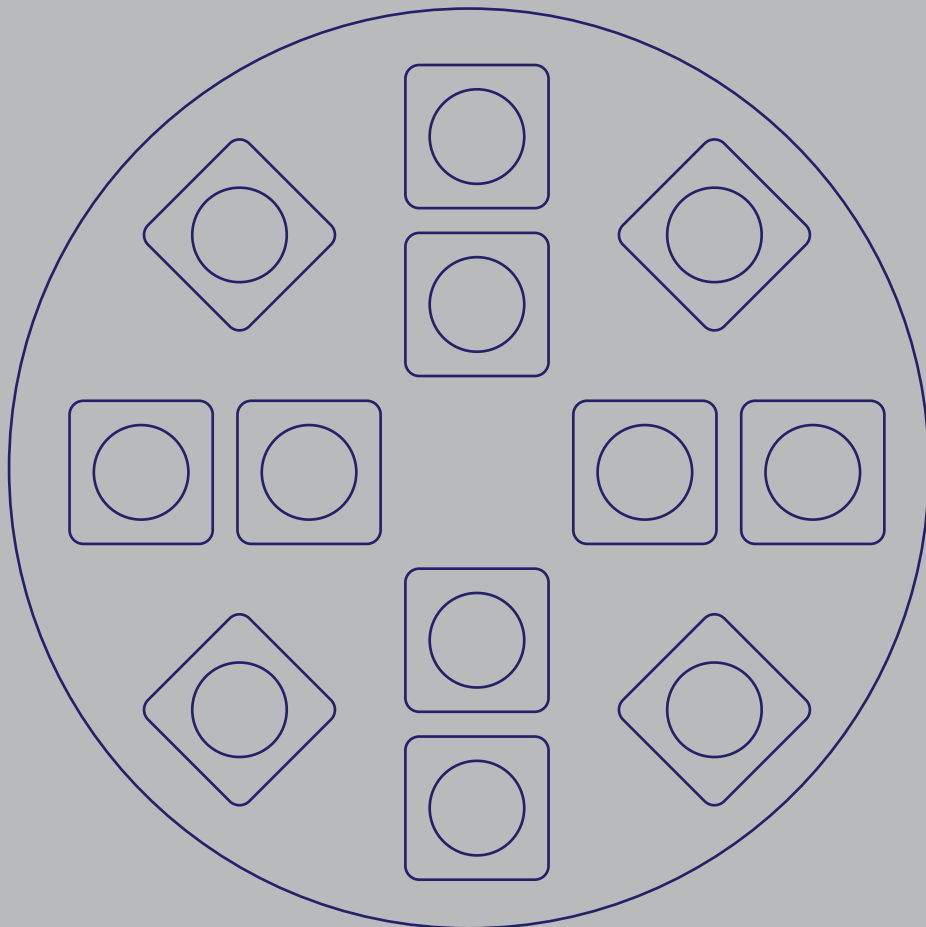




**wevo**

# LIGHTING

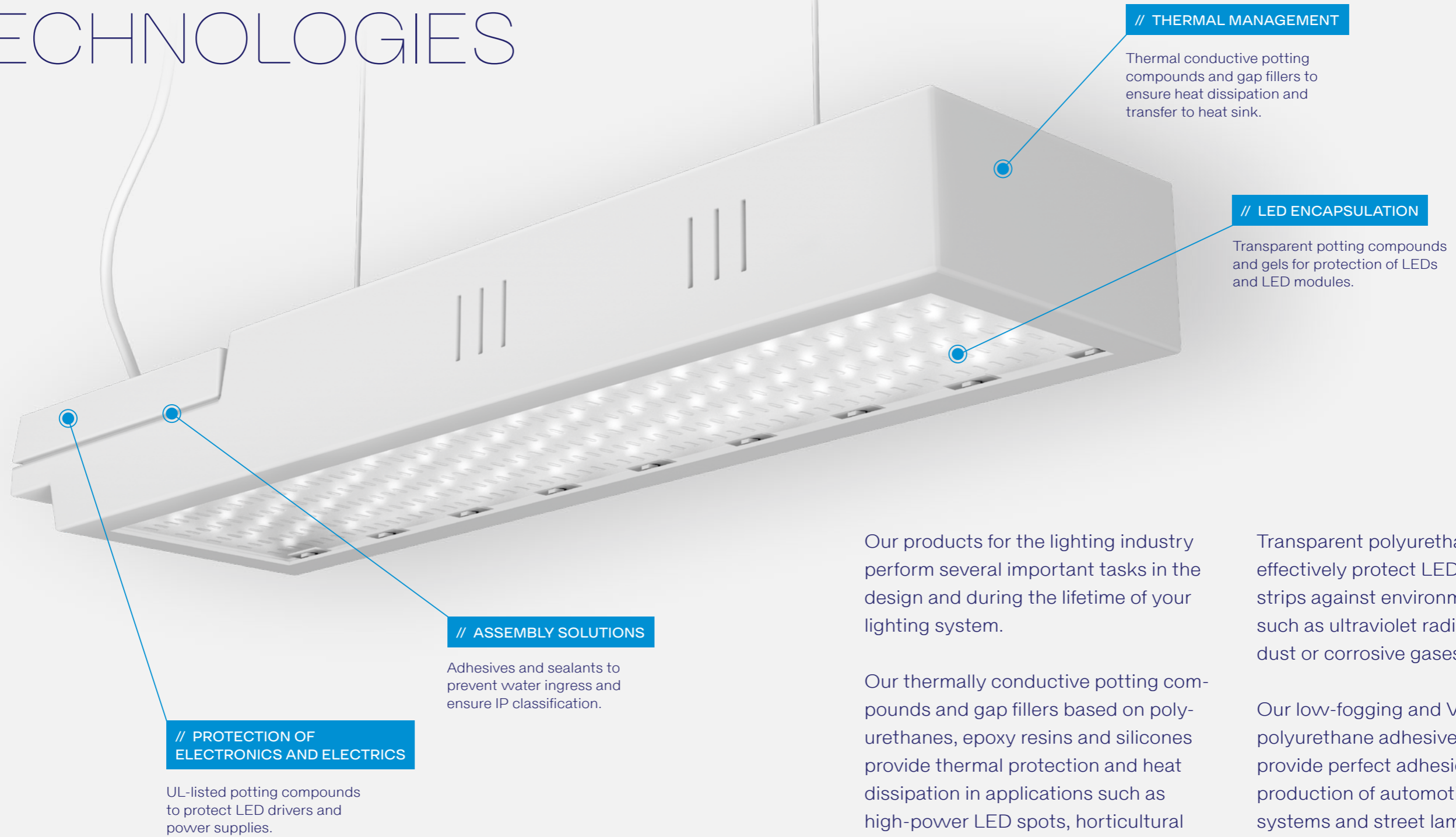


# WEVO – YOUR RELIABLE PARTNER FOR LIGHTING

The lighting industry is facing tremendous technological changes and requires brighter, more energy-efficient and more durable lighting systems. The integration of LEDs and electronic components into luminaires and fixtures requires customised solutions for their assembly.

Tailor-made gels and transparent potting compounds from Wevo protect your LEDs against environmental influences. Our adhesives and sealants are the right choice for assembling your luminaires. Our thermal interface materials and potting compounds are an essential part of the thermal management of the electronics and the whole luminaire.

# WEVO PROTECTIVE TECHNOLOGIES



**// PROTECTION OF ELECTRONICS AND ELECTRICS**

UL-listed potting compounds to protect LED drivers and power supplies.

**// ASSEMBLY SOLUTIONS**

Adhesives and sealants to prevent water ingress and ensure IP classification.

**// THERMAL MANAGEMENT**

Thermal conductive potting compounds and gap fillers to ensure heat dissipation and transfer to heat sink.

**// LED ENCAPSULATION**

Transparent potting compounds and gels for protection of LEDs and LED modules.

Our products for the lighting industry perform several important tasks in the design and during the lifetime of your lighting system.

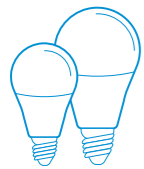
Our thermally conductive potting compounds and gap fillers based on polyurethanes, epoxy resins and silicones provide thermal protection and heat dissipation in applications such as high-power LED spots, horticultural lighting or retrofit lamp sockets.

Transparent polyurethane and silicone effectively protect LED luminaires and strips against environmental influences such as ultraviolet radiation, moisture, dust or corrosive gases.

Our low-fogging and VOC-free polyurethane adhesives and sealants provide perfect adhesion in the production of automotive lighting systems and street lamps.

