

SilGrip™ PSA915 Pressure Sensitive Adhesive

SilGrip* PSA915 Pressure Sensitive Adhesive

Description

SILGRIP PSA 915 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. PSA 915 may be blended with SR 545 resin dispersion or with other methyl based silicone pressure sensitive adhesives to obtain specific performance properties. PSA 915 adhesive has been found useful in coating of film and fabric substrates for manufacturing industrial pressure sensitive tapes. PSA 915 adhesive has been developed primarily for use on PTFE coated fabric substrates for use in the PVC welding industry. It is particularly suitable for heat-sealing applications due to its excellent high temperature ageing properties, cohesive strength and tack retention under harsh conditions.

Key Features and Benefits

- Wide temperature range performance; maintains good shear and tack properties at intermittent temperatures up to 287°C with superior long term heat ageing properties
- Adhesion to a wide variety of surfaces including low energy surfaces (silicones, fluoropolymers, polyolefins)
- Resistance to moisture, weