C [52 °F]	44 °C [111 °F]	44 °C [111 °F]
CTE prior T_g	86 ppm/°C [186 ppm/°F]	83 ppm/°C [181 ppm/°F]	94 ppm/°C [201 ppm/°F]
CTE after T_g	221 ppm/°C [430 ppm/°F]	210 ppm/°C [410 ppm/°F]	195 ppm/°C [382 ppm/°F]
Thermal conductivity @25 °C (75 °F)	0.32 W/(m·K)	0.25 W/(m·K)	0.27 W/(m·K)
Thermal diffusivity @25 °C (75 °F)	0.10 mm^2/s	0.13 mm^2/s	0.15 mm^2/s
Specific heat capacity @25 °C (75 °F)	2.73 J/(g·K)	1.73 J/(g·K)	1.44 J/(g·K)
Physical Properties			
Color	Black	Black	Black
Hardness	74A	80D	73D
Tensile strength	4.5 N/mm^2 [660 lb/in^2]	10 N/mm^2 [1 500 lb/in^2]	38 N/mm^2 [5 500 lb/in^2]
Compressive strength	N/E	250 N/mm^2 [36 700 lb/in^2]	295 N/mm^2 [42 800 lb/in^2]
Lap shear (stainless steel)	4.4 N/mm^2 [640 lb/in^2]	N/E	13 N/mm^2 [1 800 lb/in^2]
Lap shear (aluminum)	3.1 N/mm^2 [450 lb/in^2]	7.5 N/mm^2 [1 100 lb/in^2]	13 N/mm^2 [1 800 lb/in^2]
Electrical Properties			
Breakdown voltage @3.175 mm	46 200 V	50 900 V	47 300 V
Dielectric strength @3.175 mm	370 V/mil	407 V/mil	378 V/mil
Volume resistivity	8.4 x 10^{12} Ω·cm	1.9 x 10^{13} Ω·cm	1.4 x 10^{13} Ω·cm

Refer to TDS for more information. N/A=Not Applicable. N/E=Not established.

Available Packaging

2 Bottle kit
8800-375ML
8810-375ML
8820-375ML

3 Can kit
8800-2.55L
8810-2.55L
8820-2.55L

3 Can kit
8800-10.8L
8820-10.8L

3 Pail kit
8800-60L
8820-60L

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