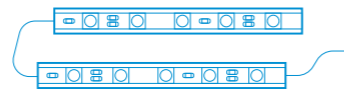
# A CLOSER LOOK AT THE APPLICATIONS

Regardless of the final use, LED-based luminaires and their electronics require appropriate protection against environmental influences to ensure a long lifetime. Our high-performance materials are used for various applications in the lighting industry.



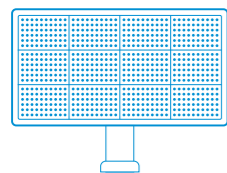
## LIGHT BULBS

Our thermal conductive and flame-retardant potting compounds protect the electronic components of the PCBs in light bulb-sockets against environmental impacts and ensure the dissipation of heat and therefore a longer lifetime of the bulb.



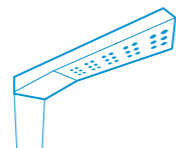
## LED LAMPS AND LUMINAIRES

LED lamps and luminaires are often used in harsh (outdoor) environments. Our clear and transparent potting compounds and gels protect the sensitive LEDs in LED strips and other luminaires, e.g. in pools and aquariums, against water ingress and thermal cycling.



## ENTERTAINMENT

Our thermally conductive potting compounds and thermal interface materials ensure effective heat dissipation in high-power LED spots for show lighting. Transparent silicone and epoxy coatings protect the sensitive LEDs against mechanical impacts in video walls and screens.



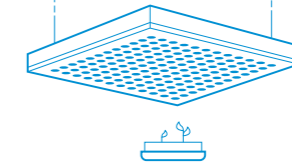
## STREET LIGHTING

Our adhesives, sealants and thermal interface materials are used in the assembly of LED street lights and other luminaires. Our self-extinguishing and UL 94 V-0 approved resins are used to protect electric and electronic components such as transformers and sensors.



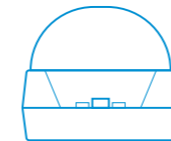
## SAFETY LIGHTING

Light sources used in hazardous conditions (e.g. chemical plants) and for safety-relevant applications (e.g. tunnels, airfields) require modern insulation materials like our potting compounds. These ensure safe operation under conditions subject to harsh environmental influences, such as chemicals, salt and snow.



## HORTICULTURAL LIGHTING

The use of high-power LEDs and the dense packaging in horticultural lighting applications result in high temperature emissions. Our silicone and epoxy-based thermal interface materials and our heat-resistant silicone gels ensure good thermal management and therefore a long lifetime.



## LED PACKAGING

Our transparent silicone gels and transparent encapsulants protect the semiconductors and LEDs against mechanical stresses and environmental influences such as moisture or hazardous gases.



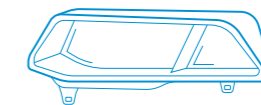
## SMART/CONNECTED LIGHTING

Smart and connected lighting and emerging technologies such as Li-Fi (light fidelity) require numerous sensors, antennas and IoT devices, which need to be protected and electrically insulated by our high-performance polybutadiene and silicone materials.



## BALLASTS AND TRANSFORMERS

Our self-extinguishing UL 94 V-0 and RTI-listed polyurethane, epoxy and silicone resins protect transformers and ballasts against environmental influences and help to dissipate heat and ensure the safe operation of luminaires without a risk of fire.



## AUTOMOTIVE LIGHTING

Our low-fogging polyurethane and polybutadiene-based adhesives are used for the assembly of automotive headlights and rear lights and are fully compatible with amorphous plastics such as PC and PMMA. Our transparent resins are used for LED strips in ambient interior lighting.

# WEVO CUSTOMISED SOLUTIONS

Different applications require different products with special properties.

