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3M™ VHB™ Tape 5981

Product Description

3M™ VHB™ Tapes 5981-020, 5981-025, 5981-030, 5981-035, 5981-040 are an integrated bonding solution for electronic device manufacturers who value robust impact-resistant bonding performance but desire improved ease of use over typical foam bonding tape constructions and liquid adhesives. The 5981 series 3M™ VHB™ Tapes feature a thin film carrier in combination with two layers of a high-performance modified acrylic foam adhesive. This layered construction enables improved handling and proven capability to convert into narrow bond lines while preserving adhesion, impact resistance, anti-lifting, push-out, waterproofing and improved reworkability performance.

Product Features

- Narrow bond line converting capability to 0.5 mm
- Good reworkability/removal characteristics
- High bond strength
- Thin foam pressure sensitive adhesive (PSA) on both sides of a thin carrier film
- Good impact resistance and conformability

3M™ VHB™ Tape 5981

Technical Information Note

The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

Typical Physical Properties

Property	Values	
Color	Black	
Thickness Tolerance	±15 %	
Adhesive Type	Modified Acrylic	
Density	965 kg/m³	60.2 lb/ft³
Liner	Clear polyester on both sides	
Liner Thickness	0.05 mm	0.002 in
Liner Color	Clear	

Tape Thickness

5981-020: (0.008 in) 0.200 mm
5981-025: (0.010 in) 0.250 mm
5981-030: (0.012 in) 0.300 mm
5981-035: (0.014 in) 0.350 mm
5981-040: (0.016) in) 0.400 mm

Note

The following technical information and data should be considered representative or typical only and should not be used for specification purposes. Final product specifications and testing methods will be outlined in the product's Certificate of Analysis (COA) that is shipped with the product.

3M™ VHB™ Tape 5981

Available Sizes

Property	Values	
Standard Length	66 m	72.2 yd
Standard Width	560 mm	22 in
Normal Slitting Tolerance	±0.8 mm	±1/32 in
Core Size (ID)	76.2 mm	3 in

Handling/Application Information

Application Ideas

- Lens and back cover bonding
- LCM attachment
- Touch panel bonding
- Bezel bonding

Application Techniques

For maximum bond strength the substrate surfaces should be thoroughly cleaned with a 50:50 mixture of isopropyl alcohol and water. Consult manufacturer's directions for use and precautions when using cleaning solvents and adhesion promoters. Ideal tape application is accomplished when temperature is between 21° and 38°C (70° and 100°F) and the bond is allowed to dwell 72 hours. Initial tape application to surfaces at temperatures below 10°C (50°F) is not recommended.

Typical Performance Characteristics

3M™ VHB™ Tape 5981-0XX Property	Value
180° Peel Adhesion for Stainless Steel (Modified ASTM D3330 – 304.8 mm/min (12 in/min) after 72 Hour Dwell)	5981-020: 140 N/100 mm (7.9 lb/in) 5981-025: 145 N/100 mm (8.3 lb/in) 5981-030: 155 N/100 mm (8.8 lb/in) 5981-035: 180 N/100 mm (10.3 lb/in) 5981-040: 165 N/100 mm (9.4 lb/in)*
180° Peel Adhesion for Polycarbonate (Modified ASTM D3330 – 304.8 mm/min (12 in/min) after 72 Hour Dwell)	5981-020: 155 N/100 mm (8.8 lb/in) 5981-025: 160 N/100 mm (9.1 lb/in) 5981-030: 185 N/100 mm (10.5 lb/in) 5981-035: 175 N/100 mm (9.9 lb/in)* 5981-040: 180 N/100 mm (10.3 lb/in)*
180° Peel Adhesion for PMMA (Modified ASTM D3330 – 304.8 mm/min (12 in/min) after 72 Hour Dwell)	5981-020: 130 N/100 mm (7.4 lb/in) 5981-025: 130 N/100 mm (7.4 lb/in) 5981-030: 160 N/100 mm (9.1 lb/in) 5981-035: 125 N/100 mm (7.1 lb/in)* 5981-040: 145 N/100 mm (8.3 lb/in)*
180° Peel Adhesion for Glass (Modified ASTM D3330 – 304.8 mm/min (12 in/min) after 72 Hour Dwell)	5981-020: 145 N/100 mm (8.3 lb/in) 5981-025: 150 N/100 mm (8.6 lb/in) 5981-030: 160 N/100 mm (9.1 lb/in) 5981-035: 170 N/100 mm (9.7 lb/in) 5981-040: 165 N/100 mm (9.4 lb/in)*
Anti-Lift – Flat Substrates w/Forced Curvature Anodized Aluminum to Polycarbonate	5981-0XX Family: 0 mm lift after 24 hours at 70°C
Static Shear for Aluminum Foil to Stainless Steel (Modified ASTM D3654)	5981-0XX Family at 22°C: 500 g/0.5 sq in (holds 10,000 min.) 5981-0XX Family at 70°C: 250 g/0.5 sq in (holds 10,000 min.)
IPX8 Waterproof Characteristics 1 mm Wide Tape Bonding Polycarbonate to Stainless Steel (30 min. duration at 30 m H_20 depth simulation (42.7 psi)	5981-0XX Family: All Pass – no leakage
Available Sizes	Standard Length-Width: 66 meters (72.2 yards) x 560 mm (22 in) Slitting Tolerance: +/- 0.8 mm (1/32 in) Core size (ID): 76.2 mm (3.0 in)

- Peel failure mode was inconsistent due to thickness of tape during 180° peel adhesion test

Storage and Shelf Life

The shelf life of 3M™ VHB™ Tape 5981 is 24 months from the date of manufacture when stored in the original packaging materials at 4°C to 38°C (40°F to 100°F) and 0-95% relative humidity. The optimum storage conditions are 22°C (72°F) and 50% relative humidity.

Trademarks

3M and VHB are trademarks of 3M Company.

References

Safety Data Sheet (SDS)

Consult Safety Data Sheet before use. Visit 3m.com/regs

ISO Statement

This Industrial Adhesives and Tapes Division product was manufactured under a 3M quality system registered to ISO 9001 standards.

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Information

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