

Opti-tec 5007 Clear Epoxy Adhesive for Optics



Description

Opti-tec 5007 is a two component, low viscosity clear epoxy adhesive with a two hour pot life, capable of curing within 20 minutes at 75°C. **Opti-tec 5007** has excellent sealing and bonding characteristics due to its viscosity and wetting properties. Cured material has high shock and impact resistance with outstanding chemical, moisture and thermal resistance.

The adhesive is designed for fibre optic terminating (*pot and polish* of fibre optic connectors), where its ability to cure at ambient or minimal raised temperatures gives process enhancements. It can be used for bonding and potting optical components such as prisms, lenses, LED displays and fibres, and for general precision bonding.

Features & Benefits

- Clear adhesive with a viscosity of 1000 cps
- Also available in a blue version (Opti-tec 5007B) for ease of inspection in fibre terminating
- Two hour pot life after mixing and cures within 16-24 hours at room temperature. Cure can be achieved in 20 minutes at 75°C or 5 minutes at 100°C.
- 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, ceramics, glass and many plastics.
- Good impact and thermal shock resistance
- Low exotherm, low shrinkage, low stress cure
- Excellent chemical and moisture resistance with a very low exotherm, making it suitable for small

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potting and encapsulation applications

- 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.
- Opti-tec 5007B, when cured, is considered non-cytotoxic and meets the requirements of the Elution Test, **ISO 10993-5**.

Applications

- Fibre optic terminating, multimode fibres
- Endoscope manufacture and repair
- Optical potting & bonding
- Medical device assembly – ISO 10993-5
- Glass bonding

Specifications

Typical Properties

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Typical Properties		
Colour	Opti-tec 5007 – clear Opti-tec 5007B – blue	
Mix ratio	100:25 resin to hardener	
Mix viscosity	500-1500 cps	
Pot life	2 hours @ 23°C (4g mix)	
Shelf life	12 months	
Cure schedule	Bondline temperature 25°C 75°C 100°C	Time 16-24 hours 20 mins 5 mins
Shrinkage on cure	2-3%	
Optimum cured properties (5 minutes @ 100°C)		
Glass transition temperature (T _g)	105°C	
Density	1.1	

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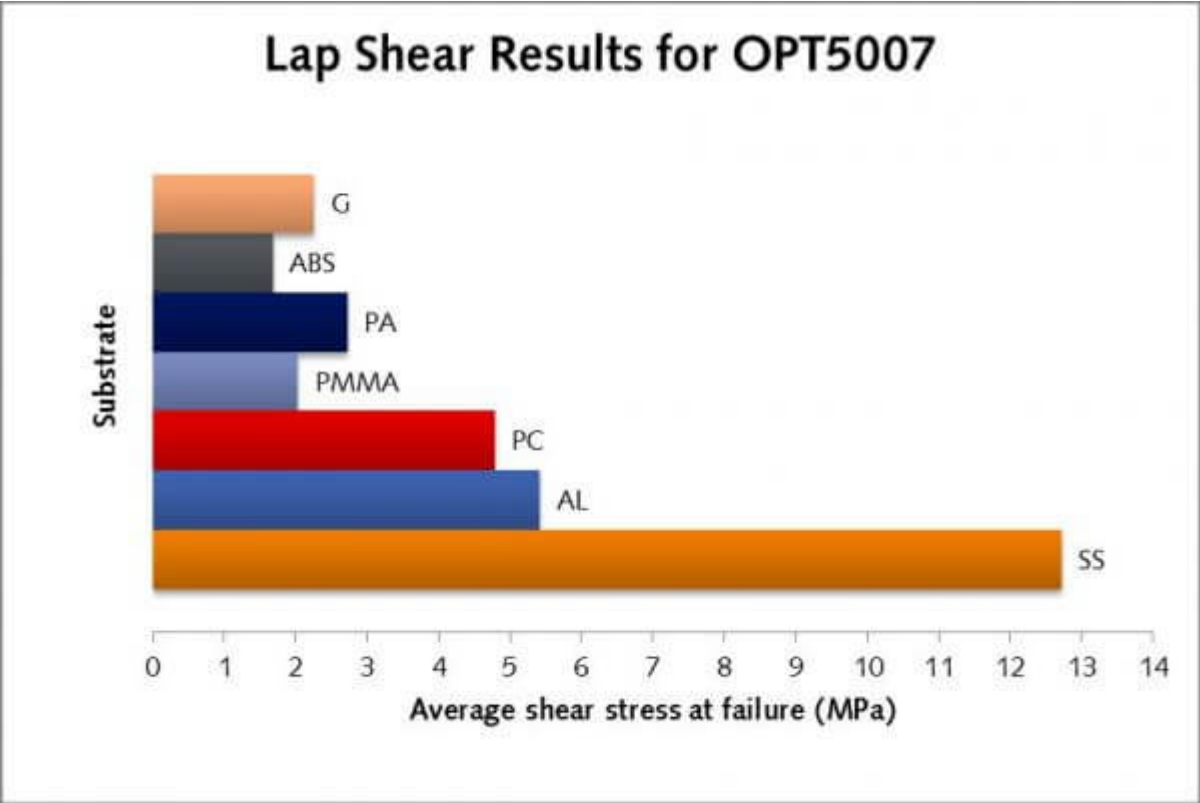
Typical Properties		
Hardness, Shore D	85	
Temperature range	-60 to 200°C	
CTE	55 ppm/°C	
Refractive index	1.55	
Surface tension	42-44 mN/m	
Adhesive properties		
Lap shear strength (Al/Al)	3000 N	

