
WACKER SILICONES

ELASTOSIL®

# SILICONES FOR THE ELECTRONICS INDUSTRY

CREATING TOMORROW'S SOLUTIONS

Content



# YOU CAN TELL A TAILOR-MADE SILICONE FROM WACKER BY ITS PERFECT FIT

# LET'S TALK ABOUT WHAT YOU WANT

Enormous demands are being placed on electronic components nowadays and they keep rising at breakneck speed.

So, there needs to be a supply of new materials available at the right time when our customers' development products take concrete shape. As far as the materials are concerned, it is usually clear from the outset where they are going to be used and how much optimization is needed to get them there. That's why starting materials are called for whose basic chemical structure permits precisely defined modifications as regards consistency, technical properties and processing. And that is precisely what WACKER silicones offer, as numerous applications in the electronics industry show.

The applications laboratories at WACKER develop and test new products all the time. And because processing properties are a key success factor, the pilot series are produced in the WACKER pilot plant. And, just as they would be on the shop floor – on the latest production equipment.

With more than 50 years' experience in silicone technology and its above-average commitment to R&D, WACKER has long been a driving force for progress in the electronics sector. We are able to do so only because of the continuous dialog that we foster with our partners and customers. It takes market proximity and precise knowledge of production workflows and material requirements before solutions can be found that are tailored to our customers' precise needs.

Let's talk.

**You can always rely on WACKER's technical support service.**

# THE WEALTH OF POSSIBLE APPLICATIONS IS BY NO MEANS EXHAUSTED

**Whether for electronics in the automotive, entertainment and communications or semiconductor industries, silicones from WACKER are known throughout the sector for their wide variety of outstanding properties. The product series that are used here are called SEMICOSIL®, ELASTOSIL® and WACKER SilGel.**

## A profile of WACKER silicones

The following outstanding properties make WACKER silicones the ideal choice for use in electronics:

- Outstanding resistance from −50 °C to +200 °C
- Very good adhesion to many substrates
- Excellent weathering and radiation resistance
- Very good chemical resistance
- Superb dielectric properties are invariable over a wide range of temperatures and frequencies
- Excellent environmental and physiological record
- Water-repellent surface and low moisture uptake
- Low modulus of elasticity
- High chemical purity

## Applications in automotive electronics

Vehicle comfort, safety and economic effectiveness today increasingly depend on the quality of the electronic systems. And nowhere are electronics exposed to such extreme conditions as in the automotive industry: temperature fluctuations, water splashes, damp, chemicals, dust, jarring and vibrational load are the norm here. On top of that, the electronic components have to withstand the intense heat under the hood. Together with spiraling demands for better performance and increasing miniaturization, parts have to sustain ever-increasing thermal loads.

Silicones from WACKER have a diverse property profile and broad range of processing methods that render them suitable for widespread use in automotive electronics.

## Other electronics applications

Silicones ensure that sensitive electronic parts keep working as they should. They are needed in entertainment and communications electronics, semiconductor electronics and I&C technology. There, they play a wide variety of roles: variously protecting, bonding and sealing. They thus insulate against all kinds of outside influences, such as grime, damp, radiation and heat.

**WACKER silicones provide reliable protection of electronic components against all kinds of outside influences.**

# DIVERSITY OF PROPERTIES REFLECTS DIVERSITY OF POSSIBLE APPLICATIONS

**The diverse properties possessed by silicones from WACKER make them suitable for a wide range of applications. Selectively combining them can open up a great many more.**

### Resistance to extreme temperatures

Among the outstanding properties of silicones is their resistance to extreme temperatures. No other elastomers can be used at temperatures above 150 °C.

### Adhesive properties

The self-adhesive silicone rubber grades are ideal for many substrates. In certain cases, however, it is advisable to prime the substrate: for example, with a specialty WACKER primer, or by flame or plasma treatment.

### Gas and water-vapor permeability

At room temperature, the gas permeability of silicone rubber is about ten times higher than that of natural rubber; at 100–150 °C, however, it is approximately the same as that of natural rubber. Under normal conditions, silicone rubber can contain about 15–20 % by volume of dissolved air.

### Chemical resistance

Silicone rubber is resistant to aqueous solutions, dilute acids and bases, and polar solvents. It may swell in organic solvents such as ketones, esters and hydrocarbons, but this is reversible and the structure will not break down. Cured silicone rubber can only be removed by complete degradation with an agent such as concentrated sulfuric acid or alcoholic base.

### Radiation resistance

Silicone rubber withstands high doses of electromagnetic radiation in the microwave to ultraviolet range. This explains the wide variety of applications it enjoys, from microwave ovens to solar generators.

### Environmental compatibility

The basic structure of silicone polymers is similar to that of quartz. Cured silicone rubber is therefore ecologically compatible and has a low order of toxicity.

### Thermal conductivity

The thermal conductivity of most silicone elastomers is in the order of 0.15 to 0.25 $W \cdot K^{-1} \cdot m^{-1}$ at room temperature. Special, highly filled grades can reach values up to 2.5 $W \cdot K^{-1} \cdot m^{-1}$.

Checking the adhesive strength of WACKER silicones

## Electrical properties

The electrical properties of silicone rubber are comparable to those of other insulating materials at room temperature. However, silicone rubber has the advantage that these properties remain virtually constant over a temperature range from –45 to +180 °C. The fact that their insulation resistance, dielectric strength and loss factor are practically unaltered by high temperatures is important in many applications. They are also virtually unchanged after immersion in water.

## Optical properties

The color and appearance of silicone rubber is determined by the fillers used in the respective compound. In the visible spectral range (400–760 nm), thin layers of unfilled materials are almost 100 % transparent. They only become opaque in the UV range below 200 nm. Their refractive index $n_D^{25}$ is between 1.410 and 1.404.

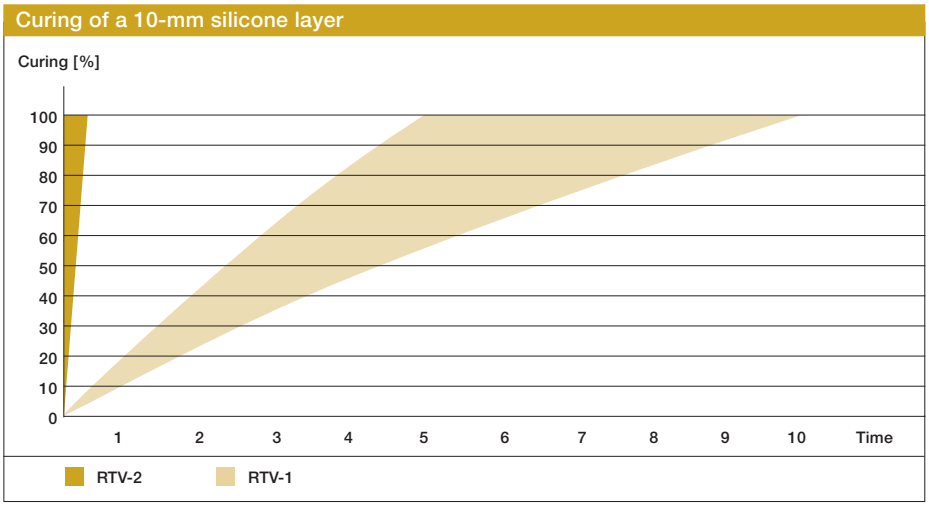
## Storage stability

Depending on the grade, WACKER silicones from the SEMICOSIL®, ELASTOSIL® and WACKER SilGel series have a shelf life of up to 12 months if stored in the tightly closed original containers at 5 to 30 °C. If the material is kept beyond the recommended shelf life, it is not necessarily unusable, but a quality check should be performed on the properties relevant to the application.

# THE RIGHT SYSTEM FOR EVERY PROCESS

**To select an appropriate silicone system, it is vital to set the right priorities – these will depend on your individual production requirements. Discuss the options with your WACKER technical support consultant.**

Every application defines a range of material properties that limits the choice of suitable silicone rubber. However, which product is best suited to your application will depend on the technicalities of your production process. A fully automated mass production process with short cycle times places different requirements on the silicone rubber than a short-run batch process does. WACKER offers various silicone systems, the processing properties of which may differ significantly irrespective of the properties of the cured rubber. These parameters are especially the pot life, processing technology, curing rate and temperature, whether the silicone system is a one-part or two-part system, and whether it is available in the desired quantity.




**A 10-mm test specimen of RTV-1 rubber takes about a week to cure.
An identical test specimen of RTV-2 rubber takes only a few minutes.**

## Set your priorities

The goal is often the same. The various WACKER silicone systems only point to different ways of reaching it.

In the past, RTV-1 silicones were preferred, because they are particularly easy to process. In some circumstances, this is still the case: for example with a discontinuous production process and if relatively long curing times are tolerated. If these conditions do not apply, WACKER also offers faster curing alternatives: RTV-2 silicones and heat-curing one-part systems.

**The choice of silicone system varies with the production requirements.**

**Silicone systems and their production**

Fast curing ^^

### RTV-2 silicones

- Addition-curing and condensation-curing two-part systems that cure at room temperature.
- Special metering and mixing equipment is needed to process them.
- Fast curing in the order of minutes is possible if elevated temperatures or a suitable catalyst are used.

