

wevo

CUSTOMISED SILICONE SOLUTIONS

WEVOSIL FOR ELECTRICAL AND ELECTRONIC APPLICATIONS





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 tem-

perature 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 more than 75 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 standards such as IATF 16949 and ISO 9001.

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

For thermal mitigation, suppression of heat spreading, suppression of "thermal runaway" of e.g. battery cells.



ADHESIVES (2-COMPONENT ADDITION-CURING)

For potting or sealing, with high temperature requirements.



GENERAL-PURPOSE ENCAPSULANTS/POTTING MATERIALS

For comprehensive protection of electronics against heat, humidity, dust and other particles, mechanical shocks and vibrations, aggressive chemicals.



THERMALLY CONDUCTIVE ENCAPSULANTS/POTTING MATERIALS

For any application where, due to the component geometry, potting is the appropriate solution for cooling and thermal management.



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.



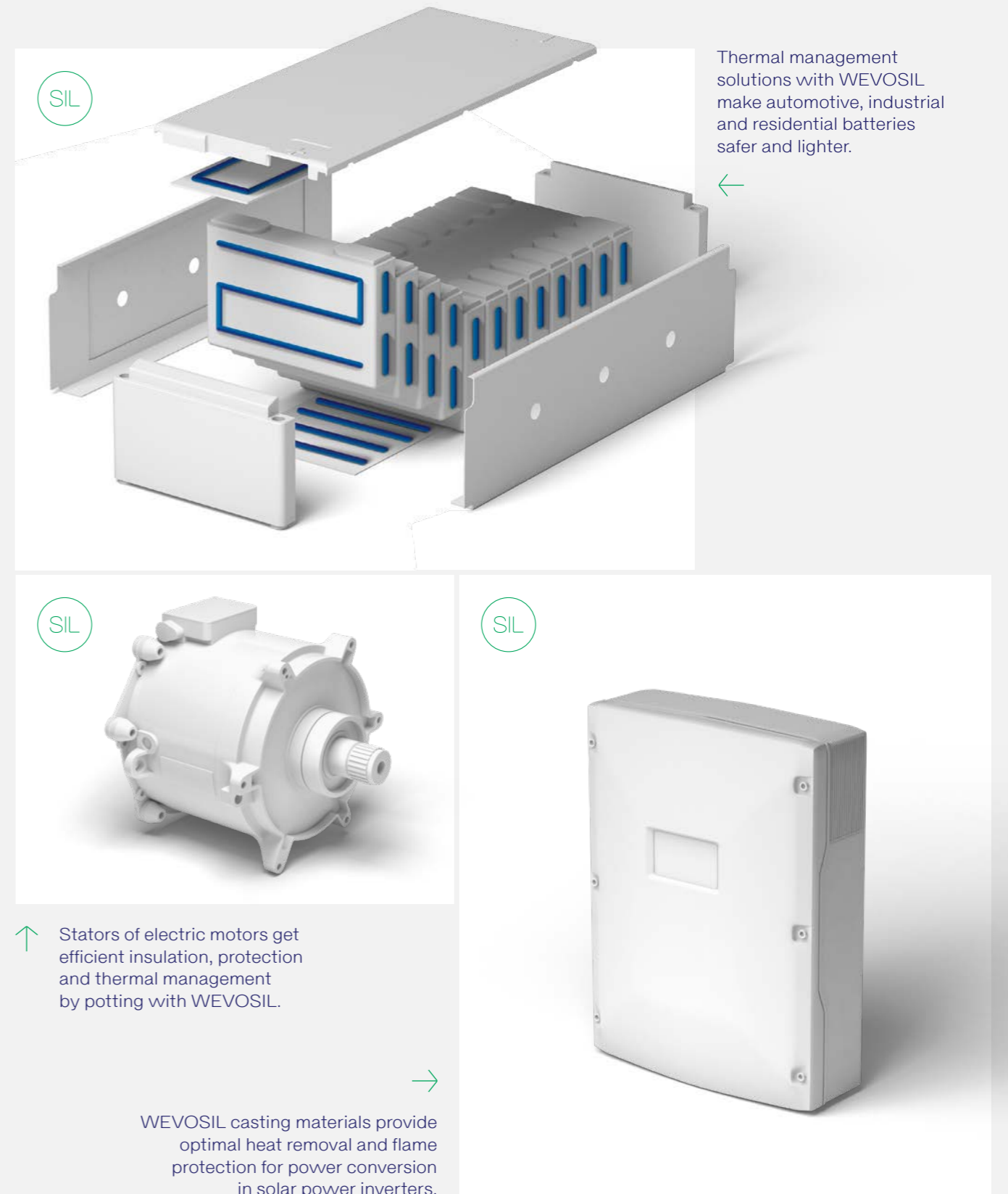
FLAME RETARDANT

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



CHEMICALLY RESISTANT

For applications where high resistance to aggressive chemicals in the environment is important, e.g. in automotive power trains.



Thermal management solutions with WEVOSIL make automotive, industrial and residential batteries safer and lighter.

↑ Stators of electric motors get efficient insulation, protection and thermal management by potting with WEVOSIL.

→ WEVOSIL casting materials provide optimal heat removal and flame protection for power conversion in solar power inverters.

WEVOSIL BENEFITS

Portfolio	Temperature stability	Thermal conductivity	Flowability	Mechanical properties	Adhesion	Electrical properties	Chemical resistance	Flammability
GELS								
WEVOSIL 20200	●		●●●	gel	●●	●●●	●	
