Technical Data Sheet

LOCTITE® PC 7321

Known as Polypoxy PS
October 2024

PRODUCT DESCRIPTION

LOCTITE® PC 7321 provides the following product characteristics:

Technology	Epoxy
Chemical type	Polysulphide modified epoxy
Appearance (resin)	White, light grey, grey
Appearance (hardener)	Beige liquid
Appearance (mixed)	White, light grey, grey
Components	Two components – resin & hardener
Mix Ratio, (by weight) resin : hardener	1 : 1
Mix Ratio, (by volume) resin : hardener	1 : 1
Cure	Room temperature cure after mixing
Application	Coating
Application temperature	10°C to 40°C (50°F to 104°F)
Service temperature	up to 70°C (158°F)
Specific benefits	• Enhanced adhesion to many substrates • Good corrosion protection • Good impact resistance • Chemical resistance to a wide variety of fluids • Very low permeability to water and vapor • Non-toxic • Good flexibility and crack bridging ability • VOC free • Easy to apply

LOCTITE® PC 7321 is a two-component polysulphide modified epoxy based protective coating designed for superior adhesion, corrosion protection and high chemical resistance for steel and concrete structures. It is a two-part system which can be applied up to 1mm thickness to provide a flexible, elastomeric, crack bridging, water and chemical resistant coating. Typical applications include industrial corrosion protection of steel and concrete structures, hard wearing floor coating, water pipes ,tanks and vessels against external chemical attacks.

Typical properties of uncured material

Resin	
Specific Gravity @ 23°C	1,5
Viscosity, brookfield – RVF @ 25°C, mPa.s (cP): Spindle 5, speed 10 rpm,	17,500
Hardener	
Specific Gravity @ 23°C	1.5
Viscosity, brookfield – RVF @ 25°C, mPa.s (cP): Spindle 5, speed 20 rpm,	5,600
Mixed	
Specific Gravity @ 23°C	1.5
Viscosity, brookfield – RVF @ 25°C, mPa.s (cP): Spindle 5, speed 20 rpm,	5,800

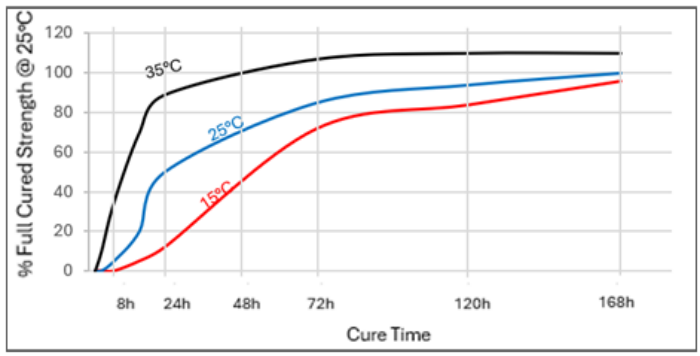
Typical curing performance

Curing @ 23°C, 50%RH

Gel Time, ASTM D2471, minutes	150
Pot life (200g mass, spindle 5, 20 rpm), STM 10, minutes	45
Recoat time, hours	10-12

Cure Speed vs. Temperature

The graph below shows the shear strength developed with time on grit blasted mild steel lap shears and tested according to ISO 4587.



Typical performance of cured material
Cured for 1 week @ 23°C, then heating 1 hour @105°C

VOC content (3g mass), ISO 11890-1:2007, g/L	24

Cured for 1 week @ 23°C

Physical properties:

Glass Transition Temperature (Tg), °C DSC, ISO 11357-3	48
Shore Hardness, ASTM 2240, Durometer D	72
Bend test, ISO ISO 1519, mm	2
Impact test, GB/T 1732-2020, cm	50

Abrasion properties:

Taber Abrasion Resistance, ASTM D4060, mg	
1 kg load, CS-17 wheels, 1,000 cycles	163
1 kg load, CS-10 wheels, 1,000 cycles	100
Weight of material lost	(dry)

Adhesive properties:

Lap Shear Strength, ISO 4587 Mild steel (grit blasted)	N/mm^2 (psi)	13 (1,900)
Pull Off Adhesion, ISO 4624 Mild steel (grit blasted)	N/mm^2 (psi)	9 (1,300)

TYPICAL ENVIRONMENTAL RESISTANCE
Cured for 1 week @ 23°C
The table below shows chemical resistance performance under immersed test.

Chemical type	Test time	Test standard	Result
Water	30 days	GB/T 1733-1993	pass
Salt Water (40°C, 3% Nacl)	7 days	GB/T 9274-1988 (ISO 2812:1974)	pass
Sulphuric Acid (3%)	30 days	GB/T 9274-1988 (ISO 2812:1974)	pass
Sodium hydroxide (3%)	30 days	GB/T 9274-1988 (ISO 2812:1974)	pass
Neutral salt spray	5000 hrs	GB/T 1771-2007 (ISO 7253:1996)	pass

