wevo

CUSTOMISED SILICONE SOLUTIONS

WEVOSIL FOR ELECTRICAL AND ELECTRONIC APPLICATIONS

wevo

SIL

High-performance electrical and electronic parts in a wide range of industries are protected by the tailor-made silicones, polyurethanes and epoxies developed by Wevo.

These base chemistries fulfil similar requirements, e. g. curing profiles, flame retardancy and electrical properties. However, each chemistry typically incurs a technical trade-off to achieve certain specifications. Silicones are particularly characterised by their resistance to fire and high temperatures. At the same time, they offer special possibilities due to their unique elasticity and flexibility.

Accordingly, our WEVOSIL products are used in applications where a wide operating temperature range is required. In addition, they also offer high elasticity. This not only makes them suitable for use in mechanically demanding applications – combined with their high thermal conductivity, they offer ideal solutions for efficient thermal management and targeted heat dissipation, too. Moreover, many WEVOSIL products are also flame retardant and have UL 94 approval. Their good adaptability to process and curing time targets enables high flexibility in production processes.

SILICONES AT THEIR BEST

Our 80 years of experience form the basis for great filler know-how and the development of application-specific formulations, as well as for the production of chemical products in large quantities – always guaranteeing uncompromised quality according to international standard IATF 16949.

As an expert partner, if requested, we accompany our customers from the product idea to series production. This is how we create our portfolio of state-of-the-art formulated silicone products that meet our customers' individual needs.

All WEVOSIL products offer the advantages of the addition-curing RTV-2 silicone systems for your application, using platinum as a catalyst.

CLEAN AND PRECISE:

- **No byproducts:** no smell, no corrosion
- **No shrinkage (< 0.1%):** dimensional stability
- **Widely adjustable:** curing speed, rheology, hardness and reactivity
- **Excellent electrical, thermal and mechanical properties**

KEY PROPERTIES AFTER CURING

The high bond energy between the silicon and oxygen atoms of siloxanes compared with an organic polymer backbone is responsible for the high temperature and UV resistance of silicone materials.

SUPERIOR RESISTANCE

- High temperature resistance: all silicones up to +180 °C; with additives, special formulations up to 250–300 °C
- High radiation resistance (incl. microwaves and UV)
- Very good resistance to outdoor conditions such as weathering, corona discharge and ozone
- Nearly constant mechanical (elastomeric) properties in the very wide temperature range of -55 °C up to +180 °C
- Excellent fire/burning behaviour: low toxicity of smoke and fumes; flame retardancy is possible

EXTREME VERSATILITY

- Low Tg: ~ -55 °C
- Biocompatible, non-toxic, non-hazardous
- Transparent or translucent if unfilled and uncoloured
- Hydrophobic; low moisture absorption
- Constant electrical (insulating) properties in the very wide temperature range of -55 °C up to +180 °C; formulation of conductive types is possible
- Adjustable adhesive or release properties (by formulation)

Fine-tuning the viscosity and flow behaviour of our silicones to the needs of your application allows for highly precise automatic dispensing.

A CONSISTENT PORTFOLIO

Different applications require different solutions, providing special properties. This is why we have developed a strong portfolio of silicone grades.

GELS

For highly efficient mechanical shock absorption within the most sensitive electronics, such as hybrid PCBs with chips connected by bond wires.

OPTICALLY CLEAR

For potting of LEDs, of LED strips and panels, for optical moulded parts (e.g. lenses, secondary optics).

HIGH TEMPERATURE RESISTANT

Encapsulation and coating of pressure sensitive electrical and electronic components, in applications with very high temperatures of > 200 °C.

ADHESIVES (2-COMPONENT ADDITION-CURING)

For applications with high temperature requirements, available in combination with thermal conductivity, too.

SILICONE ENCAPSULANTS/ POTTING MATERIALS

For comprehensive protection of electronics with general purpose grades, up to effective cooling and thermal management by thermally conductive materials.

