Technical Data Sheet

LOCTITE® TLB 9300 APSi

April 2023

PRODUCT DESCRIPTION

LOCTITE® TLB 9300 APSi provides the following product characteristics:

Technology	Polyurethane
Product Type	2k polyurethane
Appearance (uncured)	Smooth , Blue
Appearance,Resin (Part A)	Blue paste
Appearance, Hardener (Part B)	White paste
Mix Ratio by volume Comp A: Comp. B	1: 1
Cure	Room Temperature or Heat Cure
Application	Thermal conductive bonding
Specific Benefits	1. High coefficient of thermal conductivity 2. Solvent free 3. Longer open time and fast hardness build up 4. Good bonding strength for Aluminum and PET film

LOCTITE® TLB 9300 APSi is two-component polyurethane, high thermal conductivity adhesive with moderate viscosity, good electric insulation property and high bonding performance.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Component A

Viscosity, Rheometer 2.4 s^{-1}, Pa.s :	
Plate PP25 @ 25°C	205
Density @ 25°C, g/cc	2.4

Component B

Viscosity, Rheometer 2.4 s^{-1}, Pa.s :	
Plate PP25 @ 25°C	150
Density @ 25°C, g/cc	2.9

TYPICAL PROPERTIES OF CURED MATERIAL

Physical Properties after 25°C/50%RH cure for 24h:

Density, g/cc	2.65
Thermal Conductivity, W/(m·K)	3.2
Hardness, Shore A:	
@ 23 ºC, 24hours	93
@ 23 ºC, 60min	78
@ 23 ºC, 80min	88
Working time (2x Viscosity 2.4 s^{-1}) @ 25°C min	32
Shrinkage, %	0.6
NVC (Non Volatile content), %	99.95
Flammability, 2mm, UL 94V-0	Pass

TYPICAL PERFORMANCE OF CURED MATERIAL

Cured for 24 hours @ 25°C / 50% RH

Dielectric Strength, ohm·cm	2×10^{12}
Breakdown Voltage, KV/mm	18
Lap Shear Strength 3003Al-3003Al (2 mm spacer), MPa	2.6
Peel Shear Strength (180° peel strength) Al 6063+PET film, gf/10 mm	540

*Test speed for lap shear strength: 12.7 mm/min
*Test speed for peel shear strength: 300 mm/min

GENERAL INFORMATION

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

Directions For Use:

1. For high strength structural bonds, remove surface contaminants such as paint, oxide films, oils, dust, mold release agents and all other surface contaminants.

2. Use gloves to minimize skin contact. DO NOT use solvents for cleaning hands.

3. **Dual Cartridges:** Insert the cartridge into the application gun and start the plunger into the cylinders using light pressure on the trigger. Next, remove the cartridge cap and expel a small amount of adhesive to be sure both sides are flowing evenly and freely. Attach the static mixing nozzle to the end of the cartridge and begin dispensing the adhesive. Purge and dispose of the first 3 - 5 cm from the end of the mix nozzle, as it may not be sufficiently mixed.
Bulk Containers: Utilize volumetric dispense system to ensure proper mix ratio and utilize mix nozzle to obtain adequate mixing.

Storage

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

Optimal storage 5 to 25 °C for a 4 months shelf life, in sealed container with moisture barrier packaging. Optimal shipping: 5 to 30 °C.

Material removed from drums may be contaminated during use. Do not return product to the original drum. Henkel 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.

Note:

This product is a developmental product. It is not now, and may not be in the future, commercially available. The properties of the uncured material and the physical properties of the cured material have been established as a point of reference only. Henkel recommends that each prospective user test his proposed application before repetitive use, using this data as a guide. 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 Henkel Corporation patents that may cover such processes or compositions. This product may contain materials that are not regulatory listed on TSCA, EINECs and other global inventories.

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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/F
N/mm x 5.71 = lb/in
N/mm² x 145 = psi
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

ADDITIONAL INFORMATION

Disclaimer

The information provided in this Technical Data Sheet (TDS) including the recommendations for use and application of the product are based on our knowledge and experience of the product as at the date of this TDS. The product can have a variety of different applications as well as differing application and working conditions in your environment that are beyond our control. Henkel is, therefore, not liable for the suitability of our product for the production processes and conditions in respect of which you use them, as well as the intended applications and results. We strongly recommend that you carry out your own prior trials to confirm such suitability of our product. Any liability in respect of the information in the Technical Data Sheet or any other written or oral recommendation(s) regarding the concerned product is excluded, except if otherwise explicitly agreed and except in relation to death or personal injury caused by our negligence and any liability under any applicable mandatory product liability law.

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