

Opti-tec 5053 High Temperature Epoxy Adhesive



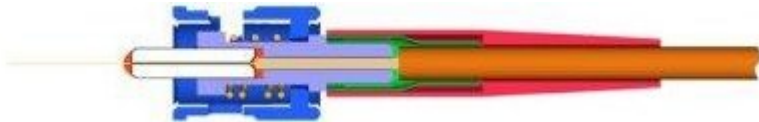
Description

Opti-tec 5053 High Temperature Epoxy Adhesive is a two component, low viscosity, heat curing epoxy designed for high temperature applications. It is well suited to fibre optic terminating, where optical fibres are “pot and polished” into connectors or ferrules.

Opti-tec 5053, when cured, is considered non-cytotoxic and meets the requirements of **ISO 10993-5**. It is a suitable candidate for applications in the medical device market – for example, endoscopes or sensors.

Product improvements

For most fibre optic terminating applications, an improved and faster cure version of Opti-tec 5053 is recommended – please see [Opti-tec 5053-F-A High Temperature Fast Cure Epoxy Adhesive](#).



Features & Benefits

- High surface energy and low viscosity allows it to readily wet and wick between optical fibres. It develops strong adhesion to most materials used in fibre optics and optics, including metals,

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ceramics, glass and most plastics.

- Excellent impact and thermal shock resistance
- High glass transition temperature results in excellent high temperature performance and creep resistance
- Resists moisture, vapours and most chemicals. It features low outgassing and low vapour pressure, making it an ideal sealing material for electronic and optical applications.
- Colour change upon cure, from clear to deep translucent red
- Specially formulated to have very low skin sensitivity
- Long pot life and good handling characteristics
- Used for Telcordia GR-326-CORE compliant assemblies (*General Requirements for Singlemode Optical Connectors and Jumper Assemblies* – formerly Bellcore), where its high Tg and environmental robustness allow the termination to meet the specification. Note: optimal cure schedule required.
- When cured, is considered non-cytotoxic and meets the requirements of the Elution Test, ISO 10993-5

Applications

- Fibre optic terminating
- Endoscope manufacture and repair
- Optoelectronics
- High temperature, high performance bonding
- Electronic sealing
- Medical device assembly

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Specifications

Specification		
Mix ratio	10:1 resin to hardener	
Mix viscosity	1-2 Pa.s (1000-2000 cps)	
Surface tension	42-44 mN/m	
Pot life	4 hours @ 23°C	
Cure schedule	Bondline temperature	Time
	80°C	30 mins
	90°C	15 mins
	100°C	10 mins
	120°C	5 mins
	150°C	1 min
Note: Optimal cured properties are achieved by curing for 5 minutes at a bondline temperature of 120°C. Whilst lower cure temperatures are quoted, they are not recommended for best performance.		

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Specification		
Optimum cured properties (5 minutes @ 120°C)		
Refractive index	1.55	
Glass transition temperature (T _g)	>130°C	
Density	1.15	
Hardness, Shore D	85	
Temperature range	-60 to 200°C	
Modulus	1 GPa	
CTE	55 ppm/°C Average between 0°C and 100°C	
Adhesive properties		
Lap shear	Aluminium Gold Silica	4000N 4000N 4000N

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Safety Data Sheets

For the latest SDS for this product, please e-mail msds@intertronics.co.uk

Other Information

Our [Technical Bulletins](#) page has links to:

- Technical Bulletin: [TB2003-07 – Operator Sensitisation from Fibre Optic Epoxies](#)

Ordering Information

Packaging

Opti-tec 5053 is available in bulk kits.

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Part number	Description
OPT5053-550G	550g kit – 1 x 500g resin, 1 x 50g hardener

Storage: Store in the original unopened containers under cool dry conditions between 15° and 25°C.

Medical devices: It is the user's responsibility to determine and validate the suitability of this adhesive in the intended medical device. This adhesive has not been tested for prolonged or permanent implantation, and is only intended for use in short term (28 days) or single-use disposable device applications. Intertronics does not authorise its use in long-term implant applications.

Next Steps

Our technical sales team are on hand to discuss your application requirements. [Click here](#) to get in touch.

Find out more information on [how to purchase](#).

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