Application	LIGHT BULBS	LED LAMPS AND LUMINAIRES	VIDEO WALLS AND SPOT LIGHTS	STREET LIGHTING	SAFETY LIGHTING
<b>Requirements</b>	<ul style="list-style-type: none"> <li>High thermal conductivity</li> <li>UL 94 V-0</li> <li>Low water absorption</li> </ul>	<ul style="list-style-type: none"> <li>High UV resistance</li> <li>High refractive index</li> <li>High transmission</li> </ul>	<ul style="list-style-type: none"> <li>High thermal conductivity</li> <li>UL 94 V-0</li> <li>Low water absorption</li> </ul>	<ul style="list-style-type: none"> <li>Good adhesion</li> <li>High thermal conductivity</li> <li>Low water absorption</li> </ul>	<ul style="list-style-type: none"> <li>High UV resistance</li> <li>High refractive index</li> <li>High transmission</li> </ul>
<b>Possible solutions</b>	<b>WEVOPUR</b> <ul style="list-style-type: none"> <li>512 FL</li> <li>60512 FL</li> <li>60515 FL</li> <li>60910 FL</li> <li>60416 FL</li> <li>36001 FL</li> </ul> <b>WEVOSIL</b> <ul style="list-style-type: none"> <li>22002 FL</li> </ul>	<b>WEVOPUR</b> <ul style="list-style-type: none"> <li>50001</li> <li>1222</li> <li>1250</li> <li>1240</li> </ul> <b>WEVOSIL</b> <ul style="list-style-type: none"> <li>20001</li> </ul>	<b>WEVOPUR</b> <ul style="list-style-type: none"> <li>512 FL</li> <li>60512 FL</li> <li>60515 FL</li> <li>60910 FL</li> <li>60416 FL</li> <li>36001 FL</li> </ul> <b>WEVOSIL</b> <ul style="list-style-type: none"> <li>22002 FL</li> </ul>	<b>WEVOPUR</b> <ul style="list-style-type: none"> <li>PD 52</li> <li>801 N</li> <li>512 FL</li> <li>60512 FL</li> </ul>	<b>WEVOPUR</b> <ul style="list-style-type: none"> <li>50001</li> <li>1222</li> <li>1250</li> <li>1240</li> </ul> <b>WEVOSIL</b> <ul style="list-style-type: none"> <li>20001</li> </ul>

Application	HORTICULTURAL LIGHTING	LED PACKAGING	SMART/CONNECTED LIGHTING	BALLASTS AND TRANSFORMERS	AUTOMOTIVE LIGHTING
<b>Requirements</b>	<ul style="list-style-type: none"> <li>Adjusted optical properties</li> <li>Good thermal conductivity</li> <li>High temperature resistance</li> </ul>	<ul style="list-style-type: none"> <li>Adjusted optical properties</li> <li>High UV resistance</li> </ul>	<ul style="list-style-type: none"> <li>Good dielectric properties</li> <li>Electrically insulating</li> </ul>	<ul style="list-style-type: none"> <li>High thermal conductivity</li> <li>UL 94 V-0</li> <li>Low water absorption</li> </ul>	<ul style="list-style-type: none"> <li>Good adhesion</li> <li>Low fogging</li> </ul>
<b>Possible solutions</b>	<b>WEVOSIL</b> <ul style="list-style-type: none"> <li>20001</li> <li>20201/60</li> <li>22002 FL</li> <li>22005 FL</li> <li>26007 FL</li> </ul>	<b>WEVOSIL</b> <ul style="list-style-type: none"> <li>20001</li> <li>20201/60</li> </ul>	<b>WEVOPUR</b> <ul style="list-style-type: none"> <li>PD 4</li> <li>PD 445</li> <li>PD 52</li> <li>512 FL</li> </ul> <b>WEVOSIL</b> <ul style="list-style-type: none"> <li>20001</li> <li>22006 FL</li> </ul>	<b>WEVOPUR</b> <ul style="list-style-type: none"> <li>403 FL/Xx</li> <li>552 FL</li> <li>512 FL</li> <li>60512 FL</li> <li>60910 FL</li> </ul> <b>WEVOSIL</b> <ul style="list-style-type: none"> <li>22006 FL</li> </ul>	<b>WEVOPUR</b> <ul style="list-style-type: none"> <li>PD 52</li> <li>801 N</li> </ul>

