Technical Data Sheet

ABLESTIK 45 W 1

June 2021

PRODUCT DESCRIPTION

LOCTITE ABLESTIK 45 W 1 provides the following product characteristics:

Technology	Epoxy
Appearance,Resin (Component A)	Black
Appearance, Hardener (Component B)	Black
Components	Two components - requires mixing
Cure	Room Temperature or Heat Cure
Product Benefits	• General purpose • Easy mix ratio • Extremely flexible • Variable flexibility • Room temperature cure • Fast cure • Excellent shock and peel resistance
Mix Ratio, by weight - Resin : Hardener **Rigid Formula**	100 : 50
Mix Ratio, by weight - Resin : Hardener **Semi-rigid Formula**	100 : 100
Mix Ratio, by weight - Resin : Hardener **Flexible Formula**	100 : 150
Application	Assembly
Operating Temperature - **Rigid**	-40 to 90°C
Operating Temperature - **Semi-rigid**	-55 to 80°C
Operating Temperature - **Flexible**	-55 to 65°C
Surfaces	Metals, Glass, Ceramics and Plastics

LOCTITE ABLESTIK 45 W 1 is designed as a general purpose, adhesive and is particularly useful when bonding dissimilar substrates such as metal to plastic. It is designed for use where shock and peel resistance are desired

LOCTITE ABLESTIK 45 W 1 can be used with a variety of catalysts. For more information on mixed properties when used with other available catalysts, please contact HITEK Electronic Materials for assistance and recommendations.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Part A Properties *ABLESTIK 45 W 1*

Viscosity @ 25 °C, mPa·s (cP)	225,000
Specific Gravity	1.58
Shelf Life @ 18 to 25°C, days	365
Flash Point - See SDS	

Part B Properties *LOCTITE CAT 15*

Viscosity @ 25 °C, mPa·s (cP)	25,000
Specific Gravity	0.97
Flash Point - See SDS	

Mixed Properties

Rigid Formulation:

Mixed Viscosity @ 25°C, mPa·s (cP)	37,000
Specific Gravity	1.34
Working Time, 100g mass @ 25ºC, minutes	120
Shelf Life @ 25°C, months	6
Flash Point - See SDS	

Semi-Rigid Formulation:

Mixed Viscosity @ 25°C, mPa·s (cP)	37,000
Specific Gravity	1.24
Working Time, 100g mass @ 25ºC, minutes	140
Shelf Life @ 25°C, months	6
Flash Point - See SDS	

Flexible Formulation:

Mixed Viscosity @ 25°C, mPa·s (cP)	36,000
Specific Gravity	1.18
Working Time, 100g mass @ 25ºC, minutes	160
Shelf Life @ 25°C, months	6
Flash Point - See SDS	

TYPICAL CURING PERFORMANCE AS MIXED

Cure Schedule

8 to 12 hours @ 25°C
4 to 6 hours @ 45°C
2 to 4 hours @ 65°C
15 to 30 minutes @ 105°C

The above cure profiles are guideline recommendations. Cure conditions (time and temperature) may vary based on customers' experience and specific application requirements, as well as customer curing equipment, oven loading and actual oven temperatures.

TYPICAL PROPERTIES OF CURED MATERIAL AS MIXED

Rigid Formulation

Physical Properties

Coefficient of Thermal Expansion, ASTM D 3386:	
Below Tg, ppm/°C	58
Above Tg, ppm/°C	158
Glass Transition Temperature, ISO 11357-2, °C	48
Thermal Conductivity , W/(m-K)	0.35
Shore Hardness, ISO 868, Durometer D	80
Water Absorption, ASTM D 570 , %:	
24 hours	0.2

Electrical Properties

Dielectric Breakdown Strength IEC 60243-1, 14 kV/mm	
Dielectric Constant / Dissipation Factor, IEC 60250:	
60Hz	4.4 / 0.04
1 kHz	4.1 / 0.04
1 MHz	3.4 / 0.03
Volume Resistivity, IEC 60093, Ω·cm	$>1\times10^{13}$