Adhesive bonded joints		Shear stress at failure	
		OPT5007	
		MPa	Mode of failure
Material	Stainless steel (SS)	12.7	Adhesion
	Aluminium 6082 T6 (AL)	5.4	Adhesion
	Polycarbonate (PC)	4.8	Cohesive substrate &/or adhesion
	PMMA	2.0	Adhesion
	Nylon 6/6 (PA)	2.7	Adhesion
	ABS	1.7	Adhesion
	Glass (G)	2.3	Cohesive substrate

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Lap shear OPT 5007



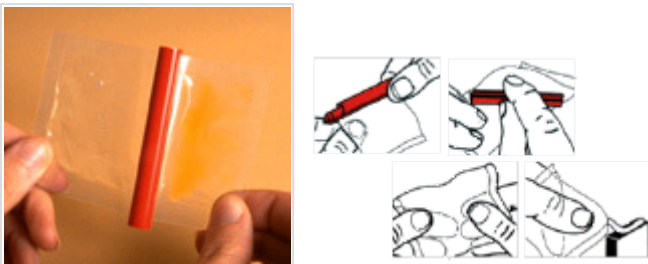
Lap shear graph OPT 5007

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Ordering Information

Opti-tec 5007 is available in twinpacks or bulk kits.



The twinpack sachet is a clear film sachet, with the resin and hardener separated by a removable clip and rail divider. [Click here for twinpack mixing instructions.](#)

Standard twinpack size is 4g total weight. Opti-tec 5007 twinpack sachets are packaged in quantities of 5, sealed into a protective aluminium foil pouch. After opening pouch, use adhesive twinpacks within a few days, or tightly reseal the pouch with the enclosed desiccant to preserve shelf-life.

Part number	Description
OPT5007-4G	Opti-tec 5007 epoxy – 5 x 4g twinpack sachets

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Part number	Description
OPT5007-500G	Opti-tec 5007 epoxy – 500g kit (approx 1.1lbs)
OPT5007B-4G	Opti-tec 5007 blue epoxy – 5 x 4g twinpack sachets
OPT5007B-500G	Opti-tec 5007 blue epoxy – 500g kit (approx 1.1lbs)

For the best results, store away from Strong alkalis, oxidising materials, acids, amines, oxidising agents, chlorides and acid anhydrides. Static electricity and formation of sparks must be prevented. Keep only in the original container. Keep container tightly closed and upright, in a cool, well-ventilated place. Protect containers from damage. Bund storage facilities to prevent soil and water pollution in the event of spillage. The storage area floor should be leak-tight, jointless and not absorbent.

Supplied by:

intertronics

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