		TRANSPARENT ENCAPSULATION MATERIALS					ADHESIVES AND SEALANTS		UL-LISTED ELECTRONIC POTTING COMPOUNDS			THERMAL CONDUCTIVE POTTING COMPOUNDS AND GAP FILLERS					
Resin / component A		WEVOPUR 50001	WEVOPUR 1222	WEVOPUR 1250	WEVOPUR 1240	WEVOSIL 20001	WEVOPUR PD 52	WEVOPUR 801 N	WEVOPUR 552 FL	WEVOPUR 403 FL	WEVOPUR 512 FL	WEVOPUR 60512 FL	WEVOPUR 60416 FL	WEVOPOX 36001 FL	WEVOSIL 22002 FL	WEVOSIL 22005 FL	WEVOSIL 26007 FL
Hardener / component B		WEVONAT 356	WEVONAT 360	WEVONAT 360	WEVONAT 360	A/B	WEVONAT 385	WEVONAT 600	WEVONAT 300	WEVONAT 300 RE	WEVONAT 900	WEVONAT 507	WEVONAT 300 RE	WEVODUR 5001	A/B	A/B	A/B
<b>Mixing ratio (parts by weight)</b>		100 : 95	100 : 163	100 : 100	100 : 54	1 : 1	100 : 26	100 : 34 : 00	100 : 20	100 : 14	100 : 16	100 : 13 : 00	100 : 07 : 00	100 : 10	1 : 1	1 : 1	1 : 1
<b>Mixed viscosity at 22°C [mPa·s]</b>	<b>Rotational viscometer</b>	800–1,500	1,800–2,500	1,800–2,400	1,800–2,500	1,000–1,500	1,200–2,000	2,000–3,000	1,000–1,300	2,000–2,500	600–900	1,500–3,500	6,000–12,000	3,500–6,500	2,500–4,000	4,000–8,000	paste
<b>Reactivity at 22°C [min]°</b>		40–60	50–60	30–40	40–60	50–70	5–40	40–60	5–50	10–45	15–60	30–45	40–60	180–240	50–70	50–70	50–70
<b>Shore hardness 00/A/D</b>	<b>DIN ISO 7619-1:2012-02</b>	-- / 75–85 / --	-- / -- / 75–85	-- / -- / 40–50	-- / 70–80 / --	-- / 35–45 / --	-- / 70–80 / --	-- / -- / 75–80	-- / -- / 60–70	-- / -- / 45–50	-- / -- / 30–40	-- / -- / 65–75	-- / -- / 65–75	-- / -- / 85–90	-- / 35–45 / --	-- / 55–65 / --	60–80 / -- / --
<b>Operating temp. [°C]</b>		-40 up to +120	-40 up to +120	-40 up to +120	-40 up to +120	-60 up to +180	-60 up to +125	-40 up to +140	-40 up to +130	-50 up to +165	-40 up to +130	-40 up to +130	-50 up to +155	-40 up to +180	-60 up to +180	-60 up to +180	-60 up to +200
<b>E modulus [N/mm²]</b>	<b>DIN EN ISO 527-2:2012-06</b>	9	1,900	10	9	1.7	15	--	55	110	20	530	320	6,000	2	6.4	0.8
<b>Thermal conductivity [W/m·K]</b>	<b>DIN EN ISO 22007-2:2015-12</b>	0.2	0.2	0.2	0.2	0.2	0.3	0.56	0.6	0.8	0.8	1.2	1.7	1.1	1.0	1.5	3.0
<b>Glass transition temperature [°C]</b>	<b>TMA ISO 11359-2:1999-10</b>	0	36	11	-12	-40	-60	--	15	-6	-4	22	-12	51	-45	-45	-55
<b>Coefficient of expansion [ppm/K]</b>	<b>TMA ISO 11359-2:1999-10</b>	104 < Tg 226 > Tg	80 < 10°C 190 > 50°C	100 < 0°C 191 > 20°C	95 < -20°C 230 > 0°C	330 > -30°C	65 < -70°C 175 > -60°C	--	58 < 10°C 142 > 20°C	42 < -10°C 146 > 5°C	55 < -20°C 160 > -5°C	50 < Tg 115 > Tg	35 < Tg 101 > Tg	40 < 45°C 110 > 60°C	85 < -70°C 200 > -30°C	60 < -70°C 150 > -30°C	55 > -30°C
<b>Water absorption [%] 30 days, 22°C</b>		1.3	0.7	1.1	1.5	--	0.5	0.5	0.4	0.6	0.3	0.4	0.7	--	< 0.1	< 0.2	< 1.0
<b>Flammability</b>	<b>UL 94</b>	HB 2.0 mm	HB 2.0 mm	HB	HB	HB	HB	HB	V-0 1.5 mm**	V-0 1.5 mm**	V-0 4 mm**	V-0 1.5 mm**	V-0 1.5 mm**	V-0 2 mm**	V-0 2 mm**	V-0 2 mm	V-0 4 mm
<b>Dielectric strength [kV/mm]</b>	<b>DIN EN 60243-1:2014-01</b>	24	29	--	25	--	23	32	29	30	38	--	> 20	25	24	30 (100°C: 24.3)	> 15
<b>Volume resistivity [Ω·cm]</b>		10 <sup>15</sup>	10 <sup>15</sup>	10 <sup>12</sup>	10 <sup>12</sup>	> 10 <sup>14</sup>	10 <sup>14</sup>	> 10 <sup>14</sup>	10 <sup>15</sup>	10 <sup>14</sup>	10 <sup>13</sup>	> 10 <sup>11</sup>	> 10 <sup>15</sup>	10 <sup>14</sup>	> 10 <sup>14</sup>	> 10 <sup>10</sup>	10 <sup>14</sup>
<b>Target applications</b>		LED lamps and luminaires, video walls, horticultural lighting, headlights	LED lamps and luminaires, video walls, horticultural lighting, headlights	LED lamps and luminaires, video walls, horticultural lighting, headlights	LED lamps and luminaires, video walls, horticultural lighting, headlights	LED lamps and luminaires, video walls, horticultural lighting, headlights	Automotive lighting, street lighting, horticultural lighting, lamps and luminaires	Automotive lighting, street lighting, horticultural lighting, lamps and luminaires	Potting of light bulbs, ballasts and transformers, antennas, sensors and IoT devices	Potting of light bulbs, ballasts and transformers, antennas, sensors and IoT devices	Potting of light bulbs, ballasts and transformers, antennas, sensors and IoT devices	Potting of light bulbs, ballasts and transformers, high-power LED spotlights	Potting of light bulbs, ballasts and transformers, high-power LED spotlights	Potting of light bulbs, ballasts and transformers, high-power LED spotlights	Potting of LED luminaires and lamps, transformers and ballasts	Thermal interface material for horticultural lighting and high-power LED spotlights	Thermal interface material for horticultural lighting and high-power LED spotlights

