

IRS 2128 Toughened Epoxy Adhesive

Description

IRS 2128 Toughened Epoxy Adhesive is a high-performance black resin system. It has excellent adhesion to a wide variety of substrates and good chemical resistance. A two-part system with a simple 1:2 mix ratio, it is supplied in a convenient side-by-side double syringe cartridge, complete with static mixing nozzles.

This adhesive is a good candidate to test for applications where there is vibration, impact or thermal shock. Its resiliency allows this adhesive to withstand impact and vibration stresses, absorb energy, and to deal with bonding materials with different CTEs under thermal cycling.

Typical Properties

Property	
Mix ratio	1.87:1 resin to hardener by weight 2:1 resin to hardener by volume
Mixed viscosity	Thixotropic
Colour	Black
Specific gravity (mixed)	1.74
Hardness, Shore D	70 – 80
Operating temperature	-55 to +140°C
Thermal conductivity	1.0 W/mK
Tensile strength	45 MPa
Compressive yield strength	<10 MPa
Coefficient of linear expansion	40-60 ppm/C
Volume Resistivity	1.3×10^{10} ohm-cm
Electric strength	15 kV/mm
Water absorption (7 days @ 23°C)	0.4%



Key Properties

- Excellent adhesion to a variety of metals, plastics, and GRP
- Toughened
- Impact resistant
- Dimensionally stable
- Long pot life
- Thixotropic, gap filling
- Good general chemical resistance
- RoHS compliant



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Cure Schedule

Bondline Temperature	Working Life	Full Cure
RT (20-25°C)	60 minutes	96 hours
40°C		24 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.

Lap Shear Adhesion

Substrate	
Aluminium to Aluminium	14 MPa
Copper to Copper	15 MPa
Stainless Steel	18 MPa
ABS to ABS	3.1 MPa
Nylon 6 to Nylon 6	2.1 MPa
Acrylic to Acrylic	3.2 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 IRS2128 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.