THERMALLY CONDUCTIVE GAP FILLERS (PASTY)

For thermal management of large surface connections, where flowability and high dosing speeds are also important, e.g. in electric vehicle batteries.

CHEMICALLY RESISTANT

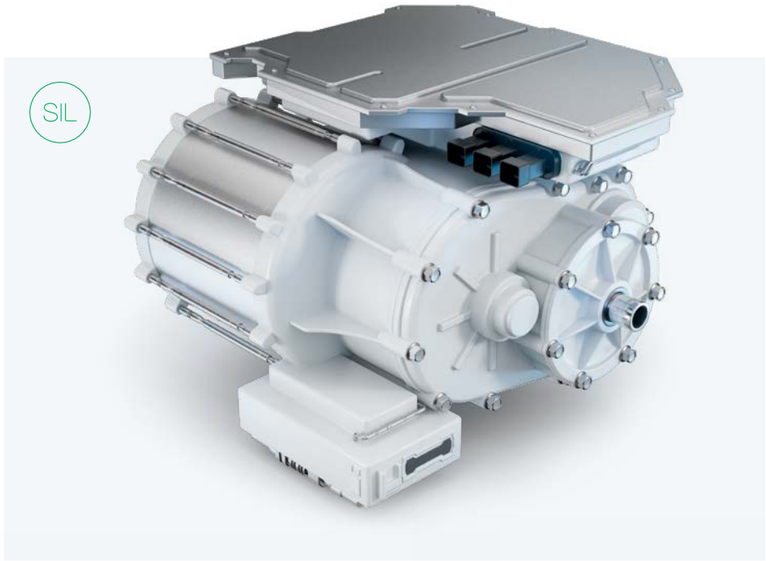
For applications where high resistance to aggressive chemicals in the environment is important, e.g. in automotive power trains and fuel cells or electrolyser stacks.

FLAME-RETARDANT

For applications where low smoke emissions, low toxicity of fumes and self-extinguishing are important.

LSR FOR SCREEN PRINTING

Liquid silicone rubber for screen printing, e.g. for textiles or bipolar plate sealing in fuel cells and electrolysers.

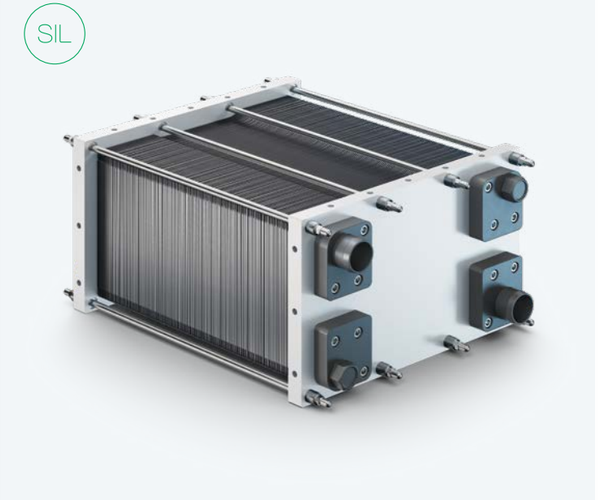


STATOR POTTING

Stators of electric motors get efficient insulation, protection and thermal management by potting for example with WEVOSIL 22015 FL.

BATTERY THERMAL RUNAWAY MITIGATION

Efficient thermal and mechanical barriers by potting or coating with the very flowable WEVOSIL 22027 FL help prevent the cell-to-cell propagation in case of a thermal runaway event. Low-density and highly thermally conductive silicone gap fillers support the efficient thermal management of batteries with high energy densities, also under normal operating conditions.



FUEL CELL AND ELECTROLYSER STACKS

Exceptionally gas-tight gaskets for bipolar plates, applied by dispensing or screen printing, as well as the use of our adhesives and sealants allow through the WEVOSIL 28XXX, 23XXX and 18XXX series design freedom and automatised stack manufacturing, enabling safe and reliable operation of the fuel cell system.