WEVOSIL 20202/60	●		●●●	gel	●●	●●●	●	
OPTICALLY CLEAR								
WEVOSIL 20001	●●		●●			●●	●	
WEVOSIL 20002	●●		●	●●●	●	●●	●	
HIGH TEMPERATURE RESISTANT								
WEVOSIL 27001 FL	●●●			●		●●	●	UL 94 V-0
WEVOSIL 27015 FL	●●●	●●	●●	●	●	●●	●	UL 94 V-0
ADHESIVES (2-COMPONENT ADDITION-CURING)								
WEVOSIL 28001	●●		●	●●●	●●●	●●	●●●	UL 94 V-1*
WEVOSIL 28002	●●		thixotropic	●●	●●	●●	●●●	
GENERAL-PURPOSE ENCAPSULANTS/POTTING MATERIALS								
WEVOSIL 22006 FL (formerly 20405 FL)	●●	●	●●	●●		●●●	●	UL 94 V-0*
THERMALLY CONDUCTIVE ENCAPSULANTS/POTTING UP TO 1.5 W/M-K								
WEVOSIL 22002 FL	●●	●	●●	●●		●●	●	UL 94 V-0*
WEVOSIL 22102 FL	●●	●	●●	●●		●●	●	UL 94 V-0
WEVOSIL 22004	●●	●	●	●●●	●	●●	●	
WEVOSIL 22005 FL	●●	●●	●	●	●	●●	●	UL 94 V-0

Portfolio	Temperature stability	Thermal conductivity	Flowability	Mechanical properties	Adhesion	Electrical properties	Chemical resistance	Flammability
THERMALLY CONDUCTIVE ENCAPSULANTS/POTTING UP TO 2.8 W/M-K								
WEVOSIL 22007 FL	●	●●	●	●		●●	●	UL 94 V-0
WEVOSIL 22008 FL	●●	●●●	●	●		●●	●	UL 94 V-0
THERMALLY CONDUCTIVE GAP FILLERS, HIGH TEMPERATURE RESISTANT								
WEVOSIL 26001 FL	●	●●	thixotropic	●●●		●●	●	UL 94 V-0
WEVOSIL 26020 FL	●●	●●●	thixotropic			●●	●	UL 94 V-0*
THERMALLY CONDUCTIVE GAP FILLERS, LOW DENSITY								
WEVOSIL 26010 FL	●	●●●	thixotropic			●●	●	UL 94 V-0*
FLAME RETARDANT								
All WEVOSIL grades marked with the FL ending								
CHEMICALLY RESISTANT								
WEVOSIL 28001	●●		●	●●●	●●●	●●	●●●	

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

* UL listing under file No. E108835

AS INDIVIDUAL AS YOU ARE

Together we can define your individual silicone solution, optimised for your application. From the design phase, through validation, right up to serial production – we offer customer support every step along the way. Let's find the right silicone solution for your project.

