

Casting compound

Wepuran VT 3404 LS

The casting compound Wepuran **VT 3404 LS** protects and insulates electronic components and assemblies against rough climatic influences and aggressive media as well as against mechanical attack.

- Base: Polyurethane resin (UR)
- Solids content > 99.5 %
- low viscosity (good fluidity)
- generates diffused light effects when light source is potted (e.g. control lights)
- excellent adhesion on almost all materials
- operating temperature range **-40 to at least +90 °C [-40 to at least 194 °F]**
- high mechanical stability, thus very good protection against shock, impact and vibration
- resistant against water, moisture, condensate and numerous chemicals, bases, acids and oils

Characteristics

Colour/appearance		yellowish, milky-cloudy
Viscosity* at 20 °C DIN EN ISO 3219	Component A Hardener (component B) Mixture	4300 ± 400 mPas 14 ± 2 mPas 1100 ± 250 mPas
Density at 20 °C DIN EN ISO 2811-1	Component A Hardener (component B) Mixture	1.02 ± 0.05 g/cm ³ 1.21 ± 0.05 g/cm ³ 1.08 ± 0.05 g/cm ³
Pot life of mixture at 19-21 °C [66,2-69,8 °F] based on DIN EN 14022, approx. 200 mL Double viscosity Tenfold viscosity		approx. 30 min approx. 50 min

* measured with Haake RS 600, C 35/1°, D = 100 s⁻¹,
viscosity measuring unit supplied by Thermo Fisher Scientific, www.thermofisher.com

Indices: VT = casting compound, transparent, LS = light diffusing

Physical and mechanical properties

These properties are reached after 14 days storage at room temperature (18 - 23 °C [64.4 - 73.4 °F]).

Property	Test method	Result
Shore-A hardness	DIN 53 505	80-100
	DIN ISO 7619-1	85-95
Shore-D hardness	DIN 53 505	55-65
	DIN ISO 7619-1	40-50
Water absorption	DIN EN ISO 62 (24 h/23 °C)	≈ 0.12 %
Glass transition temperature Tg	TMA (thermomechanical analysis)	≈ 25 °C [77 °F]
Coefficient of thermal expansion CTE	TMA (thermomechanical analysis)	≈ 100 ppm/°C < Tg ≈ 225 ppm/°C > Tg
Thermal class*	based on DIN IEC 60 085	Y = 90 °C [194 °F]
Temperature index (TI)*	based on DIN EN 60216 (IEC 60216), issue 2001 mass loss: 5 % 10 % 20 % 50 %	after 5,000 / 20,000 h ≥ 120 °C / 95 °C ≥ 130 °C / 110 °C ≥ 145 °C / 120 °C ≥ 160 °C / 135 °C

* can be used in a temperature range of **-40 up to at least + 90 °C** [-40 up to at least 194 °F]; a use down to -65 °C [-85 °F] is possible. Both at the lower and upper ends of this range the performance and reliability of the material can be negatively affected in some applications. In these cases, additional pre-trials and tests are required.

Electrical properties

These properties are reached after 14 days storage at room temperature (18-23 °C [64.4-73.4 °F]).

Property	Test method	Result
Dielectric strength	VDE 0303, part 21 DIN EN 60243-1	≥ 35 kV/mm
Surface resistance	VDE 0303, part 30 DIN IEC 60093	≥ 2 x 10 ¹⁴ Ohm
Specific volume resistance	VDE 0303, part 30 DIN IEC 60093	≥ 2.4 x 10 ¹⁵ Ohm x cm
Comparative tracking index (CTI, tracking resistance)	DIN EN 60112	CTI > 600

Processing



Please read this technical report and the publications listed below carefully before using the product. These sheets are enclosed with the first shipment of product or sample.

MSDS

The corresponding material safety data sheet contains detailed information and characteristics on safety precautions, environmental protection, transport, storage, handling and waste disposal.

TI

[Technical information TI 15/2](#) "Selection criteria and processing instructions for casting compounds"

TI

[Technical information TI 15/3](#) "Protective measures when using chemicals including lacquers, casting compounds, thinners, cleaning agents"

TI

[Technical information TI 15/10](#) "Processing of 2-pack systems"



Protect against humidity



Stir before use

→ If the hardener (comp. B) has crystallised, warm up the entire content of the container to a maximum of 70 °C [158 °F] until the crystals have melted. Mix the material thoroughly to ensure an even mixture. Prior to processing, let the material cool down to 20-25 °C [68-77 °F].