### One-part silicones

- One-part systems that only cure at high temperatures.
- They can be processed with simple metering equipment.
- Fast vulcanization; in some cases, within a few minutes.

### RTV-1 silicones

- One-part systems that cure at room temperature.
- They can be processed with simple metering equipment, and can even be applied manually.
- They need atmospheric humidity to cure.

Easy processing >>

# CONDENSATION-CURING SILICONE ELASTOMERS

**Condensation-curing silicone elastomers from WACKER are available as both one-part and two-part systems. Both cure at room temperature. And each offers specific advantages for processors.**

## Condensation-curing RTV-1 silicone elastomers

ELASTOSIL® RTV-1 silicone elastomers are one-part systems that cure at room temperature. They owe their popularity to the outstanding properties of the cured products and their ease of processing, requiring minimum investment.

To cure, RTV-1 silicone elastomers need moisture. The rate of curing of these silicones is limited by the rate of diffusion, typically about 1–2 mm per day. RTV-1 silicone rubber grades are classified according to the by-products that split off during curing: acetic acid, amine, oxime or alcohol-curing.

Thanks to their ease of processing, ELASTOSIL® RTV-1 silicone elastomers are popular for applications involving only thin layers and tolerable curing times. However, these silicones sometimes require lengthy postcuring, which is not reconcilable with the short cycle times required of modern mass production. In such cases, fast-curing systems are needed.

### The advantages at a glance

– Very easy processing
– Low capital investment
– Very good adhesion to a large variety of substrates

## Condensation-curing RTV-2 silicone elastomers

The two components of the self-adhesive, condensation-curing ELASTOSIL® RTV-2 silicone elastomers are typically mixed in a ratio of 8 : 1 to 12 : 1. As the system cures, alcohol is eliminated (Fig. 1).

Our condensation-curing RTV-2 silicone elastomers typically have a pot life of about 10 minutes and take 70 minutes to set. The ultimate mechanical strength is reached after about six hours. These times can be varied within limits by varying the ratio of main component to catalyst. To ensure reliable processing, however, the pot life should not be less than two minutes.

It is not usual to accelerate curing by increasing the temperature. On the contrary, the temperature should not exceed 90 °C until the product has cured completely, as the silicone rubber could otherwise be destroyed.

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**Structural formula for condensation curing**

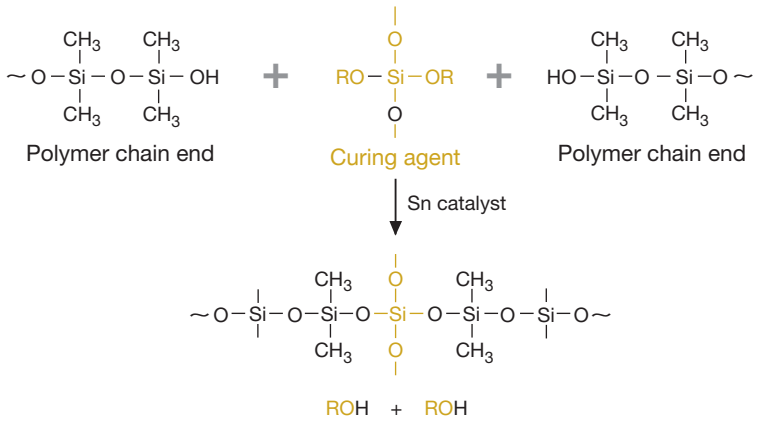



**Fig. 1**

### The advantages at a glance

– Rapid curing at room temperature, even of thick layers
– Very good adhesion to a large variety of substrates
– Outstanding heat resistance

# ADDITION-CURING SILICONE ELASTOMERS

**Addition-curing silicone elastomers from WACKER are available as both one-part and two-part systems. Their key advantage lies in the possibility of accelerating the reaction by increasing the temperature.**

## Addition-curing RTV-2 silicone elastomers

Addition-curing ELASTOSIL® RTV-2 silicone elastomers cure via a completely different mechanism from that of condensation-curing systems: when the two components are mixed, the polymer, a platinum catalyst and the curing agent are brought into contact with each other. Unlike the condensation-curing RTV-2 silicone elastomers, the curing rate is controlled by the temperature and not the mixing ratio. No by-products are formed during curing (Fig. 2).

### The advantages at a glance

– Rapid curing, even in combination with long pot life
– Reaction accelerated by raising the temperature
– Flowable and non-sag grades available

## Addition-curing, one-part, heat-curing silicone elastomers

Addition-curing, one-part, heat-curing ELASTOSIL® silicone elastomers comprise the same components as the addition-curing RTV-2 silicone elastomers. Consequently, they cure by the same chemical reaction. They are preferable to the two-part addition-curing silicones if the purchase of two-part metering equipment is not possible for technical or financial reasons. Their principal advantage is that they can be processed without the need for complicated mixing equipment, making them suitable for both long-run mass production and for short-run production.

The curing reaction can be accelerated as required by increasing the temperature. Even with pot lives as long as six months, curing times can be as short as 30 minutes at 140 °C or two minutes at 200 °C. The only limit on curing temperature is the heat resistance of the substrate to be bonded.

The curing temperature should be at least 120 °C.

## The advantages at a glance

– Low capital investment
– Suitable for short production runs
– Long pot lives and short curing times
– Reaction accelerated by increasing the temperature
– Flowable and non-sag types available

**Structural formula of addition curing**

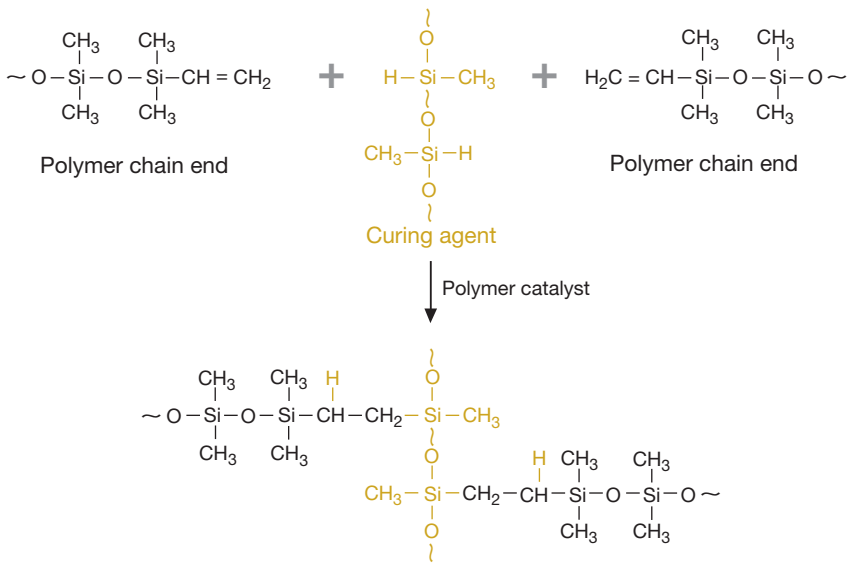



Fig. 2

# ALL FROM THE SAME CAST

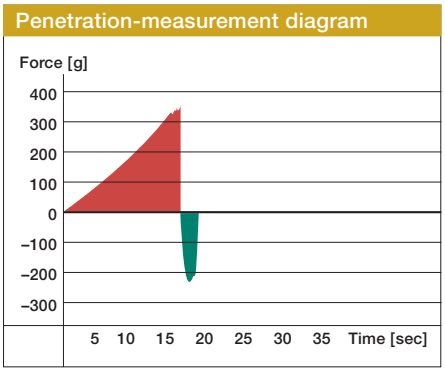
**Encapsulation is a particularly efficient way of protecting microelectronic parts. The reason is that processing of WACKER silicones on single-component and multi-component mixing and metering equipment proceeds fully automatically. This is a major step toward efficient large-scale production.**

Encapsulation has proved ideal for partial or complete covering of chips, hybrid circuits and power semiconductor modules. WACKER offers a wide range of one-part and two-part systems that can be processed on fully automated mixing and metering equipment. Simple mixing ratios (usually 1 : 1) and blend components of similar viscosities make it very easy to meter the material. What is more, it ensures a consistently high level of encapsulation quality.

Particularly soft gels are used for encapsulating sensitive devices, such as wire-bonded ICs. These gels safeguard functionality even under temperature extremes or strong vibration.

Gels of particularly low volatility and low levels of bleeding are increasingly popular in sensor applications.

WACKER offers other property profiles for encapsulation:




**Penetration measurement: determination of cured-rubber hardness of silicone gels**

**Possible material properties**

- Low viscosity or highly thixotropic
- Variable processing and vulcanization times
- Soft through to hard
- Transparent to opaque
- High flame resistance
- High thermal conductivity
- Fuel resistance, e.g. fluorosilicones
- Flexible at particularly low temperatures (down to –100 °C)
- Good temperature-cycling resistance
- Low shrinkage
- Good adhesion to plastic housings
- Low level of outgassing
- Low bleeding levels of uncrosslinked components
- Pronounced damping
- Specified, low ion content

**Penetration measurement in a WACKER applications laboratory**

# STANDARD: THE PROTECTIVE LAYER AGAINST ADVERSE INFLUENCES

**For coatings and protective surface coatings applied to circuit boards and hybrid devices, WACKER offers tailored solutions for function and quality. They facilitate economic and efficient processing in mass-production set-ups.**

Conformal coatings offer protection against external influences, such as dust, light, aggressive media, temperature fluctuations and mechanical stress. In addition, they insulate electronic circuits from their environment. Highly complex modules need increased levels of insulation strength.

