

3M Science. Applied to Life.™

Technical Data Sh

3M™ VHB™ Tape - Specialty

Product Description

3M™ VHB™ Tape 4646 is a 0.025 inch (0.6 mm) thick dark gray double coated acrylic fo
bonds to a broad range of high surface energy substrates including metals, glass and easi
high temperature resistance. 3M™ VHB™ Tape 4646 is part of the 4611 tape family. Each

Product Features

- Fast and easy-to-use permanent bonding method provides high strength and long-term
- Virtually invisible fastening keeps surfaces smooth
- Can replace mechanical fasteners (rivets, welds, screws) or liquid adhesives
- Dark gray, 0.025 in (0.6 mm), general purpose adhesive with firm foam has added featu
- Eliminate drilling, grinding, refinishing, screwing, welding and associated clean-up
- Creates a permanent seal against water, moisture and more
- Pressure sensitive adhesive bonds on contact to provide immediate handling strength
- Allows the use of thinner, lighter weight and dissimilar materials

Total Tape Thickness (mil)	25 mil
Test Method: ASTM D3652	
Total Tape Thickness (mm)	0.6 mm
Test Method: ASTM D3652	
Total Tape Thickness	0.025 in
Test Method: ASTM D3652	
Thickness Tolerance	±15 %
Density	840 kg/m³
Test Method: ASTM D3574 Notes: Foam with adhesive	
Density	52 lb/ft³

Dwell/Cure Time: 72.0
Dwell Time Units: hr
Temp C: 23C
Temp F: 73F
Substrate: Aluminum

Notes: 1 in.² (6.45 cm²), Jaw Speed 2 in./min. (50 mm/min.)

Normal Tensile	100 lb/in²

Test Method: ASTM D897

Dwell/Cure Time: 72.0
Dwell Time Units: hr
Temp C: 23C
Temp F: 73F
Substrate: Aluminum

Notes: 1 in.² (6.45 cm²), Jaw Speed 2 in./min. (50 mm/min.)

Overlap Shear Strength	550 kPa

Test Method: ASTM D1002

Notes: 1 in² (6.45 cm²), Jaw Speed 0.5 in/min (12.7 mm/min)

Overlap Shear Strength	80 lb/in²

Test Method: ASTM D1002

Notes: 1 in² (6.45 cm²), Jaw Speed 0.5 in/min (12.7 mm/min)

Test Method: ASTM D3654

Temp C: 66C
Temp F: 150F
Substrate: Stainless Steel

Notes: Tested at various temperatures and gram loadings. 0.5 in² (3.23 cm²). Will hold

Static Shear	750 g

Test Method: ASTM D3654

Temp C: 93C
Temp F: 200F
Substrate: Stainless Steel

Notes: Tested at various temperatures and gram loadings. 0.5 in² (3.23 cm²). Will hold

Static Shear 121C Stainless Steel	750 g

Test Method: ASTM D3654

Temp C: 121C
Temp F: 250F
Substrate: Stainless Steel

Notes: Tested at various temperatures and gram loadings. 0.5 in² (3.23 cm²). Will hold

Static Shear 177C Stainless Steel	750 g

Test Method: ASTM D3654

Normal Slitting Tolerance	±0.79 mm
Normal Slitting Tolerance	±1/32 in
Core Size (ID)	76.2 mm
Core Size (ID)	3 in
Available Sizes	

UL 746C Listings

Solvent and Fuel Resistance

Additional Performance Characteristics

Property	Values

Dissipation Factor 1MHz	See 3M™ VHB™ Tape 4611
Test Method: ASTM D150 Temp C: 23C Temp F: 72F	
Dielectric Strength	See 3M™ VHB™ Tape 4611 V/
Test Method: ASTM D140	
Thermal Conductivity	See 3M™ VHB™ Tape 4611 W
Volume Resistivity	See 3M™ VHB™ Tape 4611 Ω-
Test Method: ASTM D257 Temp C: 23C Temp F: 73F	
Surface Resistivity	See 3M™ VHB™ Tape 4611 Ω
Test Method: ASTM D257	

UL 879 (File E65361)

Bottom Matter

3M
Industrial Adhesives and Tapes Division
3M Center, Building 225-3S-06
St. Paul, MN 55144-1000
800-362-3550

Trademarks

3M and VHB are trademarks of 3M Company

Automotive Disclaimer

Automotive Applications: This product is an industrial product and has not been designed automotive electric powertrain battery or high voltage applications. This product does no IATF 16949 or VDA 6.3. This product may not be manufactured in an IATF certified facilit an automotive production part approval process (PPAP). Customer is solely responsible f customer's automotive application and for conducting incoming inspections before use o No written or verbal statement, report, data or recommendation by 3M related to automo signed by the Technical Director of 3M's Automotive Division. Customer assumes all resp powertrain battery or high voltage application, and 3M will not be liable for any loss or da whether direct, indirect, special, incidental, or consequential (including, but not limited to equitable theory asserted, including, but not limited to, warranty, contract, negligence, or purchase price paid for the product.
NOTWITHSTANDING ANY OTHER STATEMENT TO THE CONTRARY, 3M MAKES NO OR IMPLIED, REGARDING THE PRODUCT IF USED IN AN AUTOMOTIVE ELECTRIC PO

Time: After application, the bond strength will increase as the adhesive flows onto the su
ultimate bond strength will be achieved after 20 minutes, 90% after 24 hours and 100% a
temperatures. Ultimate bond strength can be achieved more quickly (and in some cases b
(e.g. 150°F [66°C] for 1 hour). This can provide better adhesive wetout onto the substrate
the effect of increasing bond strength and achieving ultimate bond strength more quickly

References

Property	Values
3m.com Product Page	https://www.3m.com/3M/en_US/p/d/b4(
Safety Data Sheet SDS	https://www.3m.com/3M/en_US/compan gsaAction=msdsSRA&msdsLocale=en_US&

ISO Statement

This Industrial Adhesives and Tapes Division product was manufactured under a 3M qual

Information

Technical Information: The technical information, guidance, and other statements conta
or experience that 3M believes to be reliable, but the accuracy, completeness, and repre
intended for people with knowledge and technical skills sufficient to assess and apply the
party intellectual property rights is granted or implied with this information.

Product Selection and Use: Many factors beyond 3M's control and uniquely within user'

Unikeyic Electronics

Global Electronic Components Distributor

Click to view pricing, inventory, delivery, and lifecycle information:

3M:

3448-89134 SWD-R HF539/20 P50-120P-R1-EA SF502SGAF-BLK 3759/14SF 10320-52A0-008 37216-62M3-004PL 94717 5413-2"X36YD FDI14-250Q SL8801/12-10DA5-00 3759-10 3302-64 3357-9237 81026-660203-RB 3414-H600 7100205939 71F-250-32-NL P50L-080P-AS-DA 3490-4 35715-L010-A00 AK 3659/37 8125/10 929975-01-13-RK 12226-8250-00PL 4636-7001 471, ORANGE, 33M X 50MM 8526-4500PL P50E-100P1-SR1-EA