

IRS 3071

Polyurethane Potting Compound

Description

IRS 3071 is a semi-rigid, room temperature curing, flame retardant and thermally conductive polyurethane potting compound.



Specifically designed for the cost-effective encapsulation of a variety of low to medium voltage electrical and electronic applications, the material is medium viscosity, flame retardant to UL94 V-0 at 6mm and has excellent adhesion to a wide range of substrates.

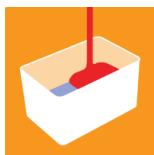
IRS 3071 is resistant to UV, water-based cleaning chemicals, motor oil, lubricants and most dilute acids and alkalis.

Key Properties

- Non-toxic
- Flame retardant to UL94 V-0 at 6mm
- Excellent adhesion
- Thermally conductive
- Economical
- RoHS & WEEE compliant
- Long pot life
- Cured at room temperature or with heat

Typical Properties

Property	Mixed	Resin	Hardener
Colour	Black	Black	Amber
Specific gravity (g/ml)	1.67	1.75	1.23
Viscosity m.Pa.s @ 25°C	7,500	16,500	200
Mix ratio	8.4:1 (weight) 6.1:1 (volume)		
Operating temperature range	-40 to +125°C		
Flammability	UL94 V-0 @ 6mm		
Shrinkage	0.5% by volume		
Shore hardness	A90		
Thermal conductivity	0.75 W/mK		
Coefficient of linear expansion	60-80 ppm/°C		
Volume resistivity	12 ¹⁰ ohm-cm		
Surface resistivity	12-14 ¹⁰ ohm		
Dielectric strength	16 kV/mm		
Relative permittivity	3.2 @ 50KHz		



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Property	
Water absorption	0.54% (after 30 days @ 25°C)
Elongation at break	~ 30%
Comparative tracking index	> 600 V
Glass transition temperature (Tg)	-10°C

Cure Schedule

(300g)

Bondline Temperature	Working Life	Gel Time	Light Handling	Full Cure
RT (20-25°C)	10-20 minutes	45-85 minutes	24 hours	48 hours
60°C			2 hours	4 hours
80°C			1 hour	2 hours

Cure time will depend on cross sectional area, ambient conditions, and mixing method. The above data is given as a guide only. Hotter temperatures may be used for faster cure but will result in higher post cure shrinkage and higher cure exotherm. Experimentation and testing is suggested to avoid side effects.

Storage and Shelf Life

18 months at 25 °C Specialty packaging may be less.

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.

Some systems are prone to settling due to high filler content and should be inverted every two to three weeks to reduce the accumulation of the fillers on the bottom of the containers.

Inventory should be rotated on a FIFO (first in, first out) basis.

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

Health and Safety

Polyurethane resin systems may cause sensitisation by skin contact or inhalation may be corrosive, harmful or toxic. It is therefore strongly recommended that skin and eye contact is avoided by the using of appropriate personal protective equipment such as gloves, safety glasses or goggles and overalls.

Wash any contamination from the skin immediately and thoroughly and do not eat, smoke or drink in the working vicinity. Under normal working conditions a good source of ventilation is adequate, however if the material is heated, or where vapour levels are likely to exceed the occupational exposure limits appropriate respiratory protection must be worn.

Local exhaust ventilation (LEV) may be required especially for curing ovens or where large volumes of material are curing.

The above is given as a guide only; please refer to IRS3071 safety data sheet individual/specific advice.

Useful Resources

[Product webpage](#)

Warranty

Statements, technical information and recommendations contained herein are based on tests we believe to be reliable but they are not to be construed in any manner as warranties expressed or implied. The user shall determine the suitability of the product for his intended use and the user assumes all risk and liability whatsoever in connection therewith.