There are various ways of applying conformal coatings in mass production.
– Spray coating
– Dip coating
– Flooding
– Partial coating of selected areas

Each of these processes imposes different requirements on the rheology, pot life and vulcanization characteristics of the protective surface coatings. And WACKER has tailor-made silicone solutions for each: solvent-based or solventless.

# BOLT, SOLDER, RIVET. WHY NOT JUST BOND?

**As unit numbers rise and greater demands are placed on quality and cost effectiveness, adhesives are increasingly replacing mechanical means of attachment. WACKER offers a solution in silicone to match every conceivable property profile.**

Bonding with flowable or non-sag WACKER silicone adhesives has decisive advantages over standard joining methods, such as bolting, soldering, welding and riveting:

– A bond has a more uniform distribution of stress, because adhesives disperse the forces evenly over an area and not locally.
– A bond functions simultaneously as a seal and so prevents the corrosion that often afflicts mechanical connections.
– Where substrates of different coefficients of thermal expansion are bonded together, they experience only slight thermal mechanical stress from heat cycles because of the high flexibility and low elastic modulus.
– Adhesives enable vastly differing materials to be joined together.
– By virtue of silicones' good insulating properties, metals of different electrochemical properties can be combined without risk of contact corrosion. The dimensions of the substrate undergo virtually no change.
– A bond is very good at damping vibration, because the silicones have a much lower elastic modulus than the substrate.
– A bond can substantially lower production overheads: inventory costs are lower, processing tolerances for the substrate are greater and automatic dispensing of the adhesive saves on labor costs.

WACKER offers a very wide range of property profiles for bonding with silicone:

### Possible material properties

– Flowable to non-sag
– Different hardness grades, ranging from Shore A 10 to Shore A 80
– Transparent to black
– Electrically insulating or electrically conducting
– Thermally conducting up to 2.5 W/m K, but electrically insulating

**Automated bonding of housing components with WACKER silicones – reliable and efficient**

# SEALING IN SITU

**Molded silicone parts for seals are produced in a separate injection-molding process and then incorporated into the respective composite part. Alternatively, a pasty seal or gasket can also be applied directly in situ and vulcanized to convert it into a rubber-elastic state.**

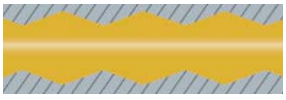
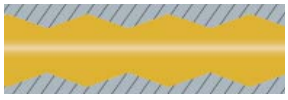
Automated production of sealants with WACKER silicones offers a number of advantages:
– Reduced material input
– Simplified inventory
– Fully automatic application
– No special processing of the flange surface
– Simple groove construction
– Seals kept firmly in place prior to assembly

In wet-type gaskets (FIPG), the parts to be sealed are joined together prior to vulcanization of the silicone rubber. Exact dimensional tolerance of the parts is unnecessary. At the same time, adhesion by the silicone to the parts produces a reliable seal.

In dry-type gaskets (CIPG), the seal adheres to the part to be applied and thus is kept firmly in place by itself. The dimensions of the seal can be designed such that the joined parts are uncoupled acoustically.

**Application of an adhesive seal of WACKER silicone rubber. The adhesive seal works by strong adhesion between silicone and flange surface.**

## Sealing techniques

| Product | Preformed Gasket | FIPG | LIS | CIPG |
|---|---|---|---|---|
| |  |  |  |  |
| **Application** | Produced by injection molding | Pasty to flowable, Fully automated application | Pasty to flowable, Fully automated injection | Pasty to flowable, Fully automated application |
| **Adhesion** | None | On both sides | None | On one-side |
| **Installation** | After vulcanization | Before vulcanization | Before injection and vulcanization | After vulcanization |
| **Disassembly** | Possilble | Not possible | Possible | Possible |
| **Sealing function** | ELASTOSIL® R or LR | By bonding | By expansion | By compression |
| **Silicone sealants** | Grades | ELASTOSIL® RT (RTV-1) | Silicone sealant ELASTOSIL® LIS (RTV-2) | ELASTOSIL® RT (RTV-1 and RTV-2), ELASTOSIL® SC (foams as protection against dust and splashes, where tolerances are large and contact pressure is low) |

# MOLDED PARTS IN DOUBLE-QUICK TIME

**ELASTOSIL® silicone rubber grades from WACKER are ideal for fully automated injection molding[1]: the cured rubber articles have little flash and are very readily demolded. This means that small elastic parts can be mass-produced smoothly and cost-effectively.**

The low viscosity of the ELASTOSIL® silicone elastomers used for injection molding has several advantages at once. Together with the crosslinking mechanism, it makes for a high curing rate. Plus, the low viscosity allows the injection pressure in the injection-molding machine to be substantially reduced – a key cost factor during procurement.

On account of their flowable to pasty consistency, ELASTOSIL® LR liquid silicone rubbers can be pumped directly from the original container and fed to the injection-molding machine via a static mixer.

### Multi-component molded articles

The ELASTOSIL® LR family of self-adhesive liquid silicone elastomers is one of the latest accomplishments of WACKER product research. These silicones can be molded in a single operation together with plastics such as polyamide or polyester to produce multi-component articles. The resulting time and cost savings are huge.

There are two technologies available for processing these silicones, the one-shot process and the two-shot process:

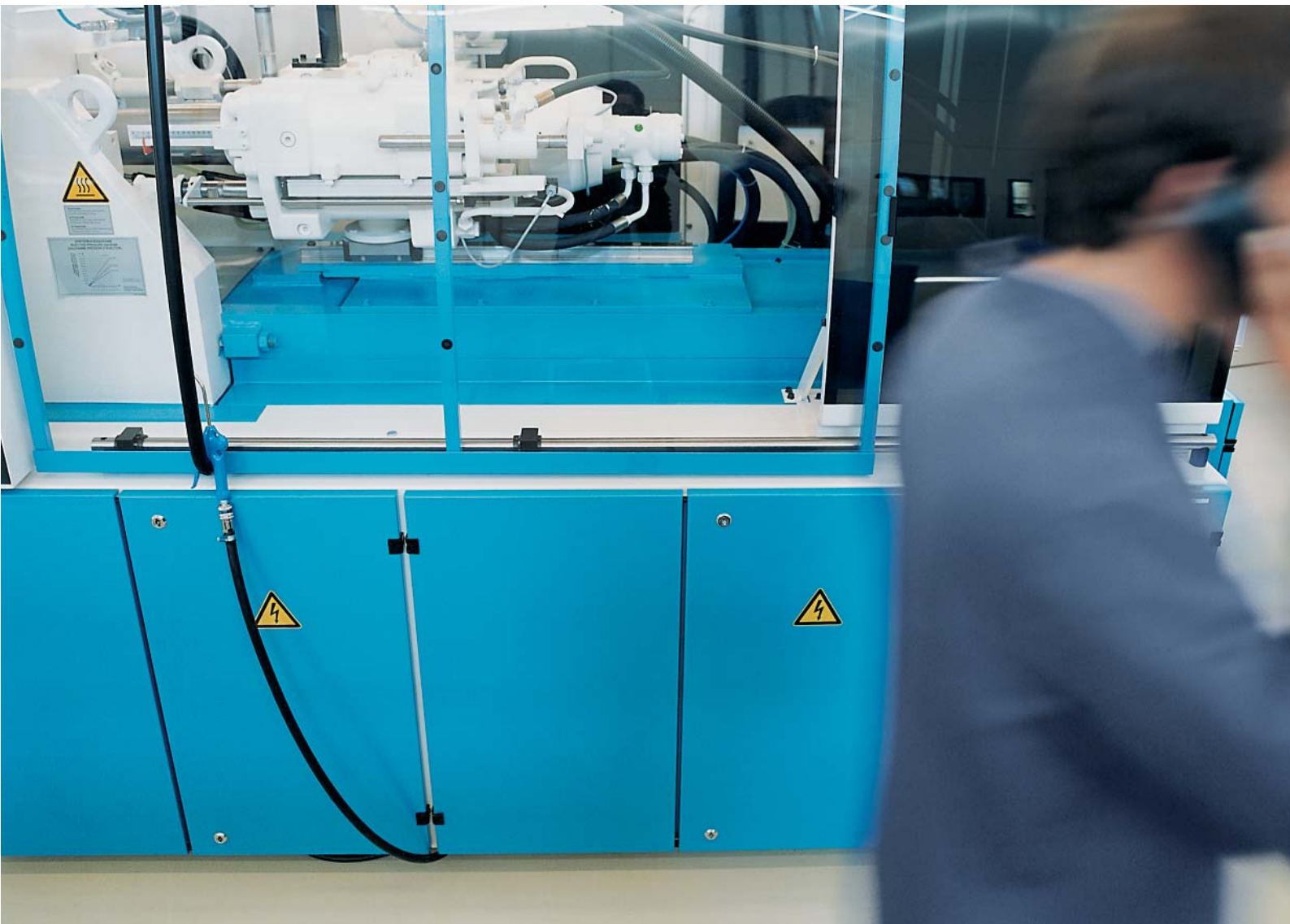
In the one-shot process, the article is molded in a single operation in a two-component injection-molding machine with two cores. In the two-shot process, the thermoplastic part is molded first in a thermoplastics injection-molding machine. While still hot, the part is transferred by gantry robot to the silicone mold of an LSR injection-molding machine, where it is overmolded.

