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Technical Data Sheet

LOCTITE® PC 7255™

Known as LOCTITE® Nordbak® Sprayable Ceramic 7255™
October 2016

PRODUCT DESCRIPTION

LOCTITE® PC 7255™ provides the following product characteristics:

Technology	Epoxy
Chemical type	Epoxy
Appearance (Resin)	Green or grey liquid
Appearance (Hardener)	Blue or grey liquid
Appearance (Mixture)	Brilliant green or grey liquid
Components	Two part - Resin & Hardener
Mix ratio, by volume - Resin : Hardener	100 : 50
Mix ratio, by weight - resin : hardener	100 : 50
Cure	Room temperature cure after mixing
Application	Coating
Product Benefits	• Smooth sprayable consistency • Gloss finish to reduce friction and turbulence • Excellent adhesion
Specific application	• Resurfacing and repairing of worn or corroded metal parts • Protecting metal surfaces against abrasive and corrosive agents

LOCTITE® PC 7255™ sprayable ceramic is a solvent-free ceramic filled two part epoxy coating. It is designed to protect metal surfaces against abrasive and corrosive agents. It can be used as smooth, protective coating on metal surfaces or as a low friction top coat over LOCTITE® Nordbak® wear resistant compounds. Typical applications are repairing and protecting of heat exchangers, condensers, lining tanks, chutes, valve bodies or pump impellers and housings.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Resin

Aluminium alclad @ 25°C	1.5
Viscosity, Brookfield - DVT, 25 °C, mPa·s (cP):	
Spindle 7, Speed 100 rpm	12,000
Viscosity, Plate to Plate mPa·s (cP):	
Temperature: 25°C, Shear Rate: 0.3 s^{-1}	95,000
Temperature: 25°C, Shear Rate: 40 s^{-1}	5,000

Hardener

Aluminium alclad @ 25°C	1.5
Viscosity, Brookfield - DVT, 25 °C, mPa·s (cP):	
Spindle 7, Speed 100 rpm	2,700
Viscosity, Plate to Plate mPa·s (cP):	
Temperature: 25°C, Shear Rate: 0.3 s^{-1}	21,500
Temperature: 25°C, Shear Rate: 40 s^{-1}	1,350

Mixed

Aluminium alclad @ 25°C	1.5
Viscosity, Brookfield - DVT, 25 °C, mPa·s (cP):	
Spindle 7, Speed 100 rpm	5,000
Vertical Sag Resistance, 25°C, ISO 16862, µm:	700

TYPICAL CURING PERFORMANCE

Pot life (200g mass), ISO 9514, minutes:	55
Recoat time, @ 25°C, hours:	2

Surface Drying Time - ISO 1517

@ 15°C, hours	7
@ 22°C, hours	4
@ 35°C, minutes	90
@ 45°C, minutes	70

TYPICAL PROPERTIES OF THE DRIED MATERIAL

Cured for 7 days @ 22°C

Physical Properties

Glass Transition Temperature , °C: (Tg) by TMA ISO 11359-2		63
Elongation at break, ISO 527-2, %		1.4
Shore hardness ISO 868, Durometer D		86
Tensile strength, ISO 527-2	N/mm^2 (psi)	47 (6,815)
Tensile Modulus, ISO 527-2	N/mm^2 (psi)	5,841 (846,945)
Compressive Strength, ISO 604	N/mm^2 (psi)	106 (15,400)
Compressive Modulus, ISO 604	N/mm^2 (psi)	3,260 (472,700)

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Electrical properties:

Dielectric Strength, IEC 60243-1, kV/mm	13

TYPICAL PERFORMANCE OF CURED MATERIAL

Cured for 7 days @ 22°C

Tensile Lap Shear Strength: Mild Steel (grit blasted)	N/mm^2 (psi)	31 (4,500)
Taber Wear Resistance, Weight Lost, mg: Wheels H 18, 1 Kg load, 1,000 cycles		45
Cathodic Disbondment, Penetration, mm: (ASTM G 95, 90-day test)		0
Dry Service Temperature Resistance, °C: (CSA-Z245.20-06/CSA-Z245.21-06 Rating 1)		110
Wet Service Temperature Resistance, °C: (CSA-Z245.20-06/CSA-Z245.21-06 Rating 1)		90

Note to CSA standard: After storage in hot air or water for 28 days at the temperature indicated the coating applied on a metal panel, Rating 1, cannot be removed cleanly.

