

PRODUCT DESCRIPTION

Loctite Hysol 9466 is a toughened, medium-viscosity, industrial grade epoxy adhesive with extended work life. Once mixed, the two-component epoxy cures at room temperature to form a tough, off-white, bondline which provides high peel resistance and high shear strengths. The fully cured epoxy is resistant to a wide range of chemicals and solvents, and acts as an excellent electrical insulator.

TYPICAL APPLICATIONS

The high performance epoxy provides excellent bond strengths to a wide variety of plastics and metals. Ideal for general purpose industrial applications requiring extended work life for adjusting parts during assembly.

PROPERTIES OF UNCURED MATERIAL

Resin	Typical Value
Chemical Type	Epoxy
Appearance	White opaque paste
Specific Gravity @25°C	1.00
Brookfield RVT viscosity @25°C	
Spindle 6 @20rpm, mPas	15,000 to 50,000
Flash Point (TCC), °C (°F)	>93 (>200)

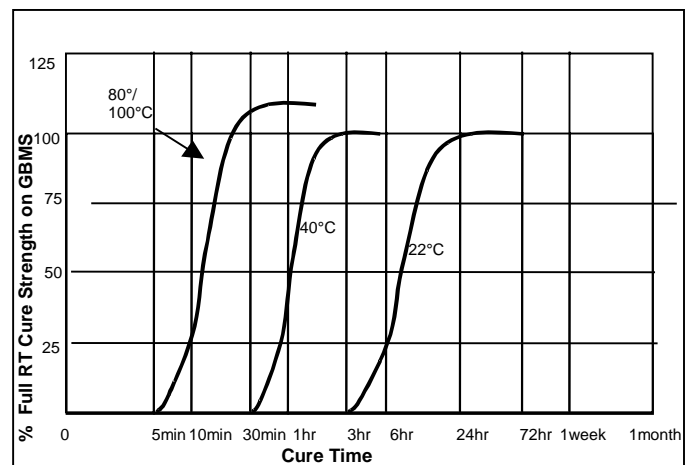
Hardener	Typical Value
Chemical Type	Amine
Appearance	White translucent liquid
Specific Gravity @25°C	1.00
Brookfield RVT viscosity @25°C	
Spindle 5 @50rpm, mPas	25,000 to 60,000
Flash Point (TCC), °C (°F)	>93 (>200)

Mixed Adhesive	Typical Value
Appearance	Off-white opaque paste
Mix Ratio by Volume (Resin/Hardener)	2:1
Mix Ratio by Weight (Resin/Hardener)	100:50
Maximum gap fill (mm)	3
Working Life of mixed adhesive @22°C (100g mix), minutes	60
Fixture Time (light handling, 0.1N/mm²) @22°C, minutes	180

TYPICAL CURING PERFORMANCE

Cure Speed vs. time/temperature

Hysol 9466 develops high strength at room temperature after 24 hours. The assembled parts will be fixtured for light handling (0.1N/mm²) after 120 minutes @22°C in a 0.05mm gap. Elevated temperatures may be used to accelerate the cure. The following graph indicates development of shear strength on grit-blasted steel lapshears with 0.05mm gap as a function of time and temperature, tested according to ASTM D1002/EN 1465.



TYPICAL PROPERTIES OF CURED MATERIAL

(1.2mm thick samples cured for 7 days @22°C)

Physical Properties	Typical Value
Dielectric Strength, ASTM D149, kV/mm	30
Tensile Strength, ASTM D882, N/mm²	32
Elongation, ASTM D882, %	3
Modulus, ASTM D882, N/mm²	1718
Glass transition Temperature, Tg, °C	
ASTM E1640-99	62
Hardness, ASTM D1706, Shore D	60

PERFORMANCE OF CURED MATERIAL

(cured for 5 days @22°C, unless otherwise stated)

Shear Strength, ASTM D1002/ EN 1465 (0.05mm gap unless otherwise stated)	Typical Value (N/mm²)
Steel, Grit Blasted Mild Steel (GBMS),	37
Aluminium, Abraded (Silicon Carbide Paper, A166 grit, P400A grade)	26
Aluminium, Anodised	17.9
Hot Dipped Galvanised Steel	8.5
Stainless Steel	23
Polycarbonate	5.3
Nylon	1.6

NOT FOR PRODUCT SPECIFICATIONS.

THE TECHNICAL DATA CONTAINED HEREIN ARE INTENDED AS REFERENCE ONLY.

