DELO-GUM Silicones

Decomposition product		oxime	amine		acetic acid		
Product code		**SI480**	**3597**	**3599**	**3695**	**3697**	**3699**
Application area B = bonding, S = sealing, T = high-temperature-resistant		B/S	B/S	B/S	B/S/T	B/S	B/S/T
Color cured product		milky transparent	milky transparent	white/gray	red	milky transparent	red
Density [g/cm³] at room temperature (+23 °C)	DIN 53479	1.0	1.0	1.4	1.2	1.1	1.2
Viscosity[1] **[mPas]** Brookfield at +23 °C		17,000	140,000	pasty	80,000	350,000	pasty
Processing temperature [°C]		← +5 to +35 °C →					
Skin formation time [min]		10 – 20	~ 5	~ 8	~ 5	10 – 20	~ 5
Curing speed at +23 °C, 50 % relative humidity		← 2 mm/24 h →					
Tensile strength [MPa]	DIN EN ISO 527	0.2	1.6	1.2	2.5	5	3
Elongation at tear [%]	DIN EN ISO 527	95	400	600	300	500	300
Shore hardness[1]	DIN EN ISO 868	A 16	A 16	A 18	A 35	A 28	A 35
Shrinkage [vol. %]	DELO Standard 13	~ 5	~ 3	~ 3	~ 3	~ 3	~ 3
Water absorption [weight %]	DIN EN ISO 62 24 h at room temperature	0.06	0.23	0.3	0.2	0.06	0.2
Specific volume resistance [Ωcm]	according to VDE 0303	> 1 × 10^{13}	–	–	–	> 1 × 10^{13}	–
Dielectric strength [kV/mm]	according to VDE 0303	19	15	–	–	21	–
Dielectric constant at 50 to 70 Hz	according to VDE 0303	2.42	2.9 – 2.7	–	–	3.1 – 3.0	–
Special features of product		neutrally crosslinking low-viscous, flowable for applications in electronics	self-leveling for applications in electronics	steady contains fungicide for applications in electronics and for sealing joints	resistant to high temperatures low-viscous, flowable	very high bond strength self-leveling	resistant to high temperatures steady

[1] The values given are batch-dependent average values

SI = **SI**licone

Product description

DELO-GUM products are one-component, solvent-free adhesives and sealants on the basis of silicone rubber.

Standard temperature range

DELO-GUM products are normally used in a temperature range of –50 °C to +180 °C (resp. +300 °C, see special features of product "resistant to high temperatures").
Many product properties depend on the temperature and can change permanently, in particular at high temperatures. Therefore, it has to be checked before each use whether a certain adhesive is suitable for the temperatures in the required area of application.
Please see the Technical Data Sheet for more information on how our products react to temperatures.

Processing

The products are normally delivered ready for use. They are applied directly from the container or using dispensing units.

Curing

Curing proceeds at room temperature under the influence of air humidity. Increased humidity concentration accelerates curing. The reaction proceeds very fast – skin is formed within 5 to 20 minutes. Therefore, the components should be joined without interruption. Curing proceeds from outside to inside. 2 mm of adhesive are completely cured in 24 hours.

Surface pretreatment

To achieve optimum bond strength, the surfaces must be free from dust, oil, grease, separating agents and other contaminations. For cleaning, we recommend using cleaners from the DELOTHEN series.
After cleaning, the adhesion of the adhesive can be further enhanced by sand blasting or grinding the surface.
The long-term behavior of the bonding is improved by the DELO-SACO method.
The silicone primer DELO-PRE 3003 should be used on rigid materials under the following conditions:

- Porous materials
- High thermal stresses
- High mechanical stresses
- Strong climatic fluctuations
- Strong humidity influence

On flexible materials, such as rubber or plastic, the primer layer hardly resists deformations and can be lifted off. The primer is applied thinly by brushing, spraying or dipping on the precleaned surface. After an evaporation time of 30 minutes, the silicone is applied.

Storage life

- DELO-GUM SI480: 6 months
- DELO-GUM 3695: 9 months
- All other types: 1 year

After delivery, in the unopened original container at room temperature.

Use

DELO-GUM products are used as permanently flexible adhesives and sealants, and as fixing and casting compounds. Their special advantages are their high resistance to elevated temperatures, weathering and aging. Important application areas can be found in electronics and electrical engineering. Applications in these areas are for example the sealing of microswitches and cable bushings as well as the casting of electronic assembly groups in vehicle electronics, such as door closer heatings. In electronics, products that decompose amines and oximes are preferred in most cases.
In tool construction and mechanical engineering, DELO-GUM products are used for bonding and sealing of media-bearing hollows, such as oil pans, cooling liquid containers, etc.
DELO-GUM adhesives are excellent for the tension-equalizing bonding of dissimilar materials, especially in case of temperature fluctuations. For decades DELO-GUM silicones have proven to be efficient for the bonding of glass to metal and glass to plastic in glass and lamp construction.