TYPICAL ENVIRONMENTAL RESISTANCE

Cured for 7 days @ 22°C

Chemical Resistance

Tables below show chemical resistance @ 22°C. Tested on product specimens, immersed up to 5,000 hours @ 22°C in fluids indicated.

Acids

10 % hydrochloric	Continuous long-term immersion
36 % hydrochloric	Continuous long-term immersion
10 % sulphuric	Continuous long-term immersion
10 % nitric	Short-term or intermittent immersion
5 % phosphoric	Continuous long-term immersion

Alkalis

40 % sodium hydroxide	Continuous long-term immersion
25 % ammonium hydroxide	Continuous long-term immersion
36 % ammonium sulphate	Continuous long-term immersion
30 % hydrogen peroxide	Spill, splash with immediate cleanup

Solvents

Deionized Water	Continuous long-term immersion
10 % Salt Water	Continuous long-term immersion
Methanol	Spill, splash with immediate cleanup
Methylethylketone (MEK)	Spill, splash with immediate cleanup
Xylene	Spill, splash with immediate cleanup

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 Safety Data Sheet (SDS).

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.

- Remove dirt, oil, grease etc with a suitable cleaner, e.g.high-pressure water cleaning system using LOCTITE®7840™ or LOCTITE® Natural Blue® cleaner/degreaser.
- All skip welds, weld spatter, buckshot, and other surface roughness must be ground down; undercuts and pinholes must be ground and filled. All projections, sharp edges, high points, and fillets must be ground smooth to radius of at least 3mm and all corners must be likewise rounded to maximize product performance.
- 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 SA2½ /SSPC-SP 10). For immersion service, a degree of cleanliness of White Metal (SIS SA 3/SSPC-SP 5) is required.
- After blasting, the metal surface should be cleaned with a residue-free cleaner or solvent to remove dust and contaminants. Clean, dry compressed air may also be used to remove dust and contaminants. The surface should be coated before any new oxidation occurs.
- Metal that has been in contact with salt solutions, e.g.seawater, should be grit blasted and high-pressure water blasted, left for 24 hours 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 40 ppm.

Application

- Film thickness per coat: 250 microns (8 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. In this case LOCTITE® PC 7255™ green should be applied as a first layer
- Multiple coat application may be carried out within the re-coat time. If this time has elapsed, light abrasive blasting is required, followed by a solvent wash to remove any abrasive residues
- Apply material to prepared surface by first forcing a thin layer deep into the texture of the substrate
- Then Immediately build up to the desired finished thickness

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- For Cartridge system:
  - Pre-heat cartridges to 50°C and maintain this temperature until spraying.
  - Set product pressure to approximately 2 bar (30 psi) and air pressure to approximately 5 bar (70 psi).
  - Place nozzle in a perpendicular position to the substrate with a distance from nozzle to substrate about 30 cm.

Coverage rate
To achieve a 250 microns (8 mils) thickness, the coverage rate will be 2.7 m^2 (26.9 ft^2) for 1 kg (2.2 lb), excluding overthickness, repairs, etc.

Inspection
- Visually inspect for pinholes and misses just after application.
- Once the coating has cured, repeat visual inspection to confirm freedom from pinholes, misses and mechanical damages.
- Control thickness of the coating, especially in the critical points.
- Perform a test with a holiday detector to confirm coating continuity.

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

Clean-up
1. Immediately after use clean tools with suitable cleaner, e.g. TEROSON® PU 8550 or BONDERITE® C-MC 21130. Once cured, the material can only be removed mechanically.

Color
Color variation is possible between the batches and will not affect the performance of the product.
LOCTITE® PC 7255™ is available in different colors.

Storage
Store product in the unopened container in a dry location. Storage information may be indicated on the product container 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 Technical Service Center or Customer Service Representative.

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/mm^2 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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