Technical Data Sheet

LOCTITE® AA 5810B™

Known as LOCTITE® 5810B™
October 2018

PRODUCT DESCRIPTION

LOCTITE® AA 5810B™ provides the following product characteristics:

Technology	Formed-In-Place Gasketing
Chemical Type	Polyacrylate
Appearance (uncured)	Charcoal grey paste
Components	One component - requires no mixing
Cure	Moisture cure
Application	Sealing
Specific Benefit	• Superior hot oil resistance • Joint movement tolerant • Non sagging

LOCTITE® AA 5810B™ is a single component, non-silicone, oxime-free, polyacrylate based adhesive/sealant that cures with moisture at room temperature. It is designed with a heavy body viscosity for on line, low air pressure tests to be carried out before product begins to cure. The non-silicone based resin does not promote foaming in lubricants and exhibits excellent resistance to powertrain fluids. LOCTITE® AA 5810B™ is primarily designed for flange sealing with excellent oil resistance and is non-permeable to hydrocarbons. Typical applications include cast metal, stamped steel, and molded plastic covers for engines, transmissions and axles. This product also works well for sealing plastic and metal housings on electronic components.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Specific Gravity @ 20 °C	1.33
Extrusion Rate, g/min:	
Pressure 0.6 MPa, temperature 25 °C:	
Semco Cartridge	10 to 60[LMS]
Blow Out Resistance, seconds:	
6 mm Flange, 0.75 mm Gap @ 0.021 MPa	≥60

Flash Point - See SDS

TYPICAL CURING PERFORMANCE

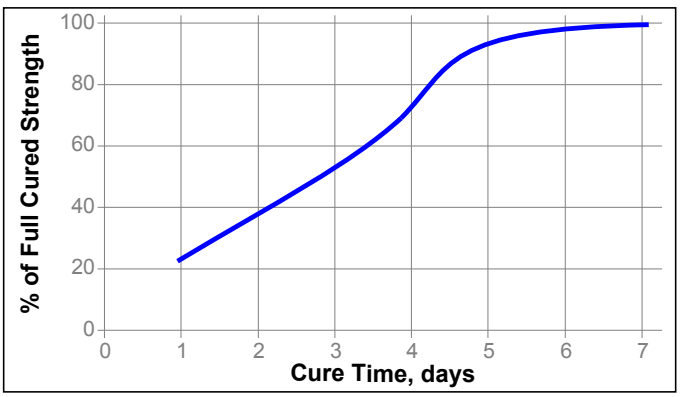
Skin Over Time

Skin over time is the time the surface of the adhesive forms a skin upon exposure to atmospheric moisture at 25 ± 2 °C, 50 ± 5% RH.

Skin Over Time, minutes	≤60[LMS]

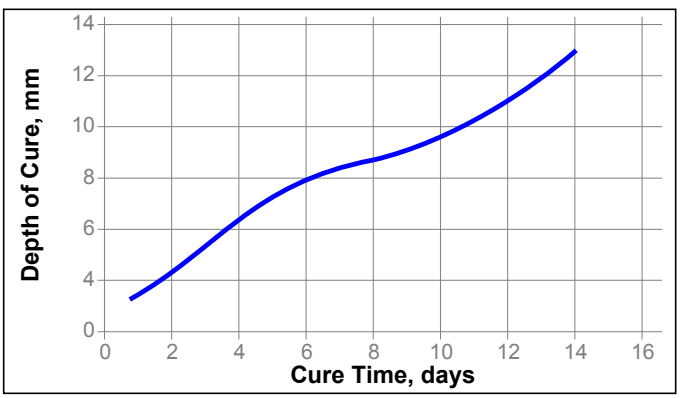
Cure Speed vs. Time

The graph below shows shear strength developed with time on Aluminum (Alclad) lapshears at a bond gap of 1.0 mm. Cure condition 25±2 °C / 50±5% RH. Strength is determined according to ISO 4587.



Depth of Cure

The depth of cure depends on temperature and humidity. Depth of cure was determined by filling a 15 mm deep cup and removing the cured film of material. The cured section of product is measured to determine depth of cure.



TYPICAL PROPERTIES OF CURED MATERIAL

Cured for 1 week @ 25 °C / 50±5 % RH

Physical Properties:

Glass Transition Temperature, °C		-41
Shore Hardness, ISO 868		25 to 35
Elongation, at break, ISO 37, %		≥150[LMS]
Tensile Strength, ISO 37	N/mm²	≥1.0[LMS]
	(psi)	(≥145)

Electrical Properties:

Dielectric Constant , IEC 60250:

1 KHz	6.1
10 KHz	5.5
100 KHz	5.4
1 MHz	4.9

TYPICAL PERFORMANCE OF CURED MATERIAL

Adhesive Properties

After 7days @ 25±2 °C / 50±5 % RH and 1.0 mm gap

Lap Shear Strength, ISO 4587:

Aluminum (Alclad)	N/mm²	≥1.0[LMS]
	(psi)	(≥145)
Aluminum (Alclad) to Mild steel	N/mm²	≥1.1
	(psi)	(160)

TYPICAL ENVIRONMENTAL RESISTANCE

Environmental Aging - Effect on bulk properties

Cured for 7 days @ 25±2 °C / 50±5% RH and 2 mm thick film

Tensile strength, ISO 37, N/mm² (Elongation, at break, %):

Environment	168h	504h	1008h
Control, 22 °C	≥1(≥150)	---------	---------
ATF, 150 °C	2.7(78)	2.9(65)	3.5(59)
SF105 engine oil, 150 °C	2.5(89)	2.7(86)	2.8(79)
Synthetic gear oil, 150 °C	3.1(92)	3.3(77)	3.8(65)
Air at 150 °C	2.3(103)	3.2(82)	4.1(76)

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:

1. For best performance bond surfaces should be clean and free from grease.
2. Assemble parts within 30 minutes. When joint is assembled, pressure should be applied to spread the adhesive out and fill the joint completely.
3. The bond should be allowed to cure (e.g. seven days), before subjecting to heavy service loads.
4. Excess material can be easily wiped away with non-polar solvents, e.g. mineral spirits or naptha based cleaners.
5. For full automatic applications a volumetric dispensing system is recommended.

Loctite Material Specification[LMS]

LMS dated February 14, 2013. 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 Quality.

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/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:
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