WEVOSIL BENEFITS

Portfolio	Temperature stability	Thermal conductivity	Flowability	Mechanical properties	Adhesion	Electrical properties	Chemical resistance	Flammability UL 94
GELS								
WEVOSIL 20200	●		●●●	gel	●●	●●●	●	–
WEVOSIL 20202/60	●		●●●	gel	●●	●●●	●	–
OPTICALLY CLEAR								
WEVOSIL 20003	●●		●●	●		●●	●	–
WEVOSIL 20002	●●		●	●●●	●	●●	●	–
HIGH TEMPERATURE RESISTANT								
WEVOSIL 22027 FL	●●		●●●	●●		●●	●	V-1
WEVOSIL 22015 FL	●●●	●●	●●	●	●	●●	●	V-0
ADHESIVES (2-COMPONENT ADDITION-CURING)								
WEVOSIL 28001	●●		●	●●●	●●●	●●	●●●	V-1*
WEVOSIL 28102	●●		thixotropic	●●	●●	●●	●●	V-1
WEVOSIL 28015 FL	●●	●●	thixotropic	●	●●	●●	●●	V-0
SILICONE ENCAPSULANTS/POTTING MATERIALS, GENERAL PURPOSE								
WEVOSIL 22006 FL (formerly 20405 FL)	●●	●	●●	●●		●●●	●	V-0*
WEVOSIL 22066 FL	●●	●●	●●●	●		●●	●	V-0

Portfolio	Temperature stability	Thermal conductivity	Flowability	Mechanical properties	Adhesion	Electrical properties	Chemical resistance	Flammability UL 94
SILICONE ENCAPSULANTS/POTTING, THERMAL CONDUCTIVITY UP TO 1.5 W/M·K								
WEVOSIL 22002 FL	●●	●	●●	●●		●●	●	V-0*
WEVOSIL 22102 FL	●●	●	●●	●●		●●	●	V-0
WEVOSIL 22004	●●	●	●	●●●	●	●●	●	–
WEVOSIL 22005 FL	●●	●●	●	●	●	●●	●	V-0
WEVOSIL 22105 FL	●●	●●	●●	●●●	●	●	●	V-0
SILICONE ENCAPSULANTS/POTTING, THERMAL CONDUCTIVITY UP TO 2.8 W/M·K								
WEVOSIL 22007 FL	●	●●	●	●		●●	●	V-0
WEVOSIL 22008 FL	●●	●●●	●	●		●●	●	V-0
THERMALLY CONDUCTIVE GAP FILLERS, HIGH TEMPERATURE RESISTANT								
WEVOSIL 26001 FL	●	●●	thixotropic	●●●		●●	●	V-0
WEVOSIL 26040 FL	●●	●●●	thixotropic	●●		●●	●	V-0
THERMALLY CONDUCTIVE GAP FILLERS, LOW DENSITY								
WEVOSIL 26010 FL	●	●●●	thixotropic	●		●●	●	V-0*
WEVOSIL 26011 FL	●	●●●	thixotropic	●		●●	●	V-0
WEVOSIL 26111 FL	●	●●	thixotropic	●		●●	●	V-0
CHEMICALLY RESISTANT								
WEVOSIL 28001	●●		●	●●●	●●●	●●	●●●	–
FLAME-RETARDANT								
All WEVOSIL grades marked with the FL ending								
LSR FOR SCREEN PRINTING								
WEVOSIL 23010	●●		●	●●●	●●●	●●		–
WEVOSIL 23030	●●		●	●●●	●	●●		–

* UL listing under file No. E108835

→ You can find more information about the Wevo products in the product tables at the end of this brochure.

AS INDIVIDUAL AS YOU ARE

On request, we can work together to develop your individual silicone solution, optimised for your application. From the design phase, through validation, right up to series production – we offer customer support every step along the way.

