

LOCTITE® PC 7254

Known as NORTH AMERICA - FIXMASTER ALUMINUM PUTTY May 2017

Product description

LOCTITE® PC 7254 provides the following product characteristics:

Technology	Epoxy
Chemical type	Epoxy
Appearance (resin)	Gray
Appearance (hardener)	Silver
Appearance (mixed)	Aluminum gray paste
Mix ratio, by volume - resin: hardener	4 : 1
Mix ratio, by weight - resin: hardener	6.3 : 1
Cure	Room temperature cure after mixing
Application	North America - Metal repair
Specific benefits	<ul style="list-style-type: none"> • Will not sag or shrink • Easy to mix and use • Rebuilds worn parts fast - limits downtime • Forms a non-rusting aluminum like finish • Superior adhesion - forms a solid bond

LOCTITE® PC 7254 is a two-part epoxy system heavily reinforced with aluminum powder. Ideal for repairing non structural defects in aluminum castings, or for use where an aluminum finish is desired. This product is typically used in applications with an operating range of 30 °C to 95 °C (20°F to 200°F). Typical applications include repairing aluminum castings and worn aluminum parts, making models and jigs for odd shaped parts and making aluminum dies.

Typical properties of uncured material

Resin

Weight per volume	kg/L	1.69 to 1.76
	(lbs/gal)	(14.1 to 14.7)
Viscosity, Brookfield - RVDV, 25 °C, mPa·s (cP):		
Spindle TF, speed 2.5 rpm		1,900,000 to 2,600,000

Hardener

Weight per volume	kg/L	1.08 to 1.12
	(lbs/gal)	(9.0 to 9.3)
Viscosity, Brookfield - RVDV, 25 °C, mPa·s (cP):		
Spindle TF, speed 2.5 rpm		1,500,000 to 2,500,000

Mixed

Density @ 21°C	1.49
Flash point - see SDS	

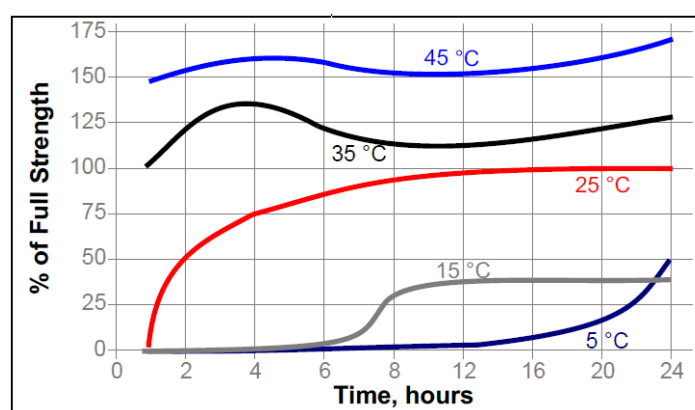
Typical curing performance

Curing properties

Gel time @ 25°C, minutes	60 to 80
Working life, minutes	20

Cure speed vs. temperature

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



Typical properties of cured material

Cured @ 25°C except where noted

Physical properties

Tensile strength, ISO 527-2	N/mm ² (psi)	29.2 (4,230)
Tensile modulus, ASTM D638	N/mm ² (psi)	8,700 (1,261,000)
Compressive strength, ISO 604	N/mm ² (psi)	62 (9,000)
Compressive modulus, ISO 604	N/mm ² (psi)	2,820 (408,840)
Flexural strength, ASTM D790	N/mm ² (psi)	58 (8,450)
Flexural modulus	N/mm ² (psi)	5,640 (817,220)

Shore Hardness, ISO 868, Shore D	84
Glass Transition Temperature, ASTM E 1640, °C	68
Coefficient of Thermal Expansion, ISO 11359-2, K ⁻¹	
Below Tg	47×10 ⁻⁶
Above Tg	134×10 ⁻⁶
Elongation, ISO 527-2, %	0.41
Volume Shrinkage, %	0.84
Coefficient of thermal conductivity ASTM F 433, W/(m·K)	0.8
Abrasion resistance, ASTM D4060, mg 1 Kg load, CS-10 wheels, Weight of Material Lost	122

Electrical Properties

Volume Resistivity, IEC 60093, ohm-cm	0.41×10 ¹⁵
Surface Resistivity, IEC 60093, ohms	36×10 ¹⁵

Typical performance of cured material

Shear strength

Lap Shear Strength, ISO 4587:

Grit Blasted Mild Steel (GBMS)	N/mm ² (psi)	13.9 (2,015)
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Typical environmental resistance

