Technical Data Sheet

SilGrip™ PSA5080 Pressure Sensitive Adhesive

SilGrip* PSA5080

PSA5080 silicone pressure sensitive adhesive is a toluene solution of polysiloxane gum and resin. It is supplied at 60 percent silicone solids and may be further diluted with aromatic, aliphatic or chlorinated solvents. PSA5080 has been designed as a binding material for the manufacturing of mica tape, which is widely used as flame-retardant material in industries of electronic and architecture. And since PSA5080 possesses supreme adhesion strength, outstanding heat and electric resistance, it provides strong bond strength within mica sheet and between glass fiber cloth and mica sheet to give further structural reinforcement and insulation.

Description

Key Performance/Properties:

- Low viscosity to give good penetration through fabric or porous sheet.
- Provides excellent balance of peel strength, tack, cohesion strength.
- Fast cure to give good dryness and tenderness.
- Adjustable cure speed and hardness on site.
- Provides excellent heat and electric resistance.
- Maintains good shear and tack properties at wide temperature range.
- Resistance to moisture, weathering (ozone, sunlight), chemical (acids, alkalis, oils) and biological (fungus) attack.

Typical Product Data:

Property	Value
Silicone Solid, %	~60

Viscosity @ 25º (77ºF), cps (Brookfield RVF, #4 Spindle)	~60,000
Color	Gardner
Flash Point (ASTM D93) (PMCC), ºC(ºF)	4(40)
Solvent	Toluene

Typical properties are average data and are not to be used as or develop specifications.

General Considerations for Use

Application & Bath Preparation

PSA5080 silicone adhesive is supplied at a viscosity suitable for conventional tape coating equipment. If necessary, it may be thinned with toluene, xylene or other compatible
solvents. The coating bath concentration should be adjusted based on the type of mica, glass cloth as well as on the application. For general purposes, a 13~15% solid content is recommended for single-side mica tape, while lower PSA concentration would be used for double-sided ones to give optimized performance.
After the adhesive is applied to the substrate, it is exposed to a three-step process: lamination, solvent removal and curing.

Lamination

In this step, Mica sheet is applied on glass cloth that is saturated with PSA solution, most of which will be absorbed into mica sheet during this process. Bath concentration, viscosity, line speed and the distance between the coat head and oven would give great impact on this step as well as the final property of product. Depending on the type and
thickness of both mica sheet and glass fiber cloth, each parameter should be optimized carefully in order to get required performance. For instance, bad adhesion strength or delaminating would be resulted with low solid content, low viscosity or/and long lamination period, while sticky surface is the common problem when the viscosity goes to
high-level or/and line speed goes too fast.

Solvent Removal

To achieve optimum adhesive properties, it is essential to optimize the drying step of

the process in order to assure that the solvent is removed from the adhesive film before the curing step of the process starts. Improper drying will result in residual solvent entrapment within the adhesive. If the adhesive is then exposed to temperatures higher than
93.5 °C (200 °F), decomposing peroxide catalyst can cause cross-linking reaction between solvent and adhesive through methyl groups on siloxane chains and on solvent
molecules and adversely affect the properties of the adhesive. Typical temperature range for the drying step of the process is 83 °C (180 °F) to 90 °C (194 °F). A typical drying
cycle is 2 minutes at 90 °C (194 °F).

Curing Process

In order to achieve desired high adhesion strength and heat resistance, once the solvent is removed from the adhesive film, the peroxide cure should be initiated by exposure to
heat. A typical curing cycle is 2~3 minutes at 165 °C (329 °F). Longer exposure time and higher temperature, up to 204 °C (400 °F), can be used without adverse effects. The
exact conditions required to achieve a complete cure will depend on oven length and efficiency, peroxide type and type of substrate used, and should be established during experimental trials on the machine.

Catalysts

High purity, 98% benzoyl peroxide in the quantity of 1 to 4% based on silicone solids, has been found to give the most consistent results in curing of silicone pressure sensitive adhesives. In applications requiring low temperature cure, 2,4 –dichlorobenzoyl peroxide, which is activated at 132 °C (270 °F), can be used. It should be noted
that 2,4-dichlorobenzoyl peroxide may generate polychlorinated biphenyls during the curing process. Please refer to Code of Federal Regulations, title 40, part 761 regarding
incidental PCB byproducts if 2,4- dichlorobenzoyl peroxide is utilized.
The peroxide should be dispersed in solvent before it is mixed with the adhesive. Thorough mixing of the peroxide and adhesive to achieve homogeneous dispersion is

essential
for consistency of finished product.

Typical Demonstration

The following example demonstrates a typical case for Mica tape production:

	Unit	Value
Solid Content	%	14
Bath Viscosity	Sec	18
BPO	%	1.5~3(solid)
Cure Temperature	℃	170~180
Line Speed	M/min	6
Silicone in Tape	%	9.88
Absorbed by Mica	%	8.95

Patent Status

Nothing contained herein shall be construed to imply the nonexistence of any relevant patents or to constitute the permission, inducement or recommendation to practice any invention covered by any patent, without authority from the owner of the patent.

Product Safety, Handling and Storage

Customers should review the latest Safety Data Sheet (SDS) and label for product safety information, safe handling instructions, personal protective equipment if necessary, emergency service contact information, and any special storage conditions required for safety. Momentive Performance Materials (MPM) maintains an around-the-clock emergency service for its products. SDS are available at www.momentive.com or, upon request, from any MPM representative. For product storage and handling procedures to maintain the product quality within our stated specifications, please review Certificates of Analysis, which are available in the Order Center. Use of other materials in conjunction with MPM products (for example, primers) may require additional precautions. Please review and follow the safety information provided by the manufacturer of such other materials.

Limitations

Customers must evaluate Momentive Performance Materials products and make their

own determination as to fitness of use in their particular applications.

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