01

CUSTOMER ADVICE

Together with our team of experts, we look at your needs or your application and define the specifications for your silicone.

02

PRODUCT DEVELOPMENT

The selected silicone is adapted to your application, or we develop a new, customised product for you.

POT LIFE/REACTIVITY:
Widely adjustable, from 1–2 minutes to several hours (for heat curing even up to 1–2 days)

VISCOSITY:
Increasing the mix viscosity or even reaching thixotropy are easily possible

HARDNESS:
Adjustable in a certain range

MECHANICAL PROPERTIES:
Adjustable in a limited range

03

SAMPLE POTTING

Your customised silicone is tested manually or on dispensing equipment until it is optimally adapted to the requirements of your application. This can be done in our Wevo technical centre, on your premises, or at one of our cooperating equipment manufacturers.

04

PRODUCTION

By monitoring manufacturing times and production parameters, scanner-controlled raw material tracking and 100 % control of all batches, we always guarantee consistent quality.

05

LOGISTICS

We provide all shipping methods, including isothermal transportation and customised packaging concepts.

WEVO AS YOUR DEVELOPMENT PARTNER

- Advice during product design
- Advice on process design and adaptation
- Extensive network
- Backup and support during validation
- Adaptation of products to processes

WEVO – TRADITION OF INNOVATION

We are a leading specialist for individual potting compounds as well as adhesives and sealants based on polyurethane, epoxy and silicone.

80 years of experience in development and applications go into each and every one of our products. The outcome: optimum solutions for reliable and safe components.

CERTIFICATIONS AND PRODUCT APPROVALS

Our high-quality products and dependable practice have earned us longstanding business ties with corporations across the globe – with both international corporations and SMEs. Our market position is further strengthened by a range of services from partner corporations in various industries. These extend from electronics, automotive and energy technologies.

REACH SVHC · UL 94 · RTI · DIN EN 60216-1 · IATF 16949 · RoHS · ExPlast · HWI / HAI · DIN EN 45545-2 · ISO 14001 · ISO 45001

WEVO FACTS & FIGURES

1.
ISO/TS 16949 (now: IATF 16949) certified supplier in our sector

> 50
export countries served by Wevo

> 500
Wevo formulations available worldwide

1250
customers use our systems

> 2 bn
components potted, bonded or sealed with Wevo products every year

SHAPING THE FUTURE

WEVO SOLUTIONS FOR GROUNDBREAKING TECHNOLOGIES

Whether it’s potting, bonding or sealing – Wevo’s solutions for components create design freedom and can significantly simplify the manufacturing process. As such, Wevo products create opportunities for a variety of technologies in a wide range of industries.

Wevo gets things moving

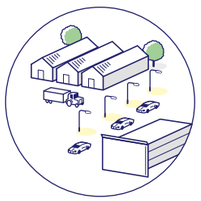
Automotive · Mobility

Protecting electric motors and high-voltage batteries, Wevo’s silicone solutions securely bond cells, mitigate thermal runaway and overheating.

Wevo for secure systems

Energy · Industry · Safety/Security

Silicones from Wevo protect electrical and electronic components in harsh environments and ensure their reliable and undisturbed function.



Wevo provides light

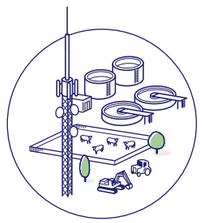
Lighting

Tailor-made gels and transparent potting compounds from Wevo protect your LEDs and further electronic components in luminaires and fixtures against environmental influences.

Wevo is home

Home/Consumer
Health/Medical

Potting, bonding and sealing with silicones from Wevo protects appliances from physical hazards such as moisture or fire, making homes and healthcare safer and smarter.



Wevo stands for reliability

Infrastructure · Environment
Agriculture

Our thermal interface materials and potting compounds are an essential part of the thermal management of the electronics for the growing global market of intelligent monitoring solutions.

wevo

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