PLEASE CONTACT HENKEL LOCTITE CORPORATION QUALITY DEPARTMENT FOR ASSISTANCE AND RECOMMENDATIONS ON SPECIFICATIONS FOR THIS PRODUCT.
ROCKY HILL, CT FAX: +1 (860)-571-5473 DUBLIN, IRELAND FAX: +353-(1)-451 - 9959

Wood (Fir)	11.3
GRP (Polyester Resin Matrix)	5
ABS	4.7

Tensile Strength, ASTM D2095/EN 26922 Steel, GBMS pin to soda glass, N/mm ²	43.2
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180° Rigid Peel Strength, ASTM D1876 Steel, GBMS, N/mm	8
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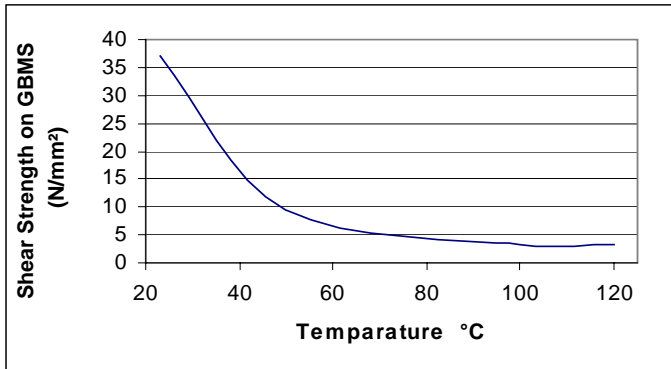
IZOD Impact Resistance, ISO 9653/ASTM D950-98, Steel, GBMS, J/m ²	5.8
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TYPICAL ENVIRONMENTAL RESISTANCE

Test procedure :	ASTM D1002/EN 1465
Substrate:	Grit Blasted Mild Steel (GBMS)
Bond line gap:	0.05mm
Cure procedure:	5 days @ 22°C

Hot Strength

Tested at temperature.



Temperature Storage

Stored in air at temperature indicated and tested @ 22°C.

Temperature	% Initial Strength retained after	
	500 hr	1000 hr
22°C	100	100
150°C	108	100
180°C	95	86

Chemical/Solvent Resistance

Immersed in conditions indicated and tested @ 22°C.

Solvent	Temp.	% Initial Strength after	
		500 hr	1000 hr
Motor Oil (10W-30)	87°C	138	146
Unleaded Petrol	22°C	99	125
Water/Glycol (50%/50%)	87°C	76	76
Salt/Fog ASTM B-117	22°C	-	81
98% Relative Humidity	40°C	86	92
Condensing Humidity	49°C	-	94
Water	22°C	-	94
Acetone	22°C	77	93
Isopropyl Alcohol	22°C	91	104

Tensile Strength, ASTM D2095/EN 26922, GBMS pin to soda glass			
98% Relative Humidity	40°C	91	94

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.

Directions for use

1. For best performance surfaces for bonding should be clean, dry and free of grease. For high strength structural bonds, special surface treatments can increase the bond strength and durability .
2. To use, resin and hardener must be blended. Product can be applied directly from dual cartridges by dispensing through the mixer head supplied. Discard the first 3-5cm of bead dispensed. Using bulk containers, mix thoroughly by weight or volume in the proportions specified in Properties of Uncured Material section. For hand mixing, weigh or measure out the desired amount of resin and hardener and mix thoroughly. Mix approximately 15 seconds after uniform colour is obtained.
3. Do not mix quantities greater than 4 kg as excessive heat build-up can occur. Mixing smaller quantities will minimise the heat build-up.
4. Apply the adhesive as quickly as possible after mixing to one surface to be joined. For maximum bond strength apply adhesive evenly to both surfaces. Parts should be assembled immediately after mixed adhesive has been applied.
5. Working life of the mixed adhesive is 60 minutes at 22°C. Higher temperature and larger quantities will shorten this working time.
6. Keep the assembled parts from moving during cure. The joint should be allowed to develop full strength before subjecting to any service loads.
7. Excess uncured adhesive can be wiped away with organic solvent (e.g. Acetone).
8. After use and before adhesive hardens mixing and dispensing equipment should be cleaned with hot soapy water.

Storage

Product shall be ideally stored in a cool, dry location in unopened containers at a temperature between 8°C to 21°C (46°F to 70°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.

Data Ranges

The data contained herein may be reported as a typical value and/or range. 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 license 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.

**Bulk Numbers: Part A: 210010
Part B: 210011**