

IRS 2111 All-Purpose Epoxy Adhesive

Description

IRS 2111 All-Purpose Epoxy Adhesive is a general-purpose two-part epoxy adhesive with medium viscosity. It bonds well to a large variety of substrates including metals, glass, wood, composites, GRP, ceramics, ferrites, stone, rubber, and many thermoset plastics.

IRS 2111 cures to a resilient adhesive with some flexure, allowing resistance to impact and dynamic loading. It has good resistance to moisture and chemicals. With a useful working life of about one hour, IRS 2111 is a versatile adhesive suitable for evaluating in many industrial applications.

IRS 2111 is supplied in convenient side-by-side double syringe cartridges.

Typical Properties

Property	
Mix ratio	1:1
Mixed viscosity	14,000 cps
Gel time (room temperature)	90 minutes
Hardness, Shore D	65 – 75
Tensile strength	44 MPa
Specific gravity (mixed)	1.1
Operating temperature	-55°C to +120°C
Compressive strength	64 MN/m ²
Surface resistivity	1.6 x 10 ¹² ohm.cm
Dielectric strength	17 kV/mm
Thermal conductivity	0.3 W/mK
Elongation at break	2%
Glass transition (T _g)	~50°C
Colour	Amber



Key Properties

- Excellent general purpose structural adhesive
- Useful working life of about one hour
- Tough and resilient, impact and vibration resistant
- Good chemical/humidity/moisture resistance
- Convenient packaging
- Non-toxic
- RoHS compliant



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Cure Schedule

(1.5cm bead)

Bondline Temperature	Working Life	Gel Time	Tack Free	Light Handling	Full Cure
RT (20-25°C)	120 minutes	210 minutes	7 hours	24 hours	48 hours
Usable life in nozzle	240 minutes				

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.

Lap Shear Adhesion

Substrate	
Aluminium to Aluminium	7.6 MPa
Copper to Copper	6.1 MPa
ABS to ABS (substrate failure)	5.5 MPa
Nylon 6 to Nylon 6	2.5 MPa
Stainless Steel	9.0 MPa
Acrylic to Acrylic	2.3 MPa

Storage and Shelf Life

24 months at 25 +/- 10 °C

Many epoxy resin systems are prone to crystallization as epoxy resin is a super-cooled fluid. This condition may give the product a gritty or grainy appearance (or hazy in clear products). Products in this state will not usually cure to normal and expected properties. In extreme cases it may appear solid and cured. Fluctuating temperatures (within 5 to 50 °C) aggravate this phenomenon. Heating the individual component to 50 to 60 °C while stirring can usually restore products to original state.

Health and Safety

Epoxy 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 IRS2111 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.