TECHNICAL DATA SHEET

SilSo Clear 21002
2 Part Optically Clear Liquid Silicone Rubber

Description

This product is a transparent and colorless silicone formulation and is ideal for optical injection molding applications. The viscosity profile enables excellent flow around components and is excellent for potting complex parts. The chemical composition results in a cured product that is hydrolytically stable as well as reversion resistant. The silicone elastomer provides electrical insulation and physical shock resistance of components and enables environmental protection.

Key Features

- Convenient mixing 1:1 ratio for use in automatic dispensing equipment or hand mixing
- Contains no solvents
- Non-yellowing catalyst system
- Stable transmittance over time

Key Applications

- Injection molding
- Optical / magnifying lenses
- LED modules
- Solar collection products

Application

SilSo Clear 21002 is designed for optical injection moulding applications such as lenses, lightguides and LEDs.

Use and Cure Information

IMPORTANT:

In order to achieve optimum performance, the same lot number of the A and B components should be used. Mixed lots may not obtain the performance criteria listed on the TDS or Certificate of Analysis.

The 'A' part of the product contains the platinum catalyst; great care should be taken when using automatic dispensing equipment. Please ensure that it is not contaminated by residual hydride containing rubber (Part B) in the dispensing equipment, as curing will result. If in doubt, it is advised to thoroughly purge the equipment with a suitable hydrocarbon solvent or silicone fluid.

Mixing

Both the 'A' and 'B' parts should be well stirred to ensure the material is uniform. If utilizing machine-dispense, ensure the mixing device has sufficient elements to fully homogenize the components of the formulation.

Place the required amount of 'A' and 'B' parts by weight at the mix ratio shown opposite, in a clean plastic or metal container of approximately 3 times their volume, and mix until the color of the mixture is uniform. For best results, we recommend vacuum degassing. Degas by intermittent evacuation, the larger volume of the mixing vessel helps prevent overflow during this operation. In the case of automatic dispensing with static mixing head, the two components should be degassed before processing. Recommended vacuum conditions are 30-50 mbar intermittently over 5-10 minutes.

Property	Test Method	Value
Uncured Product		
Color A		**Clear**
Color B		**Clear**
Cure Type		**Addition**
Density A	BS ISO 2781	**1.03**
Density B	BS ISO 2781	**1.03**
Mix Ratio By Weight		**1:1**
Pot Life hrs at 23°C/73°F		**>24 hours**
Self Bonding		**No**
Viscosity A	Brookfield	**17,000 cP**
Viscosity B	Brookfield	**10,000 cP**
Viscosity Mixed	Brookfield	**13,500 cP**
Cured Product		
CTE Volumetric ppm/°C		**960 ppm/°C**
Color		**Transparent**
Density	BS ISO 2781	**1.03 g/cm3**
Elongation at Break	ISO 37	**110 %**
Hardness Shore A	ASTM D 2240-95	**67**
Linear Coefficient of Thermal Expansion (ppm/°C)		**320 ppm/°C**
Max Working Temp		**204 °C / 399 °F**
Min Working Temp		**-55 °C / -67 °F**
Refractive Index		**1.41**
Tensile Strength	ISO 37	**9.31 N/mm2 / 1350 psi**
Thermal Conductivity		**0.18 W/mK**
Electrical Properties		
Dielectric Breakdown (kV/mm)		**< 0.1% kV**
Dielectric Strength kV/mm	ASTM D-149	**18.7 kV/mm / 475 V/mil**
Volume Resistivity (Ohms cm)	ASTM D-257	**1.0E + 15 ohms cm**
Storage		
Max Storage Temperature		**38 °C / 100 °F**
Shelf Life		**24 mths**

Inhibition of Cure

Great care must be taken when handling and mixing all addition cured silicone elastomer systems, ensuring that all the mixing tools (vessels and spatulas) are clean and constructed in materials which do not interfere with the curing mechanism. The cure of the silicone can be inhibited by the presence of compounds of nitrogen, sulfur, phosphorus and arsenic; organotin catalysts and PVC stabilizers; epoxy resin catalysts and even contact with materials containing certain of these substances e.g. molding clays, sulfur vulcanized rubbers, condensation-cure silicone rubbers, onion and garlic.

Curing Conditions

The data offers a guide to the rate of cure at various temperatures, mixing of the components at temperatures between 15 and 25 °C is recommended to ensure adequate pot life for degassing and handling. The pot life can be extended to several hours by chilling the components before mixing.

