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## **WEVOPUR 7210 FL PU encapsulating system**

Two-component encapsulating system based on polyurethane.

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### **Attributes**

The resin component contains a mineral filler providing the material with self-extinguish properties. The resin contains no halogenated flame-retardants. The cured polymer exhibits tough properties. The product processes a high thermal distortion temperature.

Temperature range of use: -40 °C to +145 °C

Wevopur 7210 FL is used with hardener WEVONAT 507.

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### **Application**

Encapsulation of electrical components for medium and high voltage applications.

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### **Standards**

- Class B
- UL 94 V 0 (6 mm)
- UL File E 108835

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### **Delivery forms**

30 kg metal container and 250 kg barrel.

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### **Color**

WEVOPUR 7210 FL: black (standard)

WEVONAT 507: brown

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### **Storage**

6 months after production in closed containers, dry storage at 15 to 25 °C.

Store resin (A component, polyol) and hardener (B component, Isocyanat) dry and at temperatures between 15 °C and 25 °C. Store on pallets or collecting tray and do not expose to draft. At temperatures below 15 °C the hardener can crystallise which can be seen by opacity and/or clumps/crystals (usually hardeners are clear, transparent liquids in spite of their dark brown colour). In this case the hardener should not be used anymore. At temperatures higher than 25 °C the sedimentation of fillers contained in the resin component is accelerated. As a consequence it is more difficult to prepare (stir) the resin.

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### **Hardening**

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- Pot life: 20-35 min at room temperature, depending on coat thickness and pouring volume.
  - Curing time: 12-24 h at room temperature.
  - Complete chemical curing: 10-14 days at room temperature
  - High air moisture may lead to forming of bubbles. Reference value: the rel. air humidity should not exceed 40-60 %, depending on the product. To avoid a reaction of the surface curing should be in an air conditioned room, a container with low air moisture or in an oven. Elevated temperatures accelerate the curing. Curing temperature should not exceed 80 °C to avoid tensions of the resin.
  - Final hardness of WEVOPUR 7210 FL will be attained after 7-14 days at room temperature. This process can be accelerated by post curing at 60-80 °C for 16-24 h. This is relevant for potted components subject to qualification tests. Electrical tests can usually be carried out straight after potting.

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### Protection

Observe the common protective measures acc. to EG safety data sheets and the data sheet M044 of the German Chemical Industry Association (BG Chemie) when using the liquid resin.

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### Processing

**Our processing instructions please find [here](#).**

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### Cleaning

Since the cured resin is practically insoluble, tools and equipment have to be cleaned in sufficient time.

| Mechanical          | Unit of measure   | Values | Test method          |
|---------------------|-------------------|--------|----------------------|
| Shore-D-hardness    |                   | 85-90  | DIN ISO 48-4:2011-02 |
| Tensile strength    | N/mm <sup>2</sup> | 54     | ISO 527-2:2012-06    |
| Elongation at break | %                 | 2      | ISO 527-2:2012-06    |
| E module            | N/mm <sup>2</sup> | 5500   | ISO 527-2:2012-06    |

| Thermal                      | Unit of measure | Condition | Values | Test method             |
|------------------------------|-----------------|-----------|--------|-------------------------|
| Thermal conductivity         | W/m*K           |           | 0.55   | DIN 22007-2:2008        |
| Glass transition temperature | °C              |           | 85     | TMA ISO 11359-2:2021-11 |
| Coefficient of expansion     | ppm/K           | <70       | 54     | TMA ISO 11359-2:2021-11 |
| Coefficient of expansion     | ppm/K           | >100      | 151    | TMA ISO 11359-2:2021-11 |
| Thermal class                |                 |           | B      | DIN EN 60085            |

| Chemical         | Unit of measure | Condition             | Values | Test method |
|------------------|-----------------|-----------------------|--------|-------------|
| Water absorption | %               | after 30 days storage | 0.3    |             |
| Burning behavior |                 | 6 mm                  | V-0    | UL 94       |

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| Electrical                                            | Unit of measure          | Condition            | Values    | Test method           |
|-------------------------------------------------------|--------------------------|----------------------|-----------|-----------------------|
| Dielectric strength                                   | kV/mm                    |                      | 34        | IEC 60243             |
| Specific volume resistance                            | $\Omega \cdot \text{cm}$ | at 23 °C / 50 % RH   | $10^{14}$ | DIN EN 62631-3-1:2016 |
| Surface resistivity                                   | $\Omega$                 | at 23 °C / 50 % r.H. | $10^{17}$ | DIN EN 62631-3-1:2016 |
| Dielectric constant (AC, 23 °C, 50 Hz)                |                          |                      | 3.7       | IEC 62631-2-1:2018-12 |
| Dielectric constant; at 1 kHz, 23 °C                  |                          |                      | 3.6       | IEC 62631-2-1:2018-12 |
| Dielectric constant &epsilon; at 1 MHz, 23 °C         |                          |                      | 3.5       | IEC 62631-2-1:2018-12 |
| Dielectric loss factor at (AC, 23 °C, 50 Hz)          |                          |                      | 0.01      | IEC 62631-2-1:2018-12 |
| Dielectric loss factor tan $\delta$ ; at 1 kHz, 23 °C |                          |                      | 0.007     | IEC 62631-2-1:2018-12 |
| Dielectric loss factor tan $\delta$ ; at 1 MHz, 23 °C |                          |                      | 0.014     | IEC 62631-2-1:2018-12 |
| Creep resistance                                      |                          |                      | CTI 600   | DIN EN 60112          |

| Glowing wire test | Unit of measure | Condition | Values    | Test method                   |
|-------------------|-----------------|-----------|-----------|-------------------------------|
| Glowing wire test | °C              | 6 mm      | 960 / 825 | IEC 60695-2-12/-13, GWFI/GWIT |

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| Liquid phase      | Unit of measure   | WEVOPUR 7210 FL | WEVONAT 507 | Resin-/hardener-mixture | Test method |
|-------------------|-------------------|-----------------|-------------|-------------------------|-------------|
| Mixing ratio      | Gew-%             | 100             | 43          |                         |             |
| Viscosity (22 °C) | mPas              | 7,000-8,500     | 10-40       | 400-600                 |             |
| Density (22 °C)   | g/cm <sup>3</sup> | 1.53-1.57       | 1.20-1.24   |                         |             |

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