Technical Data Sheet

# LOCTITE® PC 7221™

Known as LOCTITE® 7221™
November 2014

## PRODUCT DESCRIPTION

LOCTITE® PC 7221™ provides the following product characteristics:

| | |
|---|---|
| **Technology** | Epoxy |
| Chemical Type | Epoxy |
| Appearance (Resin) | Grey[LMS] |
| Appearance (Hardener) | Amber[LMS] |
| Appearance (Mixture) | Gray liquid |
| Components | Two component - requires mixing |
| Mix Ratio, by volume - Resin : Hardener | 2.3 : 1 |
| Mix Ratio, by weight - Resin : Hardener | 3.4 : 1 |
| **Cure** | Room temperature cure |
| **Application** | Chemical resistance |
| Specific Benefit | • Protects surfaces from extreme chemical attack<br>• Easy to mix and use<br>• Brush applied<br>• Smooth finish protects against friction and turbulence<br>• Superior adhesion - bonds well to all metal substrates |

LOCTITE® PC 7221™ is designed to protect equipment and concrete against extreme corrosion caused by chemical exposure, especially to sulfuric acid. LOCTITE® PC 7221™ forms a glossy, low friction surface under typical service temperatures of -29 °C to 65 °C. Typical applications include resurface tube sheets, condensers, cooling pump impellers, butterfly valves and cavitated pumps, line tanks and chutes, resurface and repair rudders and pintle housings, line chemical containment areas.

## TYPICAL PROPERTIES OF UNCURED MATERIAL

**Resin**:

| | |
|---|---|
| Weight Per Gallon, lbs/gal | 12.9 to 13.5[LMS] |
| Viscosity, Brookfield - RV, 25 °C, mPa·s (cP): | |
| Spindle 7,, speed 20 rpm, | 40,000 to 60,000[LMS] |

**Hardener**:

| | |
|---|---|
| Weight Per Gallon, lbs/gal | 8.6 to 9.1[LMS] |
| Viscosity, Brookfield - RV, 25 °C, mPa·s (cP): | |
| Spindle 2, speed 20 rpm, | 400 to 850[LMS] |

**Mixed**:

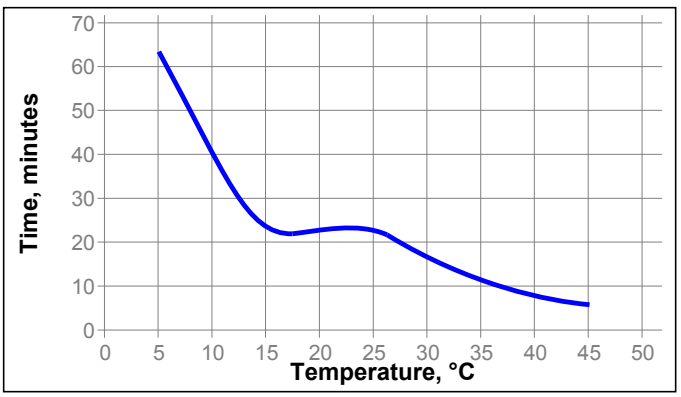
| | |
|---|---|
| Coverage | 6.8 m² @ 0.5 mm thick/5.5 kg<br>(74 ft² @ 20 mils thick/12 lb) |
| Viscosity, Cone & Plate, 25 °C, mPa·s (cP): | |
| Shear rate 10 $s^{-1}$ | 5,000 |

