VHB™

4905F Acrylic Foam Tape

Product Data Sheet

Updated : March 1996
Supersedes : January 1995

Product Description

Special Feature Product 4905

4905 is a clear acrylic VHB tape. It is colourless making it ideal for bonding transparent materials or for applications where a coloured bond line is unacceptable.

These tapes have somewhat lower peel, tensile and shear performance than most other VHB due to their inherent softness.

Physical Properties
Not for specification purposes

Adhesive Type	Acrylic	
Thickness (ASTM D-3652) Tape Liner Total	 0.50 mm 0.13 mm 0.63 mm	
Density	960 kg/m³	
Release Liner	Filmic (Red)	
Tape Colour	Clear	This tape product is clear in colour but NOT guaranteed to be optically clear.
Shelf Life	24 months from date of despatch by 3M when stored in the original carton at 21°C (70°F) & 50 % Relative Humidity	

Performance Characteristics
Not for specification purposes

Peel Adhesion to Stainless Steel 90° peel @ room temp, 72 hr dwell, jaw speed 300mm/min	21 N/10mm	
Normal Tensile (T-Block) to Aluminium at room temp, 6.45 sq cm, jaw speed 50 mm/min	69 N/cm²	
Static Shear Strength **½ sq inch overlap on Stainless Steel 1000 minutes**	1000g at 22°C 500g at 66°C 500g at 93°C	
Temperature Performance Max (hours/minutes) Max Continuous (days/weeks)	 150 °C 93 °C	
UV Light Resistance	No change in clarity was seen after 346 hours QUV.	

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Surfaces	This product bonds to high energy surfaces such as glass, acrylic sheet and metals.	Painted surfaces and varnishes should be evaluated.	Bonding to Polypropylene and rubbers is not recommended.
Application Techniques	1. Bond strength is dependent upon the amount of adhesive-to-surface contact developed. Firm application pressure develops better adhesive contact & thus improves bond strength. 2. To obtain optimum adhesion, the bonding	surfaces must be clean dry and well unified. A typical surface cleaning solvent is isopropyl alcohol & water. Use proper safety precautions for handling solvents. 3. Ideal tape application temperature range is 21°C to 38°C (70°F to 100°F).	Initial tape application to surfaces at temperatures below 10°C (50°F) is not recommended because the adhesive becomes too firm to adhere readily. However once properly applied low temperature holding is generally satisfactory.
Applications	VHB Joining Systems are suited for use in many interior and exterior industrial applications. In many situations, they can replace rivets, spot welds, liquid adhesives, and other permanent fasteners. Each product in the VHB family has specific strengths. These can include high tensile, shear and peel adhesion and resistance to solvents, moisture and plasticiser migration. All VHB fasteners should be thoroughly evaluated by the user under actual use conditions with intended substrates, especially if expected use involved extreme environmental conditions.	VHB Joining Systems are suitable for bonding a variety of substrates, including sealed wood, many plastics, composites and metals. Plastics which can be a problem are polyethylene, polypropylene, teflon, silicones and other low surface energy materials. Plasticised vinyl bonding is dependent upon the types and concentrations of plasticisers which can migrate into the adhesives causing a reduction in bond strength; 4945 is most resistant to plasticiser migration. (see VHB Special Feature products data sheet).	Galvanised surfaces are potential problems and should be carefully evaluated. To prevent corrosion on copper and brass, only lacquer coated material should be used with VHB Joining Systems. **Thorough evaluations are recommended when bonding is required to any questionable surface.**

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Values presented have been determined by standard test methods and are average values not to be used for specification purposes.
Our recommendations on the use of our products are based on tests believed to be reliable but we would ask that you conduct your own tests to determine their suitability for your applications.
This is because 3M cannot accept any responsibility or liability direct or consequential for loss or damage caused as a result of our recommendations.

3M

Specialty Tapes & Adhesives

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