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

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



03

SAMPLE CASTING

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 – TRADITION OF INNOVATION

We are a leading specialist in custom casting and potting solutions as well as adhesives and sealants based on polyurethane, epoxy and silicone.

More than 75 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 automotive and machine tools to solar energy.

- 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 resin formulations available worldwide

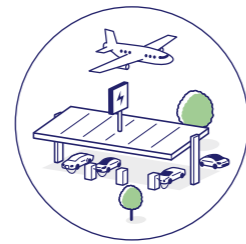
1250
customers use our systems

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

SHAPING THE FUTURE

WEVO SOLUTIONS FOR GROUNDBREAKING TECHNOLOGIES

Whether it's potting, casting, 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 secures energy systems

Energy · Industry · Safety

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



Wevo provides light

Lighting

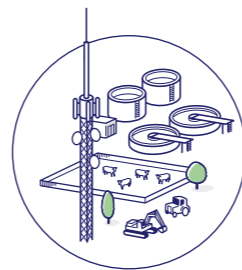
Tailor-made gels and transparent potting compounds from Wevo protect your LEDs and further electronic components in luminaires and fixtures against environmental influences.



Wevo is home

Home/Consumer
Health/Medical

Casting, 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 safety

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.

The manner in which you use and the purpose to which you put and utilise our products, technical assistance and information (whether verbal, written or by way of production evaluations), including any suggested formulations and recommendations, are beyond our control. Therefore, it is imperative that you test our products, technical assistance and information to determine to your own satisfaction whether our products, technical assistance and information are suitable for your intended uses and applications. This application-specific analysis must at least include testing to determine suitability from a technical as well as health, safety and environmental standpoint. Such testing has not necessarily been done by us. Unless we otherwise agree in writing, all products are sold strictly pursuant to the terms of our standard conditions of sale which are available upon request. All information, in particular all technical data and assistance, is given without warranty or guarantee and is subject to change without notice. It is expressly understood and agreed that you assume and hereby expressly release us from all liability, in tort, contract or otherwise, incurred in connection with the use of our products, technical assistance and information. Any statement or recommendation not contained herein is unauthorised and shall not bind us. Nothing herein shall be construed as a recommendation to use any product in conflict with any claim of any patent relative to any material or its use. No licence is implied or in fact granted under the claims of any patent. Copyright 2023 WEVO-CHEMIE GmbH. All rights reserved. Unless otherwise indicated by name, all texts, images and graphics are subject to copyright and other laws for the protection of intellectual property. They may not be copied, changed or used in any other way.

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OVERVIEW OF WEVOSIL PRODUCTS



Product	Mixing ratio (by weight)	Mixed viscosity [mPa·s]	Pot life [min.]	Density [g/cm ³]	Shore hardness [00/A]	Operating temperature up to [°C]	Thermal conductivity ASTM D 5470 [W/m·K]	Flammability UL 94	Dielectric strength [kV/mm]	Volume resistivity [Ω·cm]	Colour
GELS											
WEVOSIL 20200	1:1	500	60	0.98	gel (soft)	180	–	–	> 20	> 10 ¹⁴	transparent
WEVOSIL 20201/60	1:1	500	60	0.98	gel (hard)	180	–	–	> 20	> 10 ¹⁴	transparent
OPTICALLY CLEAR											
WEVOSIL 20001	1:1	1,250	60	0.98	-- / 40	180	0.2	HB	> 25	> 10 ¹⁴	transparent (optically clear)
WEVOSIL 20002	1:1	25,000	135	1.02	-- / 30	180	0.2	HB	> 25	> 10 ¹⁵	transparent (optically clear)
HIGH TEMPERATURE RESISTANT											
WEVOSIL 27001 FL	1:1	6,000	60	1.12	-- / 30	250	0.2	V-0	> 25	> 10 ¹⁴	reddish
WEVOSIL 27015 FL	1:1	3,750	180	2.64	-- / 65	200	2.1	V-0	> 20	> 10 ¹⁴	reddish
ADHESIVES (2-COMPONENT ADDITION-CURING)											
WEVOSIL 28001	1:1	45,000	75	1.30	-- / 65	200	0.5	V-1*	> 30	> 10 ¹⁴	blue
WEVOSIL 28002	1:1	paste-like	75	1.22	-- / 35	200	0.4	V-1	> 25	> 10 ¹⁴	black
GENERAL-PURPOSE ENCAPSULANTS/POTTING MATERIALS											
WEVOSIL 22006 FL (formerly WEVOSIL 20405)	1:1	2,400	105	1.38	-- / 50	180	0.8	V-0*	> 30	> 10 ¹⁴	dark grey