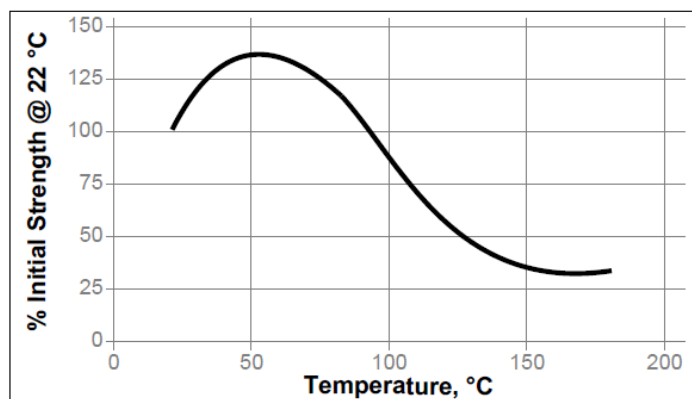
Cured for 72 hours @ 21°C

Lap Shear Strength, ISO 4587

Grit Blasted Mild Steel (GBMS)

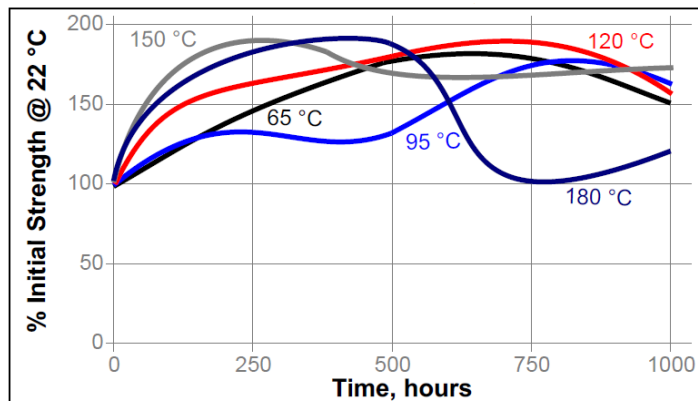
Hot Strength

Tested at temperature



Heat Aging

Aged at temperature indicated and tested @ 22 °C.



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).

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.

Directions for Use:

1. Remove dirt, oil, grease, etc. with a suitable cleaner, e.g. high pressure water cleaning system using Loctite® SF7840™ (Loctite® Natural Blue® cleaner/degreaser).
2. 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).
3. After blasting, metal surfaces should be cleaned with waterless cleaner, e.g. with Loctite® SF 7611™ (Loctite® Pro Strength Parts Cleaner), and be coated before any oxidation or contamination takes place.
4. Metal that has been in contact with salt solutions, e.g. seawater, should be grit blasted, high-pressure water blasted, and 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

1. Mix resin and hardener according to mix ratios listed or transfer entire kit onto a clean and dry mixing surface and mix material vigorously until a uniform color is obtained.
2. Apply material to prepared surface by first forcing a thin layer deep into the texture of the substrate.
3. Then immediately build up to the desired finished thickness.
4. If using to rebuild shaft, the following applies:
 - Machine the worn area down 3 mm (0.125 in) to produce a square shoulder on part.
 - The material is stronger with a square edge versus a feathered edge.
 - Machine a spiral cut in bottom of area to be repaired to provide mechanical keying into surface.
 - Apply excess product to ensure small shrinkage during cure does not produce depression.
 - Machine the surface to original dimensions prior to full cure, as the product is very wear resistant.

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.

Coverage

To achieve a 6 mm (.25 in) thickness, the coverage rate will be 464cm² (72in²) for 0.45kg (1lb), 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 suitable cleaner, e.g. Loctite® 7070™ or a solvent such as acetone or isopropyl alcohol. Once cured, the material can only be removed mechanically.

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).

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.

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.

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

Approval and certificate

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

Conversions

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$
 $\text{kV/mm} \times 25.4 = \text{V/mil}$
 $\text{mm} / 25.4 = \text{inches}$
 $\mu\text{m} / 25.4 = \text{mil}$
 $\text{N} \times 0.225 = \text{lb}$
 $\text{N/mm} \times 5.71 = \text{lb/in}$
 $\text{N/mm}^2 \times 145 = \text{psi}$
 $\text{MPa} \times 145 = \text{psi}$
 $\text{N}\cdot\text{m} \times 8.851 = \text{lb}\cdot\text{in}$
 $\text{N}\cdot\text{m} \times 0.738 = \text{lb}\cdot\text{ft}$
 $\text{N}\cdot\text{mm} \times 0.142 = \text{oz}\cdot\text{in}$
 $\text{mPa}\cdot\text{s} = \text{cP}$

Note:

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.



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Reference 2