Further information

More type-specific properties are included in the Technical Data Sheets, Material Safety Data Sheets and Instructions for Use.
For application tests and any question you might have regarding the use of DELO products, please do not hesitate to contact our Engineering Department.

Application examples

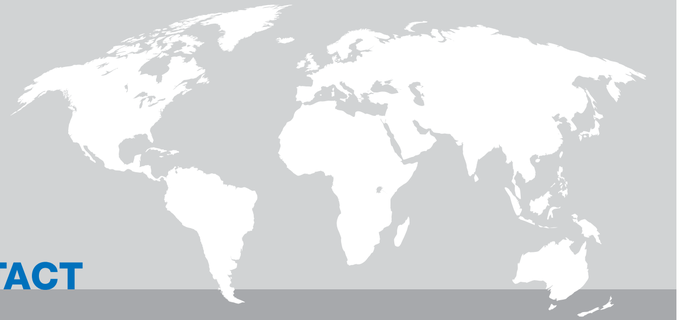
- **Bonding with high adhesion**
  Good adhesion to metal, plastic, glass and many other materials
  → DELO-GUM 3697

- **Use up to +300 °C**
  Very high temperature resistance
  → DELO-GUM 3695
  → DELO-GUM 3699

- **Casting applications**
  Good flow behavior, self-leveling
  → DELO-GUM SI480

- **Bonding, sealing, casting in electronics**
  → DELO-GUM SI480
  → DELO-GUM 3597

- **Sealing of large gaps**
  High viscosity, steady
  → DELO-GUM 3599
  → DELO-GUM 3699



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www.DELO-adhesives.com

Our selection charts / material selection guides are a technical selection aid giving an overview of various product variants. We will be pleased to provide you with sales details, such as available container sizes, stock availability and minimum order quantities, on request.
The data and information provided are based on tests performed under laboratory conditions. Reliable information about the behavior of the product under practical conditions and its suitability for a specific purpose cannot be concluded from this. It is the customer's responsibility to test the suitability of a product for the intended purpose by considering all specific requirements and by applying standards the customer deems suitable (e.g. DIN 2304-1). Type, physical and chemical properties of the materials to be processed with the product, as well as all actual influences occurring during transport, storage, processing and use, may cause deviations in the behavior of the product compared to its behavior under laboratory conditions. All data provided are typical average values or uniquely determined parameters measured under laboratory conditions. The data and information provided are therefore no guarantee for specific product properties or the suitability of the product for a specific purpose. Nothing contained herein shall be construed to indicate the non-existence of any relevant patents or to constitute a permission, encouragement or recommendation to practice any development covered by any patents, without permission of the owner of this patent. All products provided by DELO are subject to DELO's General Terms of Business. Verbal ancillary agreements are deemed not to exist.

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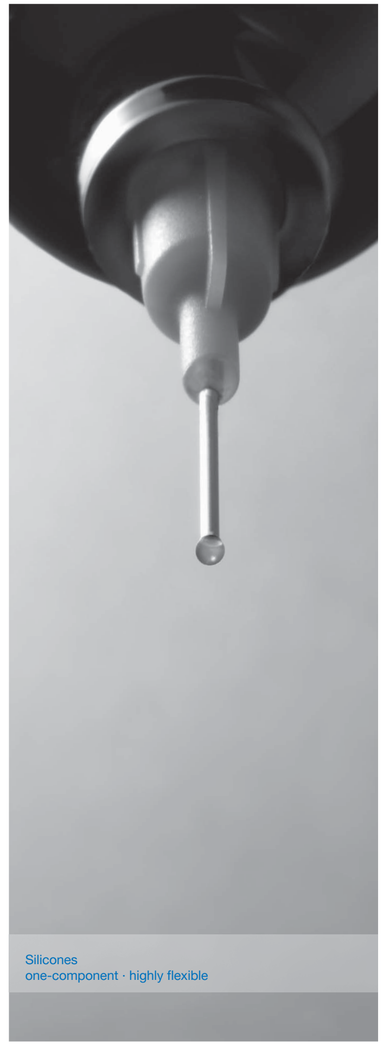

SELECTION CHART

DELO-GUM

Silicones
one-component · highly flexible