Opti-tec 5013-1

Optically Clear, Fast Cure Epoxy Adhesive for Glass and Glass/Metal Bonding

Description

Opti-tec 5013-1 is a two-component, medium viscosity epoxy with high optical clarity. It has a fast room temperature cure, which can be accelerated by heat. Opti-tec 5013-1 is designed as an adhesive, or for small potting and encapsulation projects where high optical clarity, good wetting and medium viscosity are important.

Opti-tec 5013-1 can be used for bonding glass, quartz, metal and many plastics. It finds uses in the assembly and repair of glass items where a clear adhesive is required.

Features & Benefits

- Optically clear
- Viscosity of 5,000-10,000 cps
- Sets within minutes and cures within hours at room temperature. It reaches handling strength in 30 minutes. Full cure can be achieved in 10 minutes at 65°C.
- High surface energy allows it to wet and wick between surfaces. It develops strong adhesion to most materials used in optics, including metals, ceramics, glass and most plastics.
- Good impact and thermal shock resistance
- Hard material after cure and can be polished
- Good resistance to yellowing
- Supplied in convenient side-by-side double syringe cartridges, complete with static mixing nozzles

Applications

- Glass and metal bonding
- Repair of glass, wood, ceramic, metal
- Repair or restoration of minerals, gems and quartz crystals
- Optical assembly, optical filters, lenses, prisms
- Optical encapsulation & glob topping, small volume casting or potting
- Opto-electronics, photonics, LEDs

Specifications

Part number change: as of version 3.0, April 2021, the part number of this product changed from Opti-tec 5013 to Opti-tec 5013-1. This is due to an unavoidable change in a formulation component. This change does not affect the product data-sheet specifications. The new formulation has passed internal testing and is deemed to be equivalent.

Typical Properties	
Mix ratio	1:1 resin to hardener
Mixed viscosity	5-10 Pa.s (5,000-10,000 cps)

Contact us for more information about our adhesives

t 01865 842842
e info@intertronics.co.uk
www.intertronics.co.uk

Station Field Industrial Estate
Banbury Road, Kidlington
Oxfordshire, England OX5 1JD

Typical Properties	
Colour	Clear, water white
Specific gravity	1.20
Pot life	5 minutes @ 23°C (2 gram mix) Recommended maximum application 2 grams Larger quantities may lead to exothermic reactions which may have undesired effects

Cured Properties (24 hours @ 23°C)	
Hardness	Shore D 70
Temperature range	-60 to 125°C
CTE	55 ppm/°C
Lap shear strength (Al/Al)	8 MPa
Refractive index	1.54
Shrinkage on cure	3%
Shelf life	12 months in original sealed containers

Cure Schedule

Bondline Temperature	Time
23°C	2 hours
65°C	10 mins

Storage and Shelf Life

12 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 OPT 5013-1 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 warrantees 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.