

LOCTITE® PC 9020L

July 2024

PRODUCT DESCRIPTION

LOCTITE® PC 9020L provides the following product characteristics:

Technology	Epoxy
Chemical type	Epoxy
Appearance (resin)	Yellow-greenish
Appearance (hardener)	Blue
Appearance (mixed)	Blue
Components	Two components – resin & hardener
Mix Ratio, (by weight) resin : hardener	100 : 4.68
Mix Ratio, (by volume) resin : hardener	100 : 8.67
Cure	Room temperature cure after mixing
Application	Crusher repair products
Application temperature	15°C to 65°C (59°F to 149°F)
Specific benefits	<ul style="list-style-type: none"> • Easy and safe to use • High compression strength • Low odor • Minimal shrinkage • Excellent impact resistance

LOCTITE® PC 9020L is an epoxy system for backing wear metal in gyratory and cone crushers. LOCTITE® PC 9020L is designed to eliminate the need for traditional melting or special equipment, and it has high hydrolytic stability (low water absorption). Its high volumetric stability eliminates the formation of gaps between backing and liners or support structures, allowing for fast return to service.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Resin:

Specific Gravity @ 23°C 1.78
 Viscosity, Brookfield - RVT @ 25 °C, mPa·s (cP):
 Spindle 6, speed 20 rpm 31,000

Hardener:

Specific Gravity @ 23°C 0.98
 Viscosity, Brookfield - RVT @ 25 °C, mPa·s (cP): 150

TYPICAL CURING PERFORMANCE

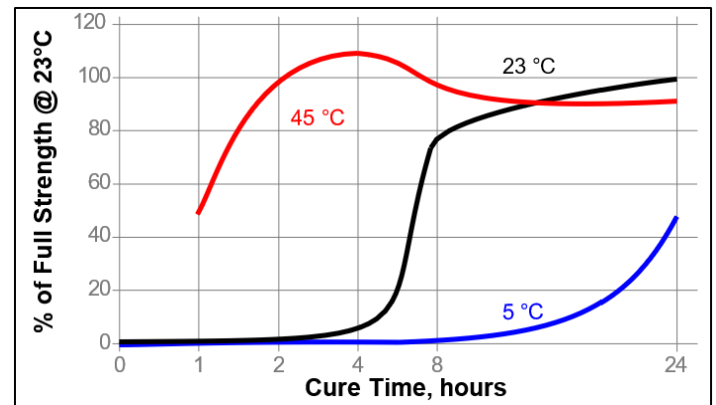
Curing @ 23°C, 50%RH

Gel time, 400g mass, ASTM D2471, minutes 40

Pot life, 200g mass, ISO 9514, minutes 25

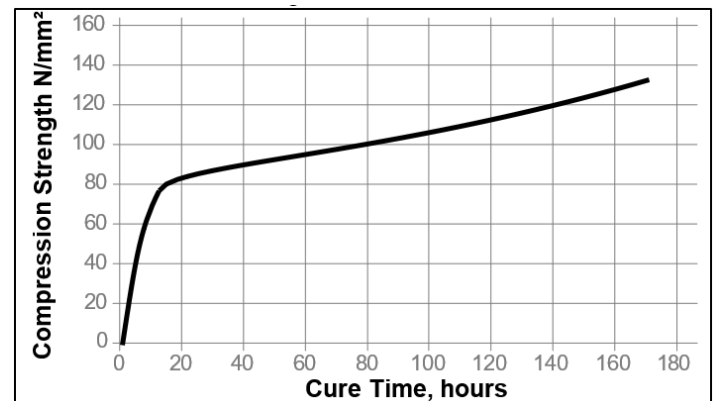
Cure speed vs. temperature

The graph below shows the shear strength developed with time @ 23°C on grit blasted mild steel lap shears at different temperatures and tested according to ISO 4587.



Compression strength build vs time

The graph below shows the compression strength developed over time at 23°C and tested according to ASTM D695.



TYPICAL PROPERTIES OF CURED MATERIAL

Cured for 1 week @ 23 °C

Physical properties:

Glass transition temperature (Tg), °C TMA, ISO 11359-2		38
Shore Hardness, ISO 868, Durometer D		90
Tensile strength, ISO 527-2	N/mm ² (psi)	48 (7,000)
Tensile Modulus, ISO 527-2	N/mm ² (psi)	4,700 (680,000)
Compressive strength, ISO 604	N/mm ² (psi)	124 (18,000)
Compressive modulus, ISO 604	N/mm ² (psi)	9,000 (1,300,000)
Flexural Strength, ASTM D790	N/mm ² (psi)	78 (11,000)
Flexural modulus, ASTM D790	N/mm ² (psi)	7,700 (1,100,000)
Coefficient of Thermal Expansion, ISO 11359-2, K ⁻¹ :		
Above Tg		39 x 10 ⁻⁶
Below Tg		120 x 10 ⁻⁶
Volume shrinkage, ISO 1675, %		3.1
Linear shrinkage, ISO 1675, %		1.1
Water absorption, ISO 62, %:		2

Electrical properties:

