

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 [mPas]¹⁾ (+23 °C) Brookfield	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 (+23 °C) <small>50% relative humidity</small>	←————— 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 hardness¹⁾	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 x 10 ¹³	–	–	–	> 1 x 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 = **S**ilicone

Product description

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

Special product: DELO-GUM 3397. Two-component, low-shrinkage silicone without decomposition products for the production of exact molds. Easy to remove from the component without separating agents.

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 permanently change, especially at high temperatures. Therefore, the suitability of the respective adhesive for the intended temperature range of use must be tested according to the application before use. You can find details on the behavior of the products under the influence of elevated temperatures in the respective technical data sheet.

Processing

DELO-GUM adhesives are supplied ready for use and can be processed well from the original container or with dispensing units. You can find more details in the DELO equipment brochure.

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

For optimal adhesion, the surfaces to be bonded must be free of oil, grease, separating agents and other contaminations. We recommend our DELOTHEN cleaners.

After cleaning, adhesion can be further improved by sand blasting, grinding or pickling. 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, at room temperature after delivery in unopened original containers.

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

You can find more details on type-specific properties in the technical data sheets and material safety data sheets.

Our Engineering Department will be pleased to support you in technical application tests and questions resulting from processing DELO products.

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

▪ Molding, coating

no decomposition products, high molding precision, easy to remove without separating agent
→ DELO-GUM 3397

DELO-PHOTOBOND	1-component acrylates UV-curing · light-curing
DELO-DUALBOND	1-component acrylates light-/humidity-curing · UV-/light-/heat-curing
DELO-KATIOBOND	1-component epoxies UV-curing · UV-/light-curing · light-activated
DELO-DUALBOND	1-component epoxies UV-/light-/heat-curing
DELOMONOPOX	1-component epoxies heat-curing
DELO-DUOPOX	2-component epoxies cold-curing
DELO-ML	1-component methacrylates anaerobic-curing
DELO-CA	1-component cyanoacrylates fast-curing
DELO-GUM	1-component silicones highly flexible
DELO-PUR	2-component polyurethanes cold-curing · tough-elastic
DELOTHEN	Cleaners CFC-free
DELOMAT	Dispensing units precise
DELOLUX	Curing lamps intensive

Our selection charts 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 user's responsibility to test the suitability of the product for the intended purpose by considering all specific requirements. 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. Verbal ancillary agreements are deemed not to exist.

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SELECTION CHART

DELO-GUM

Silicones
one-component · highly flexible

DELO