### The advantages at a glance

– Fast and economic production of high-volume parts
– Similar cycle times for processing thermoplastics and liquid silicone rubber
– Consistently good mechanical properties displayed by the composite
– Scrap-free and flash-free production of liquid silicone rubber

[1] For more information, see the brochures *The Grades and Properties of ELASTOSIL® LR Liquid Silicone Rubber* and *Processing of ELASTOSIL® LR Silicone Rubber*.

Silicone rubber is easily processed by injection molding, resulting in high productivity.



# WACKER AT A GLANCE

**WACKER**
**is a technological leader in the chemical and electrochemical industries and a worldwide innovation partner to customers in many key global sectors. With around 14,400 employees, WACKER generated sales of EUR 2.76 billion in 2005. Germany accounted for 21 % of sales, Europe (excluding Germany) for 31 %, the Americas for 22 % and Asia-Pacific, including the rest of the world, for 26 %. Headquartered in Munich, Germany, WACKER has some 20 production sites worldwide and a global network of over 100 sales offices.**
**With R&D spending at 5.3 % of sales in 2005, WACKER is among the world s most research-intensive chemical companies.**

**WACKER SILICONES**
is a leading supplier of complete silicone-based solutions that comprise products, services and conceptual approaches. As a provider of solutions, the business division helps customers press ahead with innovations, exploit global markets fully, and optimize business processes to reduce overall costs and boost productivity. Silicones are the basis for products offering highly diverse properties for virtually unlimited fields of application, ranging from the automotive, construction, chemical, electrical engineering and electronics industries, through pulp and paper, cosmetics, consumer care and textiles, to mechanical engineering and metal processing.

**WACKER POLYMERS**
is the global leader for high-quality binders and polymer additives. This business division s activities encompass construction chemicals and functional polymers for lacquers, surface coatings and other industrial applications, as well as basic chemicals, i. e. acetyls. Products such as dispersible polymer powders, dispersions, solid resins, powder binders and surface coating resins from WACKER POLYMERS are used in the construction, automotive, paper and adhesives industries, as well as by manufacturers of printing inks and industrial coatings.

**WACKER FINE CHEMICALS**
is an expert in organic synthesis, silane chemistry and biotechnology, providing tailored solutions for its customers in the life sciences and consumer care industries. The range of innovative products includes complex organic intermediates, organosilanes, chiral products, cyclodextrins and amino acids. With its comprehensive expertise, WACKER FINE CHEMICALS is a preferred partner for highly challenging custom-manufacturing projects in the fields of chemistry and biotechnology.

**WACKER POLYSILICON**
has been producing hyperpure silicon for the semiconductor and photovoltaics industries for over 50 years. As one of the largest global manufacturers of polycrystalline silicon, WACKER POLYSILICON supplies leading wafer and solar-cell manufacturers.

**Siltronic**
is one of the world s leading producers of hyperpure silicon wafers, supplying many major chip manufacturers. Siltronic develops and produces wafers up to 300 mm in diameter at facilities in Europe, the USA, Asia and Japan. Silicon wafers form the basis of state-of-the-art micro and nanoelectronics used, for example, in computers, telecommunications, motor vehicles, medical technology, consumer electronics and control systems.

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WACKER

CREATING TOMORROW S SOLUTIONS

The data presented in this brochure are in accordance with the present state of our knowledge, but do not absolve the user from carefully checking all supplies immediately upon receipt. We reserve the right to alter product constants within the scope of technical progress or new developments. The information given in this brochure should be checked by preliminary trials because of conditions during processing over which we have no control, especially where other companies' raw materials are also being used. The information provided by us does not absolve the user from the obligation of investigating the possibility of infringement of third parties' rights and, if necessary, clarifying the position. Recommendations for use do not constitute a warranty, either express or implied, of the fitness or suitability of the product for a particular purpose.

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WACKER SILICONES

ELASTOSIL®

# SILICONPRODUKTE FÜR DIE ELEKTRONIKINDUSTRIE.

CREATING TOMORROW'S SOLUTIONS

# DIE EIGENSCHAFTEN VON SILICON-GELEN IM ÜBERBLICK.

| 2-Komponenten-additionsvernetzend | | | [g/cm³] | [mPa·s] | | | |
|---|---|---|---|---|---|---|---|
| **Produkt** | **Eigenschaften** | **Farbe** | **Dichte** | **Viskosität** | **Mischungs-verhältnis** | **Topfzeit / Haut-bildungszeit** | **Aushärtungszeit** |
| SEMICOSIL® 900 LT | Thixotropes Tieftemperaturgel, spezifizierter Ionengehalt | Transparent | 1,00 | 15.000 | 1 : 1 | 2 h | 12 h/23 °C bzw. 10 min/120 °C |
| SEMICOSIL® 905 | Lange Topfzeit, spezifizierter Ionengehalt | Bräunlich | 0,96 | 200 | 1 : 1 | 6 h | 48 h/23 °C bzw. 30 min/120 °C |
| SEMICOSIL® 911 | Thixotrop, spezifizierter Ionengehalt, reduziertes Ausblutverhalten, reduzierter Gehalt an niederflüchtigen Bestandteilen | Transparent | 1,00 | 8.500 | 1 : 1 | 1 h | 5 min/100 °C bzw. 2 min/130 °C |
| SEMICOSIL® 913 | Lichtundurchlässig, Eigenklebrigkeit, gutes Dämpfungsverhalten, spezifizierter Ionengehalt | Schwarz | 0,97 | 1.000 | 1 : 1 | 45 min | 2 h/23 °C bzw. 2 min/120 °C |
| SEMICOSIL® 921 | Hochtransparent, druckabhängige Eigenhaftung, gutes Dämpfungsverhalten | Transparent | 0,97 | 700 | 1 : 1 | 90 min | 24 h/25 °C bzw. 15 min/125 °C |
| SEMICOSIL® 9212 | Hochtransparent, druckabhängige Eigenhaftung, gutes Dämpfungsverhalten | Transparent | 0,97 | 700 | 1 : 1 | 8 h | 24 h/25 °C bzw. 15 min/125 °C |
| WACKER SilGel 610 | Sehr weich | Transparent | 0,96 | 7.000 | 1 : 1 | 1 h | 4 h/23 °C bzw. 5 min/120 °C |
| WACKER SilGel 611 white | Eigenklebrigkeit, gutes Dämpfungsverhalten | Weiß | 0,96 | 1.000 | 1 : 1 | 50 min | 6 h/23 °C bzw. 10 min/120 °C |
| WACKER SilGel 612 | Hochtransparent, Eigenklebrigkeit, gutes Dämpfungsverhalten | Transparent | 0,96 | 1.000 | 1 : 1 | 2,5 h | 8 h/23 °C bzw. 10 min/120 °C |
| WACKER SilGel 612 EH | Transparent, schnelle Aushärtung, gutes Dämpfungsverhalten, geringe Inhibierungsgefahr | Bräunlich | 0,96 | 1.000 | 1 : 1 | 30 min | 2 h/23 °C bzw. 3 min/120 °C |
| WACKER SilGel 614 | Ausgezeichnete Mechanik | Transparent | 0,96 | 7.000 | 1 : 1 | 1 h | 4 h/23 °C bzw. 5 min/120 °C |

Die gemachten Angaben dienen nur zur Orientierung und nicht zur Vorbereitung von Produktspezifikationen.

| [mm/10] | [m/mK] | [kV/mm] | [ε] | | [Ω·cm] | [W/mK] | [Monate] | |
|---|---|---|---|---|---|---|---|---|
| Penetration | CTE | Durchschlag-festigkeit | Dielektrizitäts-konstante | Dielektrischer Verlustfaktor | Spezifischer Durchgangs-widerstand | Wärme-leitfähigkeit | Lagerbe-ständigkeit | Verfügbarkeit |
| 70 | 3E–04 | 23 | 3,0 | 5E–03 | 1E + 16 | 0,2 | 12 | a. A. |
| 70 | 3E–04 | 23 | 2,7 | 1E–03 | 1E + 16 | 0,2 | 12 | a. A. |
| 60 | 3E–04 | 23 | 2,7 | 1E–03 | 1E + 16 | 0,2 | 12 | a. A. |
| 70 | 3E–04 | 23 | 3,0 | 6E–03 | 1E + 16 | 0,2 | 6 | a. A. |
| a. A. | 3E–04 | 22 | 2,5 | 1E–03 | 1E + 14 | 0,2 | 12 | a. A. |
| a. A. | 1E–04 | 22 | 2,5 | 1E–03 | 1E + 14 | 0,2 | 12 | a. A. |
| 90 | 3E–04 | 23 | 2,8 | 1E–03 | 1E + 16 | 0,2 | 12 | a. A. |
| 30 | 3E–04 | 23 | 2,8 | 1E–03 | 1E + 16 | 0,2 | 12 | a. A. |
| 75 | 3E–04 | 23 | 2,7 | 1E–03 | 1E + 16 | 0,2 | 12 | ja |
| 30 | 3E–04 | 23 | 2,8 | 1E–03 | 1E + 16 | 0,2 | 12 | a. A. |
| 30 | 3E–04 | 23 | 2,8 | 1E–03 | 1E + 16 | 0,2 | 12 | a. A. |

