

SilGrip™ PSA6573A Pressure Sensitive Adhesive

Description

PSA6573A 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. PSA6573A may be blended with SR545 resin dispersion or with other methyl based silicone pressure sensitive adhesives to obtain specific performance properties. PSA6573A adhesive has higher shear and creep resistance than standard silicone pressure sensitive adhesives and displays excellent adhesion to low surface energy materials such as polyethylene, polypropylene, MYLAR® polyester, KAPTON® polyimide and a variety of fluoropolymers such as ACLAR® fluorohalocarbon, TEFLON® tetrafluoroethylene, and FEP.

PSA6573A adhesive may be an excellent choice for laminating films and foils, in bonding applications as a replacement for mechanical fasteners and as a base for printing inks.

Key Features and Benefits

- Wide temperature range performance, maintains good shear and tack properties at intermittent temperatures up to 500 °F
- Adhesion to a wide variety of surfaces including low energy surfaces (silicones, fluoropolymers, polyolefines)
- Resistance to moisture, weathering (ozone, sunlight), chemical (acids, alkalis, oils) and biological (fungus) attack
- Excellent laminate shear forces despite differing coefficients of thermal expansion
- Low tack at room temperature, becomes aggressively pressure sensitive at 93°C (200°F)
- Excellent peel and shear strength

Typical Physical Properties

Property	Value
Silicone Solids, %	60
Viscosity @ 25°C (77°F), cps Brookfield RVF, #6 Spindle @ 20 rpm	19,000
Flash Point, ASTM D-93, °C(°F)	4 (40)
Solvent	Toluene

TYPICAL CURED ADHESIVE PROPERTIES

Property	Value
Peel Strength ⁽¹⁾ , grams/inch	2200
Creep Resistance ⁽²⁾ , minutes	165
Tack ⁽³⁾ , ASTM D2979, grams/cm ²	200 max.

(1) 2 mil polyester film, stainless steel, 2 mil dry adhesive build, 180° angle, 12 inch/minute @24°C (75°F)

(2) 2 mil polyester film, stainless steel, 2 mil dry adhesive thickness, 1/2 inch² overlap, 500grams load, 70°C(158°F)

(3) Probe Tack Tester, 200 grams load

Patent Status

Nothing contained herein shall be construed to imply the nonexistence of any relevant patents or to constitute a 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

The warranty period is 6 months from date of shipment from Momentive Performance Materials if stored in the original unopened container at 25°C (77°F) or below.

Customers should review the latest Material Safety Data Sheet (MSDS) and label for product safety information, safe handling instructions, personal protective equipment if necessary, and any special storage conditions required for safety. MSDS are available at www.momentive.com or, upon request, from any Momentive Performance Materials (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.

Processing Recommendations

PSA6573A silicone adhesive is supplied at a viscosity suitable for conventional coating equipment. If necessary, it may be thinned with toluene, xylene or other compatible solvents. After the adhesive is applied to the substrate, it is exposed to a two step process: solvent removal and curing.

Processing of PSA6573A Catalyzed with Benzoyl Peroxide

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 crosslinking 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

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 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 ⁽⁴⁾ in the quantity of 1 to 3% 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.

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.

(4) Available from: Elf Atochem North America, Inc.

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Limitations

Customers must evaluate Momentive Performance Materials products and make their own determination as to fitness of use in their particular applications.

From automotive to healthcare, from electronics to construction, products from Momentive Performance Materials Inc. are practically everywhere you look. We are a global leader in silicones and advanced materials with a 70+ year heritage of innovation and being first to market – with performance applications that improve everyday life. By knowing our customers' needs and creating custom technology platforms for them, we provide science based solutions to help customers increase performance, solve product development issues and engineer better manufacturing processes.

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