



Research, Development & Engineering

Tallaght Business Park,
Dublin, Ireland

PRELIMINARY

Technical Data Sheet Product 5381A/B

October 1997

PRODUCT DESCRIPTION

LOCTITE® Product 5381A/B is a two-part thixotropic silicone adhesive/sealant which will cure rapidly at room temperature to give a low modulus silicone elastomer, with good compression set and excellent resistance to engine oils.

TYPICAL APPLICATIONS

This product is mainly used for gasketing and bonding and is designed for automotive OEM, sub-component and general industrial applications where a pre-applied silicone gasket is required. This product is designed for flexible flange type applications. A similar product 5389A/B with a higher modulus is available for rigid flange type applications. 5381A/B may also be used for formed in place gasketing where a rapid cure is required.

PROPERTIES OF UNCURED MATERIAL

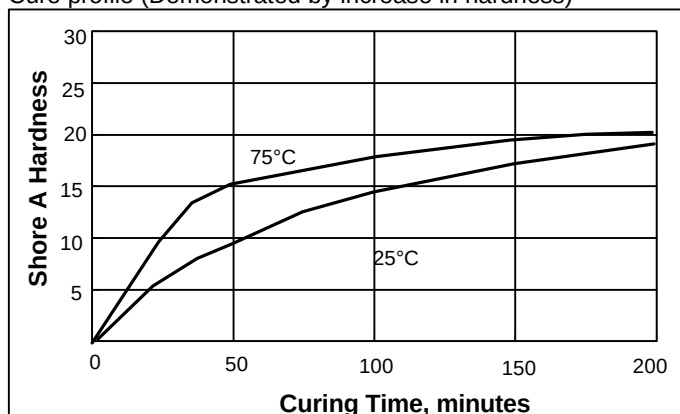
	Part A	Part B
Chemical Type	Acetoxy Silicone	Silicone
Appearance	White	Black
Specific Gravity @ 20°C	1.04	1.43
Viscosity @ 25°C	Thixotropic Paste	Thixotropic Paste
Extrusion Rate gm/min: (3mm nozzle, 6 bar, 25°C)	300	250
Mix Ratio by volume	9 parts	1 part
Flash Point (TCC), °C	>150	>150

TYPICAL CURING PERFORMANCE

The curing starts as soon as the two parts are mixed together. The skin over time is 3 to 5 minutes, and the pot life of the mixture is also 3 to 5 minutes. After 25 minutes the product is sufficiently cured to allow the part to be handled. The nature of this two part system allows for an infinite depth of cure of product. The cure speed may also be increased by increasing the temperature.

Loctite Product 5381A/B

Cure profile (Demonstrated by increase in hardness)



PROPERTIES OF CURED MATERIAL

Specific Gravity	1.07
Mechanical properties after 7 days at room temperature Measured on 2 mm thick film	
Hardness (Shore A)	25
ASTM D 2240, DIN53505	
Tensile Strength, MPa	2.3
ASTM D 412, DIN 53504	
Elongation at break, %	450
ASTM D 412, DIN 53504	

Compression Set.

This test is a measure of the cured product's ability to regain its dimensions after compression.

Compression Set, ASTM D 395 Method B, 25% original deflection, after 7 days cure time, %	3 days
Air @ 125 °C	35
Air @ 150 °C	50

Thermal Resistance

Upper temperature limit for use

Determined by measuring the shore A hardness before and after heat treatment, where the variation is less than 50%

Maximum continuous operating temperature/ 1000 hrs.	+210 °C
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Max. Peak Temperature, 72hrs.	+275 °C
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Resistance to oils

Tests carried out on 2 mm films cured 7 days at R.T and then immersed in the oil for 70 hrs at 150°C

Oil	Shore A Hardness	Tensile Stg. MPa	Elong. %	Vol Swell %
None (Control)	25	2.3	450	0
ASTM 2	22	2.2	600	7
15 W 40	16	1.6	580	16
ASTM 3	13	1.0	360	34

Dielectric Properties

Dielectric constant	3.3
ASTM D150, 1 MHz	
Dielectric Strength,	19
ASTM D 419, kV/mm	
Volume Resistivity	3×10^{15}
ASTM D 257, Ω .cm.	

NOT FOR PRODUCT SPECIFICATIONS.

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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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).

Directions for use

This product is available in industrial kits with packs of the A and B products matched for accurate mixing on specialised mixing equipment. In contrast to liquid flange sealants this elastomeric pre-applied gasket provides an effective seal by compression only. Therefore, it is necessary to follow recommended Loctite guidelines for bead size relative to the flange design to accommodate the compression set characteristics in specified operating environments.

When this product is used for bonding, the assembly of the bonding faces must be completed within the skin over time. This is to ensure good adhesion to both surfaces.

For dispensing and curing recommendations contact your local Technical Service Centre.

Storage

Product 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 temperature 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.

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.