| 1-Komponenten-additionsvernetzend | | | [g/cm³] | [mPa·s] | | | |
|---|---|---|---|---|---|---|---|
| **Produkt** | **Eigenschaften** | **Farbe** | **Dichte** | **Viskosität** | **Mischungs-verhältnis** | **Topfzeit / Haut-bildungszeit** | **Aushärtungszeit** |
| SEMICOSIL® 924 | Thixotrop, thermisch härtend, spezifizierter Ionengehalt, reduziertes Ausblutverhalten, reduzierter Gehalt an niederflüchtigen Siloxanen | Transluzent | 1,00 | 35.000 | n. a. | n. a. | 4 h/100 °C bzw. 10 min/150 °C |
| SEMICOSIL® 9242 | UV-fluoreszierende Version von SEM. 924, niedrigere Viskosität vs. SEM. 924 | Transluzent | 0,98 | 20.000 | n. a. | n. a. | 4 h/100 °C bzw. 10 min/150 °C |
| SEMICOSIL® 925 | Ready-to-use, thermisch härtend, gutes Dämpfungsverhalten | Transparent | 0,97 | 700 | n. a. | n. a. | 35 min/100 °C bzw. 3 min/150 °C |
| SEMICOSIL® 926 | Sehr niedrige Viskosität, spezifizierter Ionengehalt | Transluzent | 0,96 | 150 | n. a. | n. a. | 4 h/100 °C bzw. 10 min/150 °C |
| SEMICOSIL® 927 F | Fluorsilicongel, thixotrop, thermisch härtend, spezifizierter Ionengehalt | Transluzent | 1,27 | 6.000 | n. a. | n. a. | 4 h/100 °C bzw. 30 min/150 °C |

Die gemachten Angaben dienen nur zur Orientierung und nicht zur Vorbereitung von Produktspezifikationen.

| [mm/10] | [m/mK] | [kV/mm] | [ε] | | [Ω·cm] | [W/mK] | [Monate] | |
|---|---|---|---|---|---|---|---|---|
| **Penetration** | **CTE** | **Durchschlag-festigkeit** | **Dielektrizitäts-konstante** | **Dielektrischer Verlustfaktor** | **Spezifischer Durchgangs-widerstand** | **Wärme-leitfähigkeit** | **Lagerbe-ständigkeit** | **Verfügbarkeit** |
| 50 | 3E–04 | 23 | 2,7 | 1E–03 | 1E + 16 | 0,2 | 3 | a. A. |
| 50 | 3E–04 | 23 | 2,7 | 1E–03 | 1E + 16 | 0,2 | 3 | a. A. |
| 60 | 3E–04 | 23 | n. a. | n. a. | 1E + 16 | 0,2 | 3 | a. A. |
| 60 | 3E–04 | 23 | 2,7 | 1E–03 | 1E + 16 | 0,2 | 3 | a. A. |
| 60 | 3E–04 | 23 | n. a. | n. a. | 1E + 16 | 0,2 | 3 | a. A. |

# SILICONE ZUM VERGIESSEN UND EINBETTEN.

| 2-Komponenten-kondensationsvernetzend | | | [g/cm³] | [mPa·s] | | | |
|---|---|---|---|---|---|---|---|
| **Produkt** | **Eigenschaften** | **Farbe** | **Dichte** | **Viskosität** | **Mischungs-verhältnis** | **Topfzeit / Haut-bildungszeit** | **Aushärtungszeit** |
| ELASTOSIL® RT 563 | Allround-Vergussmasse | Beige | 1,27 | 3.500 | 100 : 4 | 40 min | 24 h/23 °C |
| ELASTOSIL® RT K | Allround-Vergussmasse | Grau | 1,22 | 7.000 | 100 : 4 | 150 min | 7 h/23 °C |
| ELASTOSIL® RT 426 | Allround-Vergussmasse | Rotbraun | 1,44 | 10.000 | 100 : 4 | 60 min | 24 h/23 °C |
| ELASTOSIL® RT 428 | Allround-Vergussmasse | Rotbraun | 1,53 | 10.000 | 100 : 4 | 60 min | 24 h/23 °C |
| ELASTOSIL® RT 2100 | Ausgezeichnete Hitzestabilität | Rotbraun | 1,49 | 15.000 | 100 : 0,3 | 120 min | 24 h/23 °C |

| 2-Komponenten-additionsvernetzend | | | [g/cm³] | [mPa·s] | | | |
|---|---|---|---|---|---|---|---|
| ELASTOSIL® RT 601 | Allround-Vergussmasse, hochtransparent | Transparent | 1,02 | 3.500 | 9 : 1 | 90 min | 24 h/23 °C bzw. 10 min/100 °C |
| ELASTOSIL® RT 602 | Allround-Vergussmasse, gute Hitzestabilität | Beige | 1,17 | 3.500 | 9 : 1 | 80 min | 24 h/23 °C bzw. 10 min/100 °C |
| ELASTOSIL® RT 604 | Hochtransparent | Transparent | 0,96 | 800 | 9 : 1 | 90 min | 24 h/23 °C bzw. 8 min/100 °C |
| ELASTOSIL® RT 607 | Allround-Vergussmasse, schwer brennbar, gute Hitzestabilität | Rotbraun | 1,43 | 10.000 | 9 : 1 | 80 min | 24 h/23 °C bzw. 5 min/100 °C |
| ELASTOSIL® RT 622 | Allround-Vergussmasse, Eignung für die Herstellung technischer Formteile, sehr gute Mechanik | Rotbraun | 1,13 | 12.000 | 9 : 1 | 60 min | 24 h/23 °C bzw. 10 min/100 °C |
| ELASTOSIL® RT 624 | Vergussmasse, Eignung für Injection-Molding | Transluzent | 1,05 | 50.000 | 1 : 1 | 24 h | 24 h/23 °C bzw. 10 min/100 °C |
| ELASTOSIL® RT 625 | Allround-Vergussmasse, Eignung für die Herstellung technischer Formteile, sehr gute Mechanik | Transluzent | 1,10 | 35.000 | 9 : 1 | 60 min | 24 h/23 °C bzw. 10 min/100 °C |
| ELASTOSIL® RT 628 | Eignung für die Herstellung technischer Formteile, gute Mechanik | Grau | 1,23 | 40.000 | 9 : 1 | 70 min | 24 h/23 °C bzw. 10 min/100 °C |
| ELASTOSIL® RT 675 | Sehr hohe Wärmeleitfähigkeit | Rotbraun | 2,30 | 35.000 | 1 : 1 | 150 min | 60 min/70 °C bzw. 10 min/150 °C |
| ELASTOSIL® RT 743LV | Thermisch härtend, sehr niedrige Viskosität, reduzierter Gehalt an niederflüchtigen Siloxanen | Grau | 1,45 | 1.300 | 1 : 1 | 8 h | 60 min/120 °C bzw. 20 min/150 °C |
| ELASTOSIL® RT 743LV-K | Thermisch härtend, sehr niedrige Viskosität, reduzierter Gehalt an niederflüchtigen Siloxanen, geringe Inhibierungsgefahr | Grau | 1,45 | 1.300 | 1 : 1 | 4 h | 40 min/120 °C bzw. 10 min/150 °C |

Die gemachten Angaben dienen nur zur Orientierung und nicht zur Vorbereitung von Produktspezifikationen.

| | [N/mm²] | [%] | [N/mm] | [m/mK] | [kV/mm] | [ε] | | [Ω·cm] | | [W/mK] | [Monate] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Härte Shore A | Reiß-festigkeit | Reiß-dehnung | Weiterreiß-widerstand | CTE | Durchschlag-festigkeit | Dielektrizitäts-konstante | Dielektrischer Verlustfaktor | Spezifischer Durchgangs-widerstand | CTI | Wärme-leitfähigkeit | Lagerbe-ständigkeit | Verfüg-barkeit |
| 55 | 4,5 | 120 | 3,0 | 3E–04 | 23 | 2,8 | 8E–03 | 6E + 13 | >600 | 0,3 | 12 | Ja |
| 45 | 2,0 | 130 | a. A. | 3E–04 | 23 | 3,3 | 3E–02 | 1E + 14 | >600 | 0,3 | 12 | Ja |
| 55 | 4,5 | 120 | 5,5 | 2E–04 | 23 | 3,7 | 2E–02 | 1E + 14 | >600 | 0,4 | 12 | Ja |
| 70 | 6,0 | 90 | 5,0 | 2E–04 | 23 | 3,5 | 2E–02 | 1E + 13 | >600 | 0,5 | 12 | Ja |
| 60 | 5,2 | 130 | 4,4 | 2E–04 | 20 | 4,0 | 7E–03 | 1E + 15 | >600 | 0,3 | 12 | a. A. |