It is important to check the compatibility in preliminary tests if unknown substrates are used.

Some formulations are not designed to cure at room temperature and may not develop full physical properties if cured below the minimum listed temperature. The recommended cure temperatures and times are provided for guidance only.

CHT Germany GmbH: Postfach 12 80, 72002 Tübingen, Bismarckstraße 102, 72072 Tübingen, Germany
Telephone: 07071/154-0, Fax: 07071/154-290, Email: info@cht.com, Homepage: www.cht.com / www.cht-silicones.com

The end user must test in their application and process as the quantity of material, size of part, and method of applying heat will influence time and temperature requirements.

Cure Time, injection molded at 150 °C	
3 x 12 x 125 mm	< 60 seconds

Health & Safety

Safety Data Sheets available on request.

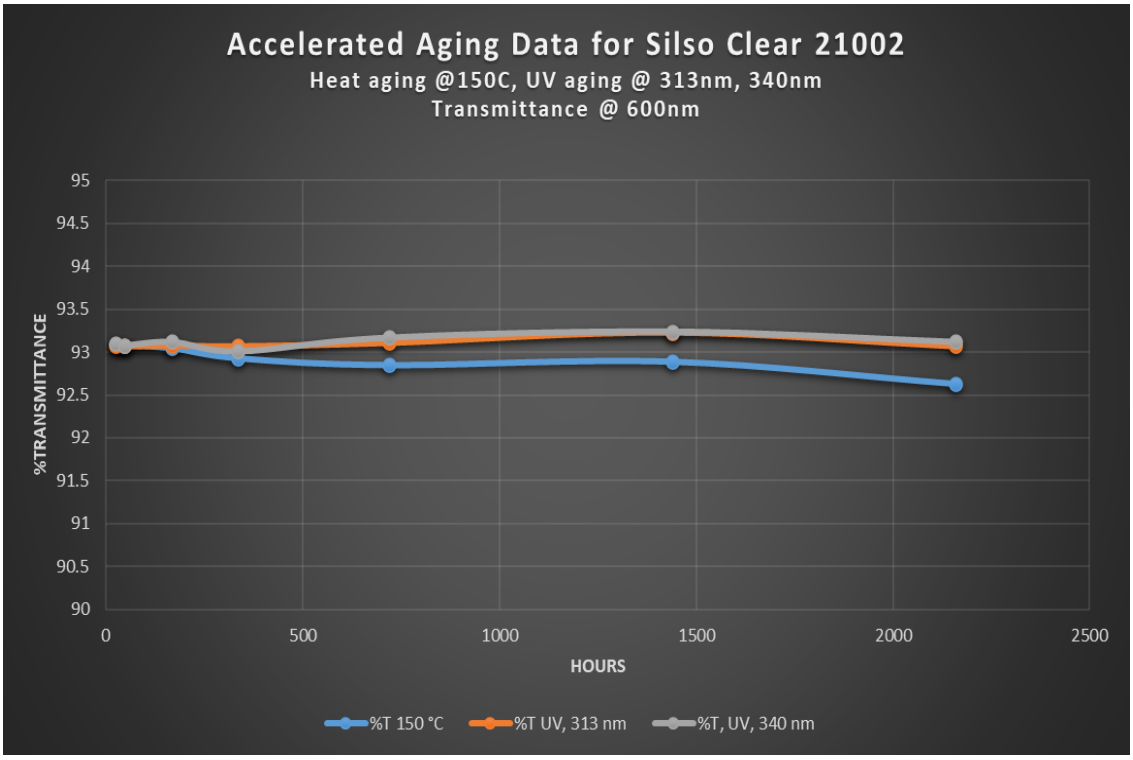
Packaging

CHT silicone elastomers are available in a variety packaging including bulk containers. Please contact our sales department for more information.

Typical Optical Properties	
Refractive Index, 589 nm	1.41
Transmittance, 760 nm	93.1
Transmittance, 600 nm	93.0
Transmittance, 450 nm	92.8
Transmittance, 380 nm	92.3

Revision Date 18 Apr 2024
Revision No 15

Download Date 09 May 2026



CHT Germany GmbH: Postfach 12 80, 72002 Tübingen, Bismarckstraße 102, 72072 Tübingen, Germany
Telephone: 07071/154-0, Fax: 07071/154-290, Email: info@cht.com, Homepage: www.cht.com / www.cht-silicones.com