

Opti-tec 7020

Optically Clear Silicone Potting Compound



Description

Opti-tec™ 7020 Optically Clear Silicone Rubber Potting Compound is a two-part, clear liquid silicone elastomer which will cure at room temperature or can be accelerated at elevated temperatures. It has a low viscosity, which allows for ease of flow around complex parts, providing electrical insulation and shock resistance. Its combination of transparency, non-yellowing and compliance makes it suitable for encapsulation of sensitive electronic or opto-electronic parts (e.g. LEDs), protecting the components from vibration, moisture and atmospheric contaminants.

Features and Benefits

- Optically clear
- Compliant
- Room or low temperature cure
- Non-yellowing catalyst system
- Low shrinkage
- Excellent for protecting LEDs and solar applications
- Convenient 10:1 mixing ratio for use in automatic dispensing equipment or hand mixing
- Low viscosity which allows for ease of flow around complex parts, providing electrical insulation and shock resistance
- Contains no solvents
- Has a chemical composition which provides hydrolytic stability and reversion resistance. It is an addition cure silicone with a platinum catalyst.

Applications

- Optical assembly
- Opto-electronics, photonics, LEDs
- Optical encapsulation & glob topping, casting, potting
- Solar panels
- Electronics potting

Specifications

Typical Properties	Mixed	Resin	Hardener
Colour	Clear; colourless	Clear	Clear
Viscosity (mPa.s)	Easily pourable	4000	500
Specific gravity		1.02	1.01
Mix ratio	10:1		
Pot life (@ 23°C)	4 hours		



Contact us for more information about our potting compounds

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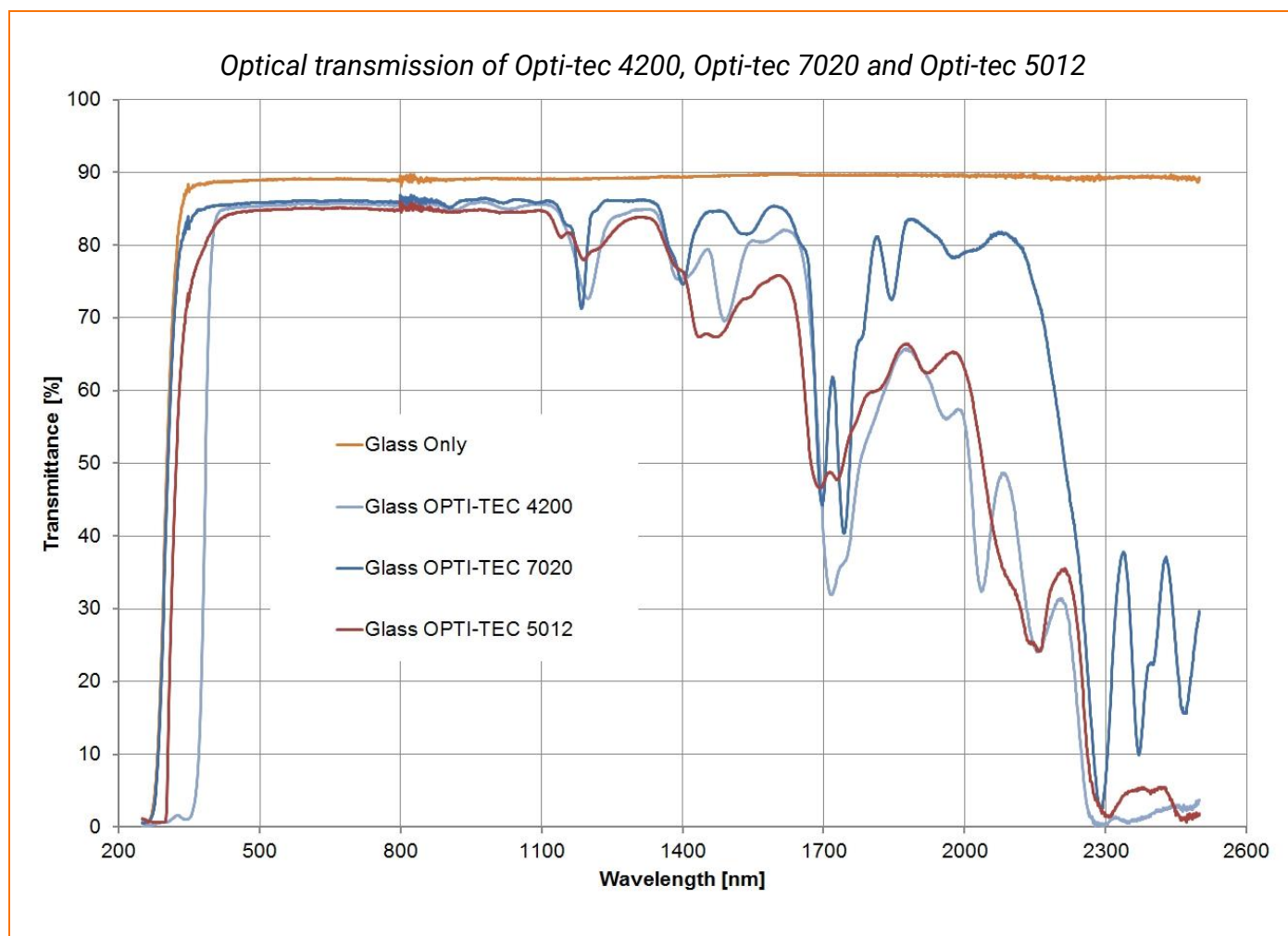
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Typical Properties	Mixed	Resin	Hardener
Cured Properties (60 mins at 60°C)			
Shore Hardness	A40		
Temperature range	-60 to 200°C		
Tensile strength	4.8 MPa		
Elongation at break	100%		
Linear shrinkage	< 0.1%		
CTE	275 ppm/°C		
Dielectric strength	20 kV/mm		
Dielectric constant	2.69 @ 1000Hz		
Dissipation factor	0.0006 @ 1000Hz		
Volume resistivity	1.7×10^{15} ohm-cm		
Thermal conductivity	0.18 W/m K		
Specific heat	1.255 kJ/kg		
Refractive index	1.405		
Transmittance	90.3%		



Cure Schedule (Approx. Maximum Time)

Bondline Temperature	Time
25°C	20 hours
100°C	60 mins

Typical values – will vary according to mass, film thickness and application. Higher cure temperatures will result in greater cure shrinkage and exotherm.

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 IRS2012-1 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 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.