| | [N/mm²] | [%] | [N/mm] | [m/mK] | [kV/mm] | [ε] | | [Ω·cm] | | [W/mK] | [Monate] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 45 | 7,0 | 100 | 3,0 | 3E–04 | 23 | 2,8 | 1E–03 | 1E + 15 | >600 | 0,2 | 12 | Ja |
| 30 | 1,5 | 130 | n. a. | 3E–04 | 23 | 3,1 | 5E–02 | 1E + 15 | >600 | 0,2 | 12 | Ja |
| 25 | n. a. | n. a. | n. a. | 3E–04 | 23 | 2,7 | 2E–03 | 1E + 15 | >600 | 0,2 | 12 | Ja |
| 55 | 3,5 | 100 | 4,0 | 3E–04 | 23 | 3,7 | 4E–02 | 1E + 15 | >600 | 0,4 | 12 | Ja |
| 27 | 6,5 | 550 | 30,0 | 3E–04 | 23 | 3,2 | 5E–03 | 1E + 15 | >600 | 0,2 | 12 | Ja |
| 40 | 5,0 | 300 | 12,0 | 3E–04 | 23 | 3,2 | 5E–03 | 1E + 15 | >600 | 0,2 | 12 | Ja |
| 25 | 6,5 | 600 | 30,0 | 3E–04 | 23 | 3,2 | 5E–03 | 1E + 15 | >600 | 0,2 | 12 | Ja |
| 50 | 3,5 | 230 | 11,0 | 3E–04 | 23 | 3,2 | 6E–03 | 1E + 15 | >600 | 0,3 | 12 | Ja |
| 80 | 2,0 | 50 | 8,0 | 2E–04 | 23 | 6,1 | 2E–02 | 1E + 15 | >600 | 1,1 | 12 | Ja |
| 20 | 1,5 | 160 | 2,5 | 3E–04 | 23 | 3,1 | 1E–02 | 1E + 14 | >600 | 0,5 | 9 | Ja |
| 20 | 1,5 | 160 | 2,5 | 3E–04 | 23 | 3,1 | 1E–02 | 1E + 14 | >600 | 0,5 | 9 | Ja |

| 2-Komponenten-additionsvernetzend, selbsthaftend | | | [g/cm³] | [mPa•s] | | | |
|---|---|---|---|---|---|---|---|
| **Produkt** | **Eigenschaften** | **Farbe** | **Dichte** | **Viskosität** | **Mischungs-verhältnis** | **Topfzeit / Haut-bildungszeit** | **Aushärtungszeit** |
| ELASTOSIL® RT 615 | Niedrige Viskosität, geringe Inhibierungsgefahr | Bräunlich | 0,96 | 1.000 | 1 : 1 | 8 h | 60 min/70 °C bzw. 10 min/150 °C |
| ELASTOSIL® RT 741 | Thermisch härtend, mittlere Härte | Grau | 1,35 | 1.000 | 1 : 1 | 24 h | 60 min/100 °C bzw. 15 min/150 °C |
| ELASTOSIL® RT 745 | Niedrige Viskosität, niedrige Härte | Bräunlich | 0,96 | 1.000 | 1 : 1 | 8 h | 60 min/80 °C bzw. 10 min/120 °C |
| ELASTOSIL® RT 745 „S“ | Niedrige Viskosität, sehr niedrige Härte | Bräunlich | 0,96 | 1.000 | 1 : 1 | 8 h | 60 min/80 °C bzw. 10 min/120 °C |
| ELASTOSIL® RT 746 | Niedrige Härte, schnelle Aushärtung | Schwarz | 0,98 | 3.500 | 1 : 1 | 6 h | 6 min/85 °C bzw. 2 min/125 °C |
| SEMICOSIL® 205 | Thermisch härtend, schwer brennbar (UL-94 VO) | Grau | 1,35 | 1.800 | 1 : 1 | 2 h | 15 min/100 °C |
| SEMICOSIL® 210 | Thermisch härtend, weicher Kautschuk | Transparent | 0,98 | 75.000 | 1 : 1 | 1 h | 15 min/100 °C |

Die gemachten Angaben dienen nur zur Orientierung und nicht zur Vorbereitung von Produktspezifikationen.

| | [N/mm²] | [%] | [N/mm] | [m/mK] | [kV/mm] | [ε] | | [Ω·cm] | | [W/mK] | [Monate] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Härte Shore A** | **Reiß-festigkeit** | **Reiß-dehnung** | **Weiterreiß-widerstand** | **CTE** | **Durchschlag-festigkeit** | **Dielektrizitäts-konstante** | **Dielektrischer Verlustfaktor** | **Spezifischer Durchgangs-widerstand** | **CTI** | **Wärme-leitfähigkeit** | **Lagerbe-ständigkeit** | **Verfüg-barkeit** |
| 15 | 0,3 | 200 | n. a. | 3E–04 | 23 | 2,8 | 3E–04 | 1E + 15 | >600 | 0,2 | 12 | Ja |
| 45 | n. a. | n. a. | n. a. | 3E–04 | 23 | 3,7 | 3E–02 | 1E + 14 | >600 | 0,3 | 12 | Ja |
| 15 | 0,3 | 200 | n. a. | 3E–04 | 23 | 2,9 | 4E–03 | 1E + 15 | >600 | 0,2 | 12 | Ja |
| 5 | 0,3 | 650 | n. a. | 3E–04 | 23 | 2,9 | 4E–03 | 1E + 15 | >600 | 0,2 | 12 | Ja |
| 18 | 0,3 | 200 | n. a. | 3E–04 | 23 | 2,9 | 4E–03 | 1E + 15 | >600 | 0,2 | 12 | a. A. |
| 10 | 0,7 | 180 | 1,8 | 3E–04 | 16 | 2,9 | 2E–03 | 1E + 15 | >600 | 0,3 | 12 | a. A. |
| Shore 00 30 | n. a. | n. a. | n. a. | 3E–04 | n. a. | n. a. | n. a. | n. a. | n. a. | 0,2 | 12 | a. A. |

# SILICONE ZUM BESCHICHTEN UND LACKIEREN.

| Conformal Coating, 1-Komponenten-kondensationsvernetzend | | | [g/cm³] | [mPa•s] | | | |
|---|---|---|---|---|---|---|---|
| **Produkt** | **Eigenschaften** | **Farbe** | **Dichte** | **Viskosität** | **Mischungs-verhältnis** | **Topfzeit / Haut-bildungszeit** | **Aushärtungszeit** |
| ELASTOSIL® A 07 | Lösemittelhaltig, aminvernetzend, fließfähig | Transluzent | 1,02 | 9.000 | n. a. | 20 min | 24 h/mm bei 23 °C/50 % RH |
| ELASTOSIL® N 10 | Oximvernetzend, ready-to-use | Transparent | 1,07 | 10.000 | n. a. | 20 min | 24 h/mm bei 23 °C/50 % RH |
| ELASTOSIL® N 2010 | Alkoxyvernetzend, fließfähig, ready-to-use | Transparent | 1,01 | 12.000 | n. a. | 20 min | 24 h/mm bei 23 °C/50 % RH |
| SEMICOSIL® 936 UV | Schnelle UV-Härtung, lösemittelfrei, Schattenhärtung | Transluzent | 1,00 | 8.000 | n. a. | 120 min | UV-Härtung 1 mil/15 sec |
| SEMICOSIL® 964 | Aminvernetzend, 100 % Feststoffgehalt, schnelle Aushärtung durch $CO_2$/$H_2O$-Atmosphäre | Bläulich | 1,00 | 800 | n. a. | 20 min | 5 mil: 20 min bei 25 °C/50 % RH |
| SEMICOSIL® 964 UV/Clear | Aminvernetzend, 100 % Feststoffgehalt, schnelle UV-Härtung | Transparent | 1,00 | 800 | n. a. | 20 min | UV-Härtung 1 mil/75 sec |
| SEMICOSIL® 960 Clear | Ready-to-use, schnelle Härtung, selbsthaftend | Transparent | 0,93 | 4.000 | n. a. | 20 min | 5 mil: 20 min bei 25 °C/50 % RH |
| SEMICOSIL® 960 Red | Ready-to-use, schnelle Härtung, selbsthaftend | Rot | 0,93 | 4.000 | n. a. | 20 min | 5 mil: 20 min bei 25 °C/50 % RH |
| **Conformal Coating, 2-Komponenten-additionsvernetzend** | | | **[g/cm³]** | **[mPa•s]** | | | |
| ELASTOSIL® RT 745 | Niedrige Härte, niedrige Viskosität, selbsthaftend | Bräunlich | 0,98 | 1.000 | 1 : 1 | 8 h | 60 min/80 °C bzw. 10 min/120 °C |
| ELASTOSIL® RT 745 „S“ | Niedrige Härte, niedrige Viskosität, selbsthaftend | Bräunlich | 0,98 | 1.000 | 1 : 1 | 8 h | 60 min/80 °C bzw. 10 min/120 °C |
| SEMICOSIL® 935 | Lange Topfzeit, selbsthaftend, geringe Inhibierungsgefahr | Bräunlich | 0,98 | 3.000 | 1 : 1 | 7 d | 30 min/80 °C bzw. 5 min/150 °C |
| **Junction-Coating** | | | **[g/cm³]** | **[mPa•s]** | | | |
| SEMICOSIL® 992 JC | Thermisch härtend, 1-Kompo-nenten-System, peroxidisch vernetzend, hoch viskos | Weiß | 1,40 | 150.000 | n. a. | n. a. | 2 h/150 °C und 4 h/200 °C |

Die gemachten Angaben dienen nur zur Orientierung und nicht zur Vorbereitung von Produktspezifikationen.