All application parameters refer to processing at room temperature. All mechanical, thermal and electrical properties are based on complete curing.

* UL listing under file No. E108835

For a more detailed technical description of our systems please refer to the corresponding data sheets which are available for all products. Please see our special notes on the back of this sheet.



OVERVIEW OF WEVOSIL PRODUCTS



Product	Mixing ratio (by weight)	Mixed viscosity [mPa·s]	Pot life [min.]	Density [g/cm ³]	Shore hardness [00/A]	Operating temperature up to [°C]	Thermal conductivity ASTM D 5470 [W/m·K]	Flammability UL 94	Dielectric strength [kV/mm]	Volume resistivity [Ω·cm]	Colour
THERMALLY CONDUCTIVE ENCAPSULANTS/POTTING MATERIALS											
WEVOSIL 22002 FL	1:1	3,250	60	1.68	-- / 40	180	1.4	V-0*	> 24	> 10 ¹⁴	blue
WEVOSIL 22102 FL	1:1	2,500	60	1.68	60 / --	180	1.4	V-0	> 25	> 10 ¹⁴	blue
WEVOSIL 22004	1:1	6,000	60	2.44	-- / 45	200	1.6	V-1	> 29	> 10 ¹³	blue
WEVOSIL 22005 FL	1:1	6,000	60	2.30	-- / 60	180	1.7	V-0	> 30	> 10 ¹⁰	blue
WEVOSIL 22007 FL	1:1	15,000	60	2.31	70 / --	165	2.2	V-0	> 16	> 10 ¹⁵	blue
WEVOSIL 22008 FL	1:1	6,000	60	2.81	60 / --	200	2.8	V-0	> 20	> 10 ¹⁵	blue
THERMALLY CONDUCTIVE GAP FILLERS											
WEVOSIL 26001 FL	1:1	paste-like	60	2.30	55 / --	180	1.8	V-0	> 19	> 10 ¹⁰	grey
WEVOSIL 26010 FL	1:1	paste-like	60	2.20	70 / --	165	3.0	V-0*	> 15	> 10 ¹³	blue
WEVOSIL 26020 FL	1:1	paste-like	60	3.11	70 / --	200	4.0	V-0*	> 20	> 10 ¹³	blue

All application parameters refer to processing at room temperature. All mechanical, thermal and electrical properties are based on complete curing.

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The manner in which you use and the purpose to which you put and utilise our products, technical assistance and information (whether verbal, written or by way of production evaluations), including any suggested formulations and recommendations, are beyond our control. Therefore, it is imperative that you test our products, technical assistance and information to determine to your own satisfaction whether our products, technical assistance and information are suitable for your intended uses and applications. This application-specific analysis must at least include testing to determine suitability from a technical as well as health, safety and environmental standpoint. Such testing has not necessarily been done by us. Unless we otherwise agree in writing, all products are sold strictly pursuant to the terms of our standard conditions of sale which are available upon request. All information, in particular all technical data and assistance, is given without warranty or guarantee and is subject to change without notice. It is expressly understood and agreed that you assume and hereby expressly release us from all liability, in tort, contract or otherwise, incurred in connection with the use of our products, technical assistance and information. Any statement or recommendation not contained herein is unauthorised and shall not bind us. Nothing herein shall be construed as a recommendation to use any product in conflict with any claim of any patent relative to any material or its use. No licence is implied or in fact granted under the claims of any patent. Copyright 2023 WEVO-CHEMIE GmbH. All rights reserved. Unless otherwise indicated by name, all texts, images and graphics are subject to copyright and other laws for the protection of intellectual property. They may not be copied, changed or used in any other way.