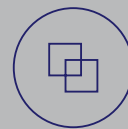
All application parameters refer to processing at room temperature. All mechanical, thermal and electrical properties are based on complete curing.  
 ° The indicated range of pot life corresponds with current standard versions. Adjustment of pot life is possible.  
 \*\* UL listing under file No. E108835  
 For a more detailed technical description of our systems please refer to the corresponding data sheets which are available for all products.

# WEVO ADDED VALUES

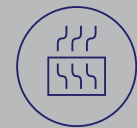
Our comprehensive product range encompasses such classic tasks as electrical insulation and humidity protection, together with a number of other added values.



Ask us about our materials compliant with the stringent fire and safety standard EN 45545-2 in hazardous level  $\geq$  HL2 for requirements R22 and R23. A wide variety of products have self-extinguishing properties in line with UL 94 V-0.



Our transparent materials provide excellent optical properties, including high transmission rates over a wide wavelength and a high refractive index. Translucent versions are available on request.



Some of our materials have increased thermal conductivities of up to 4 W/m-K and can be used as thermally conductive potting compounds or gap filler materials.



Wevo materials can be adjusted in terms of their reaction times, flow behaviour and to the individual needs of the production process. Thixotropic versions are available on request.



Wevo solutions exhibit outstanding electrical properties with CTI 600, high dielectric strength greater than 20 KV/mm as well as other outstanding dielectric properties.



In addition to standard materials produced to withstand temperatures of up to +180°C, we offer materials suitable for even higher temperatures. Several resins have undergone accelerated aging tests and have been certified to UL 746 B, with listed RTI values up to 160 and CTI values of 600 (UL file No. E108835).



## WE ARE MUCH MORE THAN A SUPPLIER

From development to volume production – we offer customer support every step along the way.



## WE PIONEER PROGRESS

We are a proven partner in project-driven innovation with a decades-long track record.



## WE INITIATE INNOVATION

We develop new ideas for every area of electrical component bonding, casting and sealing.

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.



WEVO-CHEMIE GmbH · Schönbergstrasse 14 · 73760 Ostfildern-Kemnat · Germany  
Phone +49 711 167 61-0 · Fax +49 711 167 61-44 · [info@wevo-chemie.de](mailto:info@wevo-chemie.de) · [wevo-chemie.de](http://wevo-chemie.de)