Semi-rigid Formulation

Physical Properties

Coefficient of Thermal Expansion, ASTM D 3386:		
Below Tg, ppm/°C		73
Above Tg, ppm/°C		173
Glass Transition Temperature, ISO 11357-2, °C		23
Thermal Conductivity , W/(m-K)		0.35
Shore Hardness, ISO 868, Durometer D		60 to 70
Water Absorption, ASTM D 570 , %:		
24 hours		0.5
Tensile Strength, ISO 527-2	N/mm² (psi)	30 (4,350)
Tensile Modulus , ISO 527-2	N/mm² (psi)	500 (72,500)
Flexural strength , ASTM D790	N/mm² (psi)	34 (4,930)
Impact Strength, ASTM-D-256, J/cm		22

Electrical Properties

Dielectric Breakdown Strength IEC 60243-1, 14 kV/mm	
Dielectric Constant / Dissipation Factor, IEC 60250:	
1 MHz	3.3 / 0.08
Volume Resistivity, IEC 60093,	$>1\times10^{13}$

Flexible Formulation

Physical Properties

Coefficient of Thermal Expansion, ASTM D 3386:	
Below Tg, ppm/°C	87
Above Tg, ppm/°C	209
Glass Transition Temperature, ISO 11357-2, °C	11
Thermal Conductivity , W/(m-K)	0.35
Shore Hardness, ISO 868, Durometer A	60

Electrical Properties

Dielectric Breakdown Strength IEC 60243-1, 14 kV/mm	
Volume Resistivity, IEC 60093, Ω·cm	$>1\times10^{10}$

TYPICAL PERFORMANCE OF CURED MATERIAL AS MIXED

Rigid Formulation

Lap Shear Strength , ISO 4587:

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Tested @ 25 °C	N/mm² (psi)	17 (2,500)
Tested @ 65 °C	N/mm² (psi)	10 (1,400)

Semi-Rigid Formulation

Lap Shear Strength , ISO 4587:

Aluminium:

Tested @ 25 °C	N/mm² (psi)	13 (1,900)

Flexible Formulation

Lap Shear Strength , ISO 4587:

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Tested @ 25 °C	N/mm² (psi)	4 (600)

DIRECTIONS FOR USE

1. Complete cleaning of the substrates should be performed to remove contamination such as oxide layers, dust, moisture, salt and oils which can cause poor adhesion or corrosion in a bonded part.
2. Mix LOCTITE ABLESTIK 45 W1 in the can in which it is received.
3. Accurately weigh resin and hardener into a clean container in the one of the recommended ratios. Weighing apparatus having an accuracy in proportion to the amounts being weighed should be used.
4. Mix thoroughly.
5. Application is by brush, knife or roller. Apply and squeeze out excess.
6. To prevent adhesion, use MOLD RELEASE 122 S.
7. Clean up solvent is alcohol, acetone, or methyl ethyl ketone (MEK).
8. NOTE: During storage at room temperature for long periods, it is possible that the viscosity of can increase and may exceed its upper specification limit. The viscosity can be brought back to the normal level by moderate mixing.

GENERAL INFORMATION

For safe handling information on this product, consult the Safety Data Sheet, (SDS).

Storage

Store product in the unopened container in a dry location. Storage information may be indicated on the product container labeling.

Optimal Storage : 18 to 25 °C

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 Henkel Representative.

Not for product specifications

The technical data contained herein are intended as reference only. Please contact your local Henkel representative for assistance and recommendations on the specifications of this product.

Conversions

(°C x 1.8) + 32 = °F
kV/mm x 25.4 = V/mil
mm / 25.4 = inches
N x 0.225 = lb/F
N/mm x 5.71 = lb/in
psi x 145 = N/mm²
MPa = N/mm²
N·m x 8.851 = lb·in
N·m x 0.738 = lb·ft
N·mm x 0.142 = oz·in
mPa·s = cP

Disclaimer

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Reference 0.5