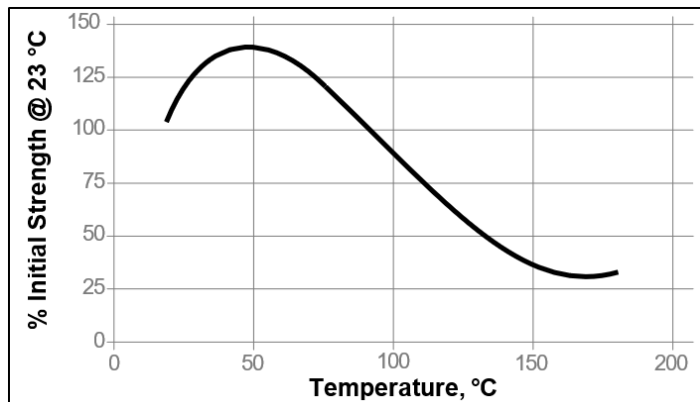
Surface resistivity, IEC 60093, Ω	2 x 10 ¹⁷
Volume resistivity, IEC 60093, Ω·cm	3 x 10 ¹⁵

TYPICAL ENVIRONMENTAL RESISTANCE

Cured for 1 week @ 23 °C

Lap Shear Strength ISO 4587:
Grit blasted mild steel (GBMS)**Hot strength**

Tested at temperature

**GENERAL INFORMATION**

This product is not recommended for use in pure oxygen and/or oxygen rich systems and should not be selected as a sealant for chlorine or other strong oxidizing materials.

For safe handling information on this product, consult the Material Safety Data Sheet.

Directions for use**Surface preparation**

Proper surface preparation is critical to the long-term performance of this product. The exact requirements vary with the severity of the application, expected service life, and initial substrate conditions.

1. If a bond to the substrate is desired, remove dirt, oil, grease etc. with a suitable cleaner, e.g. high-pressure water cleaning system using LOCTITE® cleaner/degreaser, from all metallic parts that come in contact with LOCTITE® PC 9020L.
2. If easier removal of worn liners is desired, coat the appropriate surfaces with a release agent such as grease or light oil.
3. Seal all gaps, hook holds, bottom joints, and protected threaded parts of shafts where necessary.

Preparation of Backing Material

LOCTITE® PC 9020L and substrate must be between 15 to 65°C (60 to 150°F) before application:

Mixing

1. Pre-mix resin approximately 1 minute.
2. Shake hardener thoroughly mixing its contents.
3. While mixing resin, add hardener contents.
4. LOCTITE® PC 9020L is formulated for a color change indication when the hardener component is added to the resin, changing from yellowish-green to dark blue. As the product is mixed, dark blue streaks will appear in the product.
5. Continue mixing until the entire contents of the pail are dark blue, making sure to scrape the sides and bottom of the pail thoroughly until there are no signs of yellowish-green material.

Application

1. Pour mixture immediately after mixing. Pour at one place and allow LOCTITE® PC 9020L to fill the cavity and push out the air in front of it. Use dam (tin, cardboard, clay, etc.) to direct the flow when necessary. Any unmixed resin (different color clinging to the sides and bottom) should not be drained into the crusher.
2. Succeeding kits may be mixed and poured individually as needed. LOCTITE® PC 9020L adheres to itself.



Caution: Use an approved, positive-pressure, supplied air respirator when welding or torch cutting near cured compound. **Do Not** use open flame on compound.

Technical Tips for Working With Epoxies

Environmental Conditions

- Relative humidity: <85%
- Ambient temperature: >15°C (60°F) and rising
- Substrate temperature must always be 3°C (7°F) higher than the dew point to avoid condensing moisture on parts.

Working time and cure depends on temperature and mass:

- The higher the temperature, the faster the cure.
- The larger the mass of material, the faster the cure.

To speed the cure of epoxies at low temperatures:

- Store epoxy at room temperature.
- Pre-heat repair surface until warm to the touch.

To slow the cure of epoxies at high temperatures:

- Mix epoxy in small masses to prevent rapid curing.
- Cool resin/hardener component(s).

Coverage

13,900 cm³ per 19-liter kit (850 in³ per 5-gallon kit)
5,576 cm³ per 7.5-liter kit (340 in³ per 2-gallon kit)

Clean-up

Immediately after use, clean tools with LOCTITE® solvent based cleaner. Once cured, the material can only be removed mechanically.

Storage

Store product in the unopened container in a dry location. Storage information may be indicated on the product package labeling.

Optimal Storage: 8°C to 21°C. Storage below 8°C or greater than 28°C can adversely affect product properties.

Material removed from containers may be contaminated during use. Do not return product to the original container. Henkel Corporation cannot assume responsibility for product which has been contaminated or stored under conditions other than those previously indicated. If additional information is required, please contact your local Henkel representative.

Product specification

The technical data contained herein are intended as reference only and are not considered specifications for the product. Product specifications are located on the Certificate of Analysis or please contact Henkel representative.

Approval and certificate

Please contact Henkel representative for related approval or certificate of this product.

Data ranges

The data contained herein may be reported as a typical value. Values are based on actual test data and are verified on a periodic basis.

Temperature/Humidity Ranges: 23°C / 50% RH = 23±2°C / 50±5% RH

Conversions

(°C x 1.8) + 32 = °F
kV/mm x 25.4 = V/mil
mm / 25.4 = inches
µm / 25.4 = mil
N x 0.225 = lb
N/mm x 5.71 = lb/in
N/mm² x 145 = psi
MPa x 145 = psi
N·m x 8.851 = lb·in
N·m x 0.738 = lb·ft
N·mm x 0.142 = oz·in
mPa·s = cP

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