| | [m/mK] | [kV/mm] | [ε] | | [Ω·cm] | [W/mK] | [Monate] | |
|---|---|---|---|---|---|---|---|---|
| **Härte Shore A** | **CTE** | **Durchschlag-festigkeit** | **Dielektrizitäts-konstante** | **Dielektrischer Verlustfaktor** | **Spezifischer Durchgangs-widerstand** | **Wärme-leitfähigkeit** | **Lagerbe-ständigkeit** | **Verfügbarkeit** |
| 20 | 3E–04 | 15 | 2,9 | 4E–03 | 1E + 15 | 0,2 | 6 | ja |
| 25 | 3E–04 | 21 | n. a. | n. a. | 1E + 14 | 0,2 | 9 | ja |
| 25 | 3E–04 | 21 | n. a. | n. a. | 1E + 14 | 0,2 | 9 | ja |
| 30 | 3E–04 | n. a. | n. a. | n. a. | n. a. | 0,2 | 6 | a. A. |
| 27 | 3E–04 | 20 | 2,6 | n. a. | 1E + 15 | 0,2 | 12 | a. A. |
| 27 | 3E–04 | 20 | 2,6 | n. a. | 1E + 15 | 0,2 | 12 | a. A. |
| 25 | 3E–04 | 18 | 2,7 | n. a. | 1E + 15 | 0,2 | 12 | a. A. |
| 25 | 3E–04 | 18 | 2,7 | n. a. | 1E + 15 | 0,2 | 12 | a. A. |

| | [m/mK] | [kV/mm] | [ε] | | [Ω·cm] | [W/mK] | [Monate] | |
|---|---|---|---|---|---|---|---|---|
| 15 | 3E–04 | 23 | 2,8 | 1E–03 | 1E + 15 | 0,2 | 12 | ja |
| 5 | 3E–04 | 23 | 2,8 | 1E–03 | 1E + 15 | 0,2 | 12 | ja |
| 15 | 3E–04 | 23 | 2,8 | 1E–03 | 1E + 15 | 0,2 | 12 | a. A. |

| | [m/mK] | [kV/mm] | [ε] | | [Ω·cm] | [W/mK] | [Monate] | |
|---|---|---|---|---|---|---|---|---|
| 50 | n. a. | 20 | 3,5 | 6E–03 | 1E + 14 | 0,3 | 3 | a. A. |

# SILICONE ZUM KLEBEN, FIXIEREN UND ABDICHTEN.

| 1-Komponenten-kondensationsvernetzend | | | [g/cm³] | [mPa•s] | | |
|---|---|---|---|---|---|---|
| **Produkt** | **Eigenschaften** | **Farbe** | **Dichte** | **Viskosität** | **Topfzeit / Haut-bildungszeit** | **Aushärtungszeit** |
| ELASTOSIL® A 07 | Aminvernetzend, lösemittelhaltig, fließfähig | Transluzent | 1,02 | 9.000 | 10 min | 24 h/mm bei 23 °C/50 % RH |
| ELASTOSIL® A 234 | Aminvernetzend, fließfähig, UL-94 HB (150 °C) | Weiß | 1,21 | 35.000 | 20 min | 24 h/mm bei 23° C/50 % RH |
| ELASTOSIL® A 33 | Aminvernetzend, standfest | Beige | 1,16 | Standfest | 20 min | 24 h/mm bei 23 °C/50 % RH |
| ELASTOSIL® E 4 | Essigsäurevernetzend, niedriger Druckverformungsrest | Transparent | 1,10 | Standfest | 15 min | 24 h/mm bei 23 °C/50 % RH |
| ELASTOSIL® E 41 | Essigsäurevernetzend, fließfähig, lösemittelhaltig | Transparent | 1,09 | 65.000 | 20 min | 24 h/mm bei 23 °C/50 % RH |
| ELASTOSIL® E 43 | Essigsäurevernetzend, selbstnivellierend | Schwarz oder transparent | 1,09 | 350.000 | 15 min | 24 h/mm bei 23 °C/50 % RH |
| ELASTOSIL® E 50 | Essigsäurevernetzend, fließfähig | Transparent | 1,07 | 50.000 | 10 min | 24 h/mm bei 23 °C/50 % RH |
| ELASTOSIL® N 10 | Oximvernetzend, fließfähig | Transparent | 1,07 | 10.000 | 20 min | 24 h/mm bei 23 °C/50 % RH |
| ELASTOSIL® N 179 | Alkoxyvernetzend | Schwarz | 1,25 | Standfest | 25 min | 24 h/mm bei 23 °C/50 % RH |
| ELASTOSIL® N 189 | Aximvernetzend, ölbeständig | Schwarz | 1,10 | Standfest | 30 min | 24 h/mm bei 23 °C/50 % RH |
| ELASTOSIL® N 198 | Oximvernetzend, sehr gute Hitzestabilität | Grau oder schwarz | 1,20 | Standfest | 25 min | 24 h/mm bei 23 °C/50 % RH |
| ELASTOSIL® N 199 | Oximvernetzend, gute Mechanik | Transparent | 1,10 | Standfest | 40 min | 24 h/mm bei 23 °C/50 % RH |
| ELASTOSIL® N 2010 | Alkoxyvernetzend, fließfähig | Transparent | 1,01 | 10.000 | 20 min | 24 h/mm bei 23 °C/50 % RH |
| ELASTOSIL® N 2034 | Alkoxyvernetzend, selbstnivellierend | Grau | 1,15 | 40.000 | 20 min | 24 h/mm bei 23 °C/50 % RH |
| ELASTOSIL® N 2189 | Alkoxyvernetzend, ölbeständig | Schwarz | 1,30 | Standfest | 30 min | 24 h/mm bei 23 °C/50 % RH |
| ELASTOSIL® N 2197 | Alkoxyvernetzend, sehr gute Hitzestabilität | Grau | 1,26 | Standfest | 25 min | 24 h/mm bei 23 °C/50 % RH |
| ELASTOSIL® N 2198 | Alkoxyvernetzend, sehr gute Hitzestabilität | Schwarz | 1,35 | Standfest | 10 min | 24 h/mm bei 23 °C/50 % RH |
| ELASTOSIL® N 2199 | Alkoxyvernetzend, ausgezeichnete Haftung | Transparent | 1,05 | Standfest | 20 min | 24 h/mm bei 23 °C/50 % RH |
| ELASTOSIL® N 9132 | Alkoxyvernetzend, schwer brennbar (UL-94 V0) | Grau oder weiß | 1,28 | Standfest | 15 min | 24 h/mm bei 23 °C/50 % RH |
| SEMICOSIL® 936 UV | Schnelle UV-Härtung, lösemittelfrei, Schattenhärtung | Transluzent | 1,00 | 8.000 | 120 min | 24 h/mm bei 23 °C/50 % RH |
| ELASTOSIL® A95 gray | Thixotrop, weich, gute Dehnungsfähigkeit | Grau | 1,30 | Standfest | 15 min | 24 h/mm bei 23 °C/50 % RH |
| SEMICOSIL® 979 EC | Aminvernetzend, elektrisch leitfähig | Schwarz | 0,92 | Standfest | 10 min | 24 h/mm bei 23 °C/50 % RH |

Die gemachten Angaben dienen nur zur Orientierung und nicht zur Vorbereitung von Produktspezifikationen.

| | [N/mm²] | [%] | [m/mK] | [kV/mm] | [Ω·cm] | [W/mK] | [Monate] | |
|---|---|---|---|---|---|---|---|---|
| **Härte Shore A** | **Reißfestigkeit** | **Reißdehnung** | **CTE** | **Durchschlags-festigkeit** | **Spezifischer Durchgangs-widerstand** | **Wärme-leitfähigkeit** | **Lagerbe-ständigkeit** | **Verfüg-barkeit** |
| 20 | 1,1 | 300 | 3E–04 | 15 | 1E + 14 | 0,2 | 6 | Ja |
| 36 | 2,2 | 200 | 3E–04 | 23 | 1E + 14 | 0,2 | 9 | Ja |
| 25 | 2,5 | 350 | 3E–04 | 17 | 1E + 14 | 0,2 | 9 | Ja |
| 16 | 1,5 | 600 | 3E–04 | 21 | 1E + 14 | 0,2 | 12 | Ja |
| 30 | 4,5 | 500 | 3E–04 | 21 | 1E + 14 | 0,2 | 12 | Ja |
| 30 | 4,5 | 500 | 3E–04 | 21 | 1E + 14 | 0,2 | 12 | Ja |
| 28 | 3,5 | 400 | 3E–04 | 21 | 1E + 14 | 0,2 | 9 | Ja |
| 25 | 1,6 | 200 | 3E–04 | 21 | 1E + 14 | 0,2 | 9 | Ja |
| 45 | 3,0 | 500 | 3E–04 | 21 | 1E + 14 | 0,2 | 9 | a. A. |
| 32 | 2,0 | 250 | 3E–04 | 21 | 1E + 14 | 0,2 | 9 | Ja |
| 42 | 3,0 | 300 | 3E–04 | 21 | 1E + 14 | 0,2 | 9 | Ja |
| 35 | 4,0 | 450 | 3E–04 | 21 | 1E + 14 | 0,2 | 9 | Ja |
| 25 | 1,0 | 200 | 3E–04 | 21 | 1E + 14 | 0,2 | 6 | Ja |
| 35 | 1,5 | 200 | 3E–04 | 21 | 1E + 14 | 0,2 | 6 | Ja |
| 44 | 2,3 | 250 | 3E–04 | 21 | 1E + 14 | 0,2 | 6 | Ja |
| 35 | 2,5 | 350 | 3E–04 | 21 | 1E + 14 | 0,2 | 6 | Ja |
| 50 | 2,5 | 250 | 3E–04 | 21 | 1E + 14 | 0,2 | 6 | a. A. |
| 40 | 2,5 | 300 | 3E–04 | 21 | 1E + 14 | 0,2 | 6 | Ja |
| 33 | 2,4 | 600 | 3E–04 | 21 | 1E + 14 | 0,2 | 9 | Ja |
| 30 | n. a. | n. a. | 3E–04 | n. a. | n. a. | 0,2 | 6 | a. A. |
| 18 | n. a. | n. a. | 3E–04 | n. a. | 1E + 14 | 0,2 | 6 | a. A. |
| 35 | 1,5 | 200 | n. a. | n. a. | 10 | n. a. | 12 | a. A. |

