

## **Product Information**

Electrical Isolation System

**Casting Compound**

**Bectron<sup>®</sup> EP 5504**

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Encapsulation Resin  
Casting Compound:

Hardener:

**Bectron® EP 5504**

**Bectron® EH 5909**

<ul style="list-style-type: none"> <li>☞ Self-extinguishing acc. to UL 94 (UL-approval V0 at 2,95 mm, UL file no. E 140720)</li> <li>☞ Thermal Class F (155 °C)</li> <li>☞ High thermal conductivity</li> <li>☞ Favourable processing viscosity – good levelling property</li> <li>☞ Cold curing</li> <li>☞ Hard moulding compound</li> <li>☞ Good adhesion on various substrates</li> </ul>
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### General

The Bectron® EP 5504 is a cold curing 2-component system free from solvents and, in combination with Hardener Bectron® EH 5909, results in a hard moulding compound with self-extinguishing properties (approval acc. to UL 94 V0).

### Application

The Bectron® EP 5504, in combination with Hardener Bectron® EH 5909, results in hard moulding compounds with self-extinguishing properties (UL 94 V 0), a high thermal conductivity and a high permanent temperature resistance (thermal class F – 155 °C). Thus it is especially suited for the casting of components with high thermal loads, e. g. magnet coils for brakes, coils for lifting magnets, etc. For achieving the high level of thermal and mechanical properties of this casting system, a post-curing at higher temperatures of the cold-cured moulding compounds is possible. However, this post-curing is not absolutely required, since after a somewhat longer time the cold-cured moulding compounds will also achieve this high level of properties.

### Properties

- as delivered:

	<b>EP 5504</b>	<b>EH 5909</b>
Colour	light beige	colourless - transparent
Spec. gravity at 20 °C (DIN EN ISO 2811-1) [g/cm <sup>3</sup> ]	1,74 +/- 0,05	0,92 +/- 0,03
Viscosity (25°C) [mPas] (DIN 53019)	8000 +/- 2000	11 +/- 3

- of mixture:

	<b>EP 5504</b>
Mixing ratio (parts per weight)	
Bectron® EP 5504 : Hardener Bectron® EH 5909	100 : 9
Mixture viscosity (25°C,) [mPas] (DIN 53019)	3000 +/- 750
Spec. gravity at 20 °C (DIN 53217) [g/cm <sup>3</sup> ]	1,62 +/- 0,05
Pot-life (150 g, 23 °C, doubling of initial viscosity) [min]	75

Properties of moulding compound:

	<b>EP 5504</b>
Hardness Shore D (DIN 53505) after 24 h RT	82
Hardness Shore D (DIN 53505) after 24 h 80 °C	83
Bending strength (DIN 53452) [N/mm <sup>2</sup> ]	90 - 100
Impact strength (DIN 53453) [Mpa]	22 - 25
Compressive strength (DIN 53455) [N/mm <sup>2</sup> ]	110 – 120
Tensile strength (DIN 53455) [N/mm <sup>2</sup> ]	50 – 60
Modulus of elasticity (DIN 53455) [MPa]	2200 - 2500
Glass transition temperature tg [°C]	97
Linear coefficient of expansion under heat [K <sup>-1</sup> ]	6 – 6,5 · 10 <sup>-5</sup>
Dielectric strength [kV/mm]	20
Dielectric constant ε <sub>r</sub> (50 Hz, RT)	5,4
Dielectric loss tan δ (50 Hz, RT)	0,04
Spec. volume resistivity [Ω · cm]	5,6 · 10 <sup>14</sup>
Thermal conductivity (DIN 52613) [W/m · K]	0,96
Self-extinguishing properties acc. to UL 94	class V0 at 2,95 mm

## Processing

- Physiological data:** If possible, direct contact of the hands both with the individual components or with the mixture should be avoided. Make sure not to clean your hands with solvents because solvents tend to withdraw the natural fat from the skin and permit hazardous materials to penetrate the open skin pores through the solution. Additionally, we would refer to the provisions set forth in the EU Safety Data Sheets concerned. Protective ointments are highly recommended.
- Pretreatment:** The components to be moulded should be dry, clean and free from grease and fat.
- The Bectron<sup>®</sup> EP 5504 contains filler materials that tend to settle within certain limits and depending on the storage conditions. Therefore, thorough agitation is required prior to the mixing process itself.
- Mixing:** The Bectron<sup>®</sup> EP 5504 and the Hardener Bectron<sup>®</sup> EH 5909 are brought together in the defined mixing ratio. After intensive mixing, the compound is ready-for-application immediately.
- Application:** The processing time of this epoxy casting compound at room temperature is limited, as for all cold-hardening systems, and will be influenced by the starting temperature of the components and the exothermal reaction process. These factors are, above all, important for manual processing.
- Curing:**
- |                                       | at room temperature | afterwards at 100 °C*) |
|---------------------------------------|---------------------|------------------------|
| Bectron <sup>®</sup> EP 5504/ EH 5909 | approx. 48 h        | 1 - 6 h                |
- \*) post-curing is optional

**Auxiliary products**

- Treatment of moulds: Mould Release Agent 7590 S
- Cleaning of tools and equipment: Bectron® AC 93

**Shelf life**

For 9 months minimum in the closed original container, if stored properly (at room temperature).

**Container sizes**

- Bectron® EP 5504: bucket of 1 kg, 5 kg  
hoop of 30 kg
- Hardener Bectron® EH 5909: can of 1 kg

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