## TYPICAL CURING PERFORMANCE

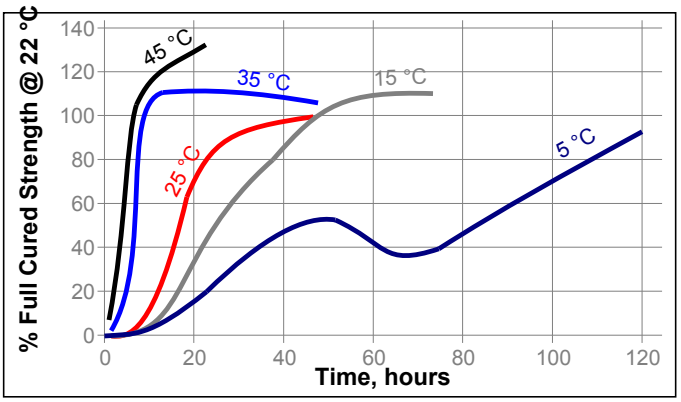
### Curing Properties

| | |
|---|---|
| Gel Time @ 25 °C, minutes: | |
| 400 g mass | 28 to 40[LMS] |
| Recoat Time @ 25 °C, hours | 1 to 4 |
| Wet Temperature Resistance, °C | >93 |

### Working Life




### Cure Time



## TYPICAL PROPERTIES OF CURED MATERIAL

Cured @ 25 °C

**Physical Properties**:

| | | |
|---|---|---|
| Shore Hardness, ISO 868, Durometer D | | 83 |
| Compressive Strength, ISO 604 | N/mm² | 69.0 |
| | (psi) | (10,000) |

## TYPICAL PERFORMANCE OF CURED MATERIAL

**Adhesive Properties**

Cured for 48 hours @ 25 °C

Lap Shear Strength, ISO 4587:

| | | |
|---|---|---|
| Steel (grit blasted) | N/mm² | 17.2 |
| | (psi) | (2,500) |
| Dry Service Temperature Resistance, °C (CSA-Z245.20-06/CSA-Z245.21-06 Rating 2) | | 110 |
| Wet Service Temperature Resistance, °C (CSA-Z245.20-06/CSA-Z245.21-06 Rating 2) | | 90 |

## 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.

**Metal:**

1. Clean, dry and abrade application surface. The more thorough the degree of surface preparation the better the performance of the application. If possible, it is recommended that the surface be grit-blasted to a Near White Metal (SSPC-SP10/NACE No. 2) Standard. For less severe applications, roughening the surface with hand tools is suitable.
2. Solvent cleaning with a residue-free solvent is recommended at the final step to aid in adhesion.

**Concrete:**

1. Concrete must be cured for at least 30 days.
2. Remove all grease, oil and dirt by washing thoroughly. Remove all surface contaminants such as old coating, loose conrete and dust by dry abrasive blasting, water blasting, scarifying or by acid etching and thoroughly rinsing.
3. Prepared surface must be rough with no excess of water. Surface profile CSP3 to CSP5 (ICRI - standard guideline 03732).
4. All surface irregularities, such as joints, holes, pores and cracks must be filled.
5. Concrete must be completely dry prior to application of product.

**Mixing:**

1. Material temperature should be between 18 °C to 27 °C.
2. Mix the entire contents of resin and hardener. If smaller amounts are required, mix 2.3 parts resin to 1 part hardener by volume, or 3.4 parts resin to 1 Part hardener by weight.
3. Mix vigorously, 3 to 5 minutes, until a uniform color is obtained.

**Application Method:**

1. Apply fully mixed material to the prepared surface .
2. Immediately clean any contaminated skin or clothing with soap and water.
3. Material can be applied with a brush or a 3/8 nap roller with a good core.

**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**

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).

**Loctite Material Specification**[LMS]

LMS dated June 13, 2001 (Resin) and LMS dated June 13, 2001 (Hardener). Test reports for each batch are available for the indicated properties. LMS test reports include selected QC test parameters considered appropriate to specifications for customer use. Additionally, comprehensive controls are in place to assure product quality and consistency. Special customer specification requirements may be coordinated through Henkel Loctite Quality.

**Storage**

Store product in the unopened container in a dry location. Material removed from containers may be contaminated during use. Do not return liquid to original container. 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**. Henkel cannot assume responsibility for product which has been contaminated or stored under conditions other than those recommended. 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/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

**Note:**
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.
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Reference 1.5



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