| 2-Komponenten-kondensationsvernetzend | | | [g/cm³] | [mPa•s] | | |
|---|---|---|---|---|---|---|
| **Produkt** | **Eigenschaften** | **Farbe** | **Dichte** | **Viskosität** | **Topfzeit / Haut-bildungszeit** | **Aushärtungszeit** |
| ELASTOSIL® RT 771 | Schnelle Aushärtung bei RT, geeignet für FIPG-Anwendungen | grau | 1,45 | 100.000 | 15 min | 2 h/23 °C |
| ELASTOSIL® RT 772 | Schnelle Aushärtung bei RT, UL-94 HB (200 °C), sehr gute Hitzestabilität | grau | 1,27 | 30.000 | 12 min | 2 h/23 °C |
| ELASTOSIL® RT 778 | Schnelle Aushärtung bei RT, sehr gute Hitzestabilität | schwarz | 1,30 | standfest | 6 min | 1 h/23 °C |
| **1-Komponenten-additionsvernetzend** | | | **[g/cm³]** | **[mPa•s]** | | |
| ELASTOSIL® RT 705 | Thermisch härtend, sehr gute Hitzestabilität, UL-94 HB | Schwarz | 1,23 | 100.000 | n. a. | 20 min/140 °C bzw. 3 min/200 °C |
| ELASTOSIL® RT 705 F | Thermisch härtend, sehr gute Hitzestabilität | Schwarz | 1,23 | 50.000 | n. a. | 20 min/140 °C bzw. 3 min/200 °C |
| ELASTOSIL® RT 706 | Thermisch härtend, sehr gute Hitzestabilität, UL-94 HB | Rot | 1,23 | 80.000 | n. a. | 10 min/140 °C bzw. 3 min/200 °C |
| ELASTOSIL® RT 707 | Thermisch härtend, sehr gute Hitzestabilität, UL-94 HB | Weiß | 1,12 | 65.000 | n. a. | 10 min/140 °C bzw. 3 min/200 °C |
| ELASTOSIL® RT 710 | Thermisch härtend, kompressibel | Weiß | 0,75 | 10.000 | n. a. | 30 min/130 °C bzw. 10 min/150 °C |
| ELASTOSIL® RT 713 | Thermisch härtend, kompressibel (UL-94 VO) | Grau | 0,75 | Standfest | n. a. | 30 min/130 °C bzw. 10 min/150 °C |
| ELASTOSIL® RT 715 | Thermisch härtend, kompressibel | Grau | 0,50 | Standfest | n. a. | 30 min/130 °C bzw. 10 min/150 °C |
| SEMICOSIL® 971 TC | Thermisch härtend, hohe thermische Leitfähigkeit | Weiß | 2,75 | Standfest | n. a. | 30 min/125 °C bzw. 10 min/150 °C |
| SEMICOSIL® 986/1K | Thermisch härtend, UV-fluoreszierend | Transluzent | 1,10 | Standfest | n. a. | 1 h/130 °C bzw. 10 min/150 °C |
| SEMICOSIL® 987 GR | Thermisch härtend, graue Version von SEM. 987, ausgezeichnete Haftung | Grau | 1,07 | Standfest | n. a. | 1 h/115 °C bzw. 10 min/150 °C |
| SEMICOSIL® 987/1K | Thermisch härtend, sehr gute Haftung | Transluzent | 1,10 | Standfest | n. a. | 1 h/130 °C bzw. 10 min/150 °C |
| SEMICOSIL® 987/1K gray | Thermisch härtend, Graue Version von SEM. 987/1K | Grau | 1,07 | Standfest | n. a. | 1 h/130 °C bzw. 10 min/150 °C |
| SEMICOSIL® 988/1K | Thermisch härtend, CIPG-Anwendungen | Transluzent | 1,10 | Standfest | n. a. | 1 h/130 °C bzw. 10 min/150 °C |
| SEMICOSIL® 988/1K gray | Thermisch härtend, CIPG-Anwendungen | Grau | 1,10 | Standfest | n. a. | 1 h/130 °C bzw. 10 min/150 °C |
| SEMICOSIL 989/1K | Thermisch härtend, sehr gute Haftung | Transluzent | 1,10 | Standfest | n. a. | 1 h/130 °C bzw. 10 min/150 °C |

Die gemachten Angaben dienen nur zur Orientierung und nicht zur Vorbereitung von Produktspezifikationen.

| | [N/mm²] | [%] | [m/mK] | [kV/mm] | [Ω·cm] | [W/mK] | [Monate] | |
|---|---|---|---|---|---|---|---|---|
| **Härte Shore A** | **Reißfestigkeit** | **Reißdehnung** | **CTE** | **Durchschlags-festigkeit** | **Spezifischer Durchgangs-widerstand** | **Wärme-leitfähigkeit** | **Lagerbe-ständigkeit** | **Verfüg-barkeit** |
| 50 | 1,0 | 180 | 3E–04 | 23 | 1E + 14 | 0,2 | 12 | a. A. |
| 35 | 2,1 | 250 | 3E–04 | 23 | 1E + 14 | 0,2 | 12 | a. A. |
| 50 | 3,5 | 200 | 3E–04 | 23 | 1E + 14 | 0,2 | 12 | a. A. |

| | [N/mm²] | [%] | [m/mK] | [kV/mm] | [Ω·cm] | [W/mK] | [Monate] | |
|---|---|---|---|---|---|---|---|---|
| 45 | 3,0 | 300 | 3E–04 | 23 | 1E + 14 | 0,2 | 6 | a. A. |
| 36 | 3,5 | 220 | 3E–04 | 23 | 1E + 14 | 0,2 | 6 | a. A. |
| 45 | 3,0 | 250 | 3E–04 | 23 | 1E + 14 | 0,2 | 6 | a. A. |
| 37 | 2,5 | 250 | 3E–04 | 23 | 1E + 14 | 0,2 | 6 | a. A. |
| 10 | n. a. | n. a. | n. a. | 23 | 1E + 14 | n. a. | 6 | a. A. |
| 23 | 1,5 | 350 | n. a. | 23 | 1E + 14 | n. a. | 6 | a. A. |
| 35 | 1,5 | 350 | n. a. | 23 | 1E + 14 | n. a. | 6 | a. A. |
| 75 | 3,0 | 70 | 0,95E–04 | 17 | 1E + 14 | 1,9 | 6 | a. A. |
| 50 | 5,0 | 250 | 3E–04 | 23 | 1E + 14 | 0,2 | 6 | a. A. |
| 50 | 5,0 | 250 | 3E–04 | 23 | 1E + 14 | 0,2 | 6 | a. A. |
| 50 | 5,0 | 250 | 3E–04 | 23 | 1E + 14 | 0,2 | 6 | a. A. |
| 50 | 5,0 | 250 | 3E–04 | 23 | 1E + 14 | 0,2 | 6 | a. A. |
| 35 | 5,0 | 250 | 3E–04 | 23 | 1E + 14 | 0,2 | 6 | a. A. |
| 35 | 5,0 | 250 | 3E–04 | 23 | 1E + 14 | 0,2 | 6 | a. A. |
| 55 | | 200 | | | 1E + 14 | 0,2 | 6 | |

Die in dieser Broschüre mitgeteilten Daten entsprechen dem derzeitigen Stand. Der Abnehmer ist von sorgfältigen Eingangsprüfungen im Einzelfall hierdurch nicht entbunden. Änderungen der Produktkennzahlen im Rahmen des technischen Fortschritts oder durch betrieblich bedingte Weiterentwicklungen behalten wir uns vor. Die in dieser Broschüre gegebenen Hinweise und Informationen erfordern wegen durch uns nicht beeinflussbarer Faktoren während der Verarbeitung, insbesondere bei der Verwendung von Rohstoffen Dritter, eigene Prüfungen und Versuche. Unsere Hinweise und Informationen entbinden nicht von der Verpflichtung, eine eventuelle Verletzung von Schutzrechten Dritter selbst zu überprüfen und gegebenenfalls zu beseitigen. Verwendungsvorschläge begründen keine Zusicherung der Eignung für einen bestimmten Einsatzzweck.

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