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. Remove dirt, oil, grease etc with a suitable cleaner, e.g. high-pressure water cleaning system using LOCTITE® cleaner/degreaser.
2. All skip welds, weld spatter, buckshot, and other surface roughness must be ground down; undercuts and pinholes must be ground and filled. All projections, edges, high points, and fillets must be ground to radius of at least 3mm and all corners must be likewise rounded to maximize product performance.
3. Blast all surfaces to be coated with a sharp edged angular grit to a depth of profile of 75 to 100 microns and a degree of cleanliness of Near White Metal (SIS SA 2½ /SSPC-SP 10). For immersion service, a degree of cleanliness of white metal (SIS SA 3/SSPC-SP 5) is required.
4. After blasting, metal surfaces should be cleaned, e.g. with LOCTITE® solvent based, residue free cleaner becoated before any oxidation or contamination takes place.
5. Metal that has been in contact with salt solutions, e.g. seawater,should be grit blasted and high-pressure water blasted, left for 24hours to allow any salts in the metal to sweat to the surface. A test for chloride contamination should be performed. The procedure should be repeated until chloride concentration on the surface is below $50mg/m^2$ ($50\mu g/cm^2$). Then blast and clean the surface as described on point 3 and 4 above.

Mixing
1. Mix Part A (resin) and Part B (hardener) separately for one minute using a slow speed drill fitted with a paddle. Then add Part B into Part A and mix thoroughly for 2-3 minutes to achieve uniform consistency.
2. Apply immediately after mixing within the pot life.

Application
1. Film thickness per coat: 200 to 250 microns (8 to 10 mils). Minimum of 2 coats is recommended to avoid any pin holes. Layering of two different colors may be used as a wear indicator for re-application.
2. Multiple coat application may be carried out within the time if final thickness cannot be achieved with one application. If this time has elapsed, light abrasive blasting is required, followed by a solvent wash to remove any abrasive residues.
3. Ambient and substrate temperature range: 15 to 40°C (59 to 104°F)
4. Relative humidity: <85 %; substrate temperature must always be 3°C higher than the dew point.

Inspection
1. Visually inspect for pinholes and voids just after application.
2. Once the coating has cured, repeat visual inspection to confirm absence of pinholes, voids, or damaged areas.
3. Control thickness of the coating, especially in the critical points.
4. Perform a test with a holiday detector to confirm coating continuity.

Color
1. Color variation is possible between the batches and will not affect the performance of the product.
2. LOCTITE® PC 7321 is available in three colors.

Coverage
To achieve a 0.25 millimeter (10 mils) thickness, the coverage rate will be 80 m² (861 ft²) for 30 kg (66 lb) / 20L (5.28 gal), excluding overthickness, repairs, etc.

Repairs
Any voids, pinholes, low thickness areas found in the coating should be repaired by lightly abrading, cleaning and applying further product.

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

Disclaimer
The information provided in this Technical data sheet (TDS) including the recommendations for use and application of the product are based on our knowledge and experience of the product as at the date of this TDS. The product can have a variety of different applications as well as differing application and working conditions in your environment that are beyond our control. Henkel is, therefore, not liable for the suitability of our product for the production processes and conditions in respect of which you use them, as well as the intended applications and results. We strongly recommend that you carry out your own prior trials to confirm such suitability of our product. Any liability in respect of the information in the Technical data sheet or any other written or oral recommendation(s) regarding the concerned product is excluded, except if otherwise explicitly agreed and except in relation to death or personal injury caused by our negligence and any liability under any applicable mandatory product liability law.

In case products are delivered by Henkel Belgium NV, Henkel Electronic Materials NV, Henkel Nederland BV, Henkel Technologies France SAS and Henkel France SA please additionally note the following:
In case Henkel would be nevertheless held liable, on whatever legal ground, Henkel's liability will in no event exceed the amount of the concerned delivery.

In case products are delivered by Henkel Colombiana, S.A.S. the following disclaimer is applicable:
The information provided in this Technical Data Sheet (TDS) including the recommendations for use and application of the product are based on our knowledge and experience of the product as at the date of this TDS. Henkel is, therefore, not liable for the suitability of our product for the production processes and conditions in respect of which you use them, as well as the intended applications and results. We strongly recommend that you carry out your own prior trials to confirm such suitability of our product. Any liability in respect of the information in the Technical Data Sheet or any other written or oral recommendation(s) regarding the concerned product is excluded, except if otherwise explicitly agreed and except in relation to death or personal injury caused by our negligence and any liability under any applicable mandatory product liability law.

In case products are delivered by Henkel Corporation, or Henkel Canada Corporation, the following disclaimer is applicable:
The data contained herein are furnished for information only and are believed to be reliable. We cannot assume responsibility for the results obtained by others over whose methods we have no control. It is the user's responsibility to determine suitability for the user's purpose of any production methods mentioned herein and to adopt such precautions as may be advisable for the protection of property and of persons against any hazards that may be involved in the handling and use thereof. In light of the foregoing, **Henkel Corporation specifically disclaims all warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose, arising from sale or use of Henkel Corporation's products. Henkel Corporation specifically disclaims any liability for consequential or incidental damages of any kind, including lost profits.** The discussion herein of various processes or compositions is not to be interpreted as representation that they are free from domination of patents owned by others or as a license under any Henkel Corporation patents that may cover such processes or compositions. We recommend that each prospective user test his proposed application before repetitive use, using this data as a guide. This product may be covered by one or more United States or foreign patents or patent applications.

Trademark usage
Except as otherwise noted, all trademarks in this document are trademarks of Henkel Corporation in the U.S. and elsewhere. ® denotes a trademark registered in the U.S. Patent and Trademark Office.

Reference 2