Since the many different permutations make it impossible to evaluate the whole spectrum (parameters, reactions with materials used, chemical processes and machines) of processes and subsequent processes in all their variations, the parameters we recommend are to be viewed as guidelines only that were determined in laboratory conditions. We advise you to determine the exact process limitations within your production environment, in particular as regards compatibility with your specific follow-up processes, in order to ensure a stable fabrication process and products of the highest possible quality.

The specified product data is based upon standard processing conditions/test conditions of the mentioned norms and must be verified if necessary while observing suitable test conditions on processed products.

Feel free to contact our application technology department (ATD) if you have any questions or for a consultation.

Safety recommendation

- When using chemicals, the common precautions should be carefully noted.
- Ensure that the equipment used is in compliance with the requirements laid down in the material safety data sheet.



Wear protective gloves and safety goggles!

Avoid skin contact!

Ensure sufficient technical ventilation in the workplace.

Observe standard work hygiene measures (wash hands etc.).

Mixing



Component A : hardener (component B) = 5 : 2 (parts by weight)

Auxiliary products recommended

- [ELPESPEC® sealing mastic EH 13.271](#)
solvent-free paste for sealing jobs in electronics and electrical engineering, self-adhesive and permelastatic
- [ELPESPEC® adhesion promoters EH 13.950/EH 13.951](#)
for improving the adhesion; EH 13.950 is applied thinly to the parts that will come into contact with the casting compound while EH 13.951 is mixed thoroughly with the casting compound prior to potting
- [ELPESPEC® mould release agent EH 13.650](#)
solvent-, silicone- and grease-free, for pre-treating the surfaces of parts to be potted; after curing, the potting can be easily removed from the mould without residue

- [ELPESPEC® accelerator B 4400](#)
reduces the curing time and the processing time, thus to be applied preferably with mixing and dosing units; stirred into component A prior to processing the casting compound
- [ELPESPEC® cleaning agent R 13.780](#)
for the cleaning of work place and tools; cleaning should be effected immediately after processing as cleaning becomes increasingly difficult the further the curing process progresses and is impossible after final curing.

Drying/curing

The following specifications for a quantity of approx. 25 g serve as a guideline:

	Room temperature (18-23 °C) [64.4–73.4 °F]	80 °C [176 °F]	125 °C [257 °F]
tack-free	24 h	1 h	15 min
final hardness	14 days	2 h	45 min

Packaging

The packing units available are indicated in our offer which we will send you upon request.

Shelf life and storage conditions

- Upon receipt, check comp. B for crystallisation.
- Fuse any crystallised material promptly while following the recommendations under the item „Processing“.
- Keep the containers sealed tightly, protect the material against humidity and ensure optimum storage temperatures. Use all fused material as quickly as possible.



Shelf life: In sealed original containers at least 6 months



Storage conditions component A: +5 °C to +25 °C [+41 °F to +77 °F]



Storage conditions hardener (component B): +15 °C to +25 °C [+ 59 °F to +77 °F]



Optimum storage conditions hardener (component B):
+20 °C to +25 °C [68 °F to +77 °F]



Protect against humidity



Protect against frost

For warehousing reasons, isolated cases may occur where the shelf life upon shipment is less than the shelf life indicated in this technical report. However, it is ensured that our products have **at least** two-thirds of their shelf life remaining when they leave our company. Labels on containers show shelf life and storage conditions.

Disclaimer

All descriptions and images of our goods and products contained in our technical literature, catalogues, flyers, circular letters, advertisements, price lists, websites, data sheets and brochures, and in particular the information given in this literature are non-binding unless expressly stated otherwise in the Agreement. This shall also include the property rights of third parties if applicable.

The products are exclusively intended for the applications indicated in the corresponding technical data sheets. The advisory service does not exempt you from performing your own assessments, in particular as regards their suitability for the applications intended. The application, use and processing of our products and of the products manufactured by you based on the advice given by our Application Technology Department are beyond our control and thus entirely your responsibility. The sale of our products is effected in accordance with our current terms of sale and delivery.

Any questions? We would be pleased to offer you advice and assistance in solving your problems. Samples and technical literature are available upon request.

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