

## EpoPro<sup>®</sup> 120

**Filled One-Component Adhesive Paste / Insulating compound**

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EpoPro<sup>®</sup> 120 is a solvent-free, non-running one component epoxy paste suitable for many bonding, sealing and smoothing applications. It cures rapidly with heat and provides exceptional cured properties.

### Applications

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- Many Industrial & Electronic sealing and assembly applications
- Bonding Magnet cores, laminations and ferrites
- Wet-winding resin for rotating or stationary coils which require a high degree of turn to turn bond strength

### Properties

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- Very Good adhesion, even to slightly oily metal surfaces
- Excellent resistance to water, salt spray, chemicals and most environmental conditions
- Resistant to both cryogenic (-40C) and elevated temperatures (up to 160C)

**EpoPro® 120**

Density, g/cm <sup>3</sup>	ASTM D-792	at 25°C	1.41
Viscosity, cps			
Spindle #7 @ 0.5rpm			3,200,000
Spindle #7 @ 1 rpm			2,000,000
Spindle #7 @ 5 rpm			600,000
Spindle #7 @ 10 rpm			380,000
Flash point, °C	DIN 51758		>120
Press flow, g			10
material discharged in 10 seconds at 25°C through 2.6mm orifice at 3 kp/cm <sup>2</sup>			
Run-off, mm			
2mm layer		at 140°C	0
1mm layer		at 200°C	0
As supplied form	Black paste (other colors available by request)		
Shelf life, at -40°C	12 months		
Shelf life, at 10°C	6 months		
Shelf life, at 25°C	3 months		
Disposal	Regular procedures approved by national and /or local authorities		

**Storage**

EpoPro® 120 should be stored in a dry place and , whenever possible, in the tightly closed original containers. Shelf life will vary with storage temperature please see the information above for details of the shelf-life expected at various storage temperatures.

For information on waste disposal and hazardous products of decomposition in the event of fire, refer to the Material Safety Data Sheets (MSDS) for these particular products.

**Packaging**

EpoPro 120 can be supplied in a wide variety of packages including 5-gallon pails, gallon, quarts, pints, 1/10<sup>th</sup> gallon cartridges and many other cartridges and syringes.

Please contact us for information on the package sizes of most interest to you.

**NOTE:** The special composition of this insulating paste produces good adhesion, even on slightly oily metal surfaces. Optimal bonding strength, however, is obtained when the contact surfaces are degreased, mechanically abraded or chemically pretreated.

For small applications, the paste is best applied with a spatula or from a syringe or cartridge. A bond line thickness of 0.05–0.15mm will produce the best tensile shear strength.

After applying the insulating paste, the components should be assembled and clamped together. Even contact pressure is all that is required during curing.

Commercially available application guns or automatic metering pumps are suitable for large-scale processing of EpoPro® 120 US.

**Pre-cure**

Pre-cure times, minutes	at 140°C	6–7
	at 150°C	4-6
	at 160°C	3–4

Pre-cured bond lines are touch-dry and have achieved enough strength to be subjected to some handling without the likelihood of damage to the bondline.

**Cure conditions**

		<u>90% cure(DTA)</u>	<u>Optimal cure</u>
Minimal cure times, minutes	at 120°C	25–30	90–120
	at 140°C	8–12	40–50
	at 150°C	5–8	25 - 30
	at 160°C	4–6	20–25
	at 180°C	2–3	10–15

**Important:** The time required to heat joints to the indicated temperature is not included in this table and must be allowed for. At cure temperatures exceeding 180°C exothermic reactions might occur in adhesive layers over 2mm thick.

**Cleaning tools**

Tools are best cleaned with hot water and liquid soap or with a solvent such as acetone or MEK, before EpoPro® 120 US has had time to cure. The removal of cured residues may be a difficult and time-consuming operation. If solvents such as acetone or MEK are used for cleaning, workers should take the appropriate precautions and avoid skin contact.

<b>Tensile shear, N/mm<sup>2</sup> (psi)</b>		<b>DIN 53283</b>
Cured 180°C/30 min., various substrates at 23°C		
Anticordal B		33 (4786)
37.11 Steel		27 (3915)
37.11 Steel, oiled, after 30 minutes storage at 240°C		30 (4350)
<b>Tensile shear, N/mm<sup>2</sup> (psi.)</b>		<b>DIN 53283</b>
Cured 180°C/30 min., oily 37.11 sheet steel at various test temperatures		
-40°C		19 (2755)
0°C		19 (2755)
40°C		19 (2755)
80°C		18 (2610)
100°C		13 (1885)
120°C		5 (725)
140°C		3 (435)
160°C		2 (290)
<b>Cataplasma test, N/mm<sup>2</sup> (psi)</b>		
Oily 37.11 sheet steel samples cured at 180°C, 30 minutes, tested at 23°C. Cured tensile shear specimens were alternately conditioned for 12 hours at 80°C/100% r.h. and for 12 hours at 15–30°C		
after 7 days		19 (2756)
after 30 days		17 (2466)
after 60 days		16 (2321)
after 90 days		14 (2030)
<b>Coefficient of thermal expansion, in/in/°C</b>		<b>ASTM E-381</b>
20°C–60°C	Alpha 1	57 x 10 <sup>-6</sup>
20°C–100°C	Alpha 2	68 x 10 <sup>-6</sup>
<b><u>Bending test</u></b>		
Test specimen:	oiled 0.6mm thick 37.11 sheet steel, joint thickness 0.3mm, cured 180°C/30 minutes + 240°C/20 minutes	
Test:	at -40°C, bent round a 40 Ø mandrel	
Results:	isolated hair cracks, no spalling	
<b><u>T-peel test</u></b>		<b>DIN 53289</b>
Test specimen:	oiled 0.5mm thick 37.11 sheet steel, joint thickness 0.3mm. Cured at 180°C/30 minutes	
Results:	3–4 N/mm (17–23 pli)	
<b><u>Salt spray test</u></b> (tensile shear strength on oiled steel)		
As-made value:	20 N/mm <sup>2</sup> (2,900 psi)	
After 30 days:	15 N/mm <sup>2</sup> (2,175 psi)	
Thermal Conductivity, W/mK		0.38
Volume Resistivity, ohms-cm		5.1 x 10 <sup>16</sup>
Surface Resistivity, ohms		2.8 x 10 <sup>12</sup>
Dielectric Constant/Loss tangent(%) @25C		4.8 (1%)

## Handling precautions

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Do not handle or use until the Material Safety Data Sheets for resin and hardener have been read and understood.

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## Personal hygiene

### EpoPro® 120

**WARNING!** May cause severe skin irritation. Causes eye irritation. May cause skin burns and allergic skin reaction. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated contact with skin. Wash thoroughly after handling

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## First aid

In case of contact:

**Skin:** Immediately wash with soap and water. Remove contaminated clothing and launder before reuse. Destroy contaminated shoes.

**Eyes:** Immediately flush with water for at least 15 minutes. Call a physician.

**Ingestion:** If conscious, give plenty of water to drink. Do not induce vomiting. Call a physician.

**Inhalation:** Remove to fresh air. Administer oxygen or artificial respiration if necessary. Call a physician.

**Other:** Referral to physician is recommended if there is any question about the seriousness of any injury.

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