

# STEREOLITHOGRAPHY TRUE SILICONE



Current Supplier Material: Spectroplast True Silicone

## PRODUCT DESCRIPTION

True Silicone is 100% pure silicone that is available in different shore-A hardnesses as detailed below. The material is suitable to produce both functional prototypes and end use products, which can be used in a temperature range of -30 °C to +180 °C.

True Silicone is biocompatible and has passed following certifications: ISO DIN EN 10993-5:2009 (Tests for in vitro cytotoxicity) and ISO DIN EN 10993-23:2021-10 (Tests for irritation).

The material shows high resistance to harsh environmental conditions, various acids, bases and nonpolar solvents. The printed parts are water repellent, insulating and have a high gas permeability.

## APPLICATIONS

True Silicone is typically used in healthcare applications like prosthetics, ear plugs or wearables, as well in broader industries, e.g. automotive or mechanical engineering, for products like sealings, hoses and gaskets.



## KEY PRODUCT BENEFITS

- High temperature and wear resistance
- Elasticity and high reproducibility after deformation or stress
- Biocompatibility (ISO DIN EN 10993-05 / 10993-23)

## PROPERTIES

PROPERTY	TEST METHOD	VALUE			
Colour	-	Transparent/translucent			
Shore-A hardness	ISO 7619-1	20	35	50	60
Density	ISO 1183-1 A	1.05 g/cm <sup>3</sup>	1.08 g/cm <sup>3</sup>	1.11 g/cm <sup>3</sup>	1.13 g/cm <sup>3</sup>
Tensile strength (x-y plane)	ISO 37 Type 4	4.9 N/mm <sup>2</sup>	5.5 N/mm <sup>2</sup>	7.25 N/mm <sup>2</sup>	8.5 N/mm <sup>2</sup>
Elongation at break (x-y plane)		>1000 %	650 %	530 %	360 %
Tear strength	ASTM D624 Type C	5.8 N/mm	10 N/mm	11 N/mm	17 N/mm
Rebound resilience	ISO 4662	> 80 %	> 80 %	> 80 %	> 80 %
Compression set	DIN ISO 815-1 Type B	< 25 %	< 20 %	< 20 %	< 20 %

## TOLERANCES

The tolerances for well-designed parts are in the X / Y / Z direction  $\pm 0.3\text{mm}$  plus an additional  $\pm 0.001\text{mm}$  / mm. Note that tolerances may change depending on part geometry. The minimum feature size is 0.25 mm for the XY direction and 0.40 mm for the Z direction. The minimal wall thickness is 0.30 mm for supported walls and 0.60 mm for unsupported walls.