

Research, Development & Engineering

Tallaght Business Park, Dublin, Ireland

PRELIMINARY

Technical Data Sheet Product 5222

Worldwide Version, May 2000

PRODUCT DESCRIPTION

LOCTITE[®] Product 5222 is a one component general purpose polyurethane elastomeric sealant/adhesive which cures at ambient temperature under the influence of atmospheric moisture.

TYPICAL APPLICATIONS

Sealing/bonding a wide variety of metals (painted/unpainted), plastics and woods particularly where good joint flexibility is required. Overpaintable with many paints. For best adhesion and durability it is recommended to use Loctite polyurethane primers as appropriate, (see Directions for Use).

PROPERTIES OF UNCURED MATERIAL

	Typical Value
Chemical Type	Polyurethane
Appearance	White
Specific Gravity @ 25°C	1.2
Viscosity @ 25°C	Thixotropic paste
Flash Point, ASTM D93/DIN 51758	>60°C

TYPICAL CURING PERFORMANCE

Tack Free Time

The product surface becomes dry to touch on exposure to ambient moisture in 65 to 75 minutes at 20-25°C, 50% RH.

Cure speed vs Humidity

The following graph shows the rate of cure at different humidities at 22°C on mild steel, primed with 7253, with a bond gap of 3mm. Strength is determined according to ASTM D1002/DIN EN 1465



Cure speed vs bond gap

The following graph shows the rate of cure at different bond gaps at 22°C, 50% RH on mild steel, primed with 7253. Strength is determined according to ASTM D1002/DIN EN 1465.



Cure speed vs temperature

The following graph shows the rate of cure at different temperatures at 50% RH on mild steel, primed with 7253, with a bond gap of 3mm. Strength is determined according to ASTM D1002/DIN EN 1465.



Depth of Cure

on mild steel, N/mm²

on GBMS, N/mm²

N/mm

The following graph shows the increase in depth of cure with time when cured at 22°C, 50% RH. This is determined by peeling away the product from a 10mm wide channel in a PTFE block. The channel gradually increases in depth from 0 to 10mm. After peeling depth of residual product is measured.



(psi)

(psi)

Shear Strength, ASTM D1002/DIN EN 1465,

T-Peel Strength on mild steel ASTM D1876,

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0.5 to 1.0

(73 to 145)

0.7 to 1.5

(102 to 218)

6.5 to 13.0

THE TECHNICAL DATA CONTAINED HEREIN ARE INTENDED AS REFERENCE ONLY. PLEASE CONTACT LOCTITE CORPORATION QUALITY DEPARTMENT FOR ASSISTANCE AND RECOMMENDATIONS ON SPECIFICATIONS FOR THIS PRODUCT.

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A (Henkel) Company

0.75

(109)

1.2 (174)

10.0

(lb/in) (58) (38 to 76)

TYPICAL ENVIRONMENTAL RESISTANCE

Test Procedure :Shear strength ASTM D1002/DIN EN 1465Substrate:Mild steel lapshears (primed with 7253)Cure procedure:14 days at 22°C, 50% RH, 3mm gap

Hot Strength

Tested at temperature.



Heat Ageing





Chemical / Solvent Resistance

Test Procedure:Shear strength,ASTM D1002/DIN EN 1465Substrate:Mild steel lapshears (primed with 7253)Cure procedure:14 days at 22°C, 50% RH, 3mm gap

Solvent	Temp.	% Initial Strength retained at		
		100 hr	500 hr	1000 hr
Water	22°C	100	55	55
95% RH	40°C	100	100	100

Test Procedure : Tensile strength , ASTM D638 Cure procedure: 14 days at 22°C, 50% RH

Solvent	Temp.	% Initial Strength retained at		
	-	100 hr	500 hr	1000 hr
Water	22°C	105	95	110
95% RH	40°C	115	100	95
Motor Oil	80°C	130	120	150
MEK	22°C	135	110	10
6.5% H ₂ SO ₄	22°C	100	100	90
7.5% NaCl	22°C	95	95	95

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 oxidising materials. For safe handling information on this product, consult the Material Safety Data Sheet, (MSDS). Where aqueous washing systems are used to clean the surfaces before bonding, it is important to check for compatibility of the washing solution with the adhesive. In some cases these aqueous washes can affect the cure and performance of the adhesive.

Handling Precautions

This product contains isocyanates. Avoid contact with skin and eyes. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. After contact with skin, wash immediately with plenty of soap and water.

Directions for use

Product 5222 should be applied as a bead to one surface. Application should be to clean, dry surfaces at a temperature of between 10° C and 35° C. When joint is assembled pressure should be applied to spread the adhesive out and fill the joint completely. The bond should be allowed to cure fully, before subjecting to heavy loads or conditions. For best adhesion and durability Loctite Polyurethane Primers should be used, (see appropriate TDS for details on usage):

For plastics and wood use Primer 7251.

For metals use Primer 7253 or Cleaner/Primer 7211. For glass use Primer 7252.

Storage

Products shall be ideally stored in a cool, dry location in unopened containers at a temperature between 8°C to 28°C (46°F to 82°F) unless otherwise labelled. Optimal storage is at the lower half of this range. To prevent contamination of unused product, do not return any material to its original container. For further specific shelf life information contact your local Technical Service Centre.

Data Ranges

The data contained herein may be reported as a typical value and/or range (based on the mean value ± 2 standard deviations). Values are based on actual test data and are verified on a periodic basis.

Note

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, Loctite Corporation specifically disclaims all warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose, arising from sale or use of Loctite Corporation's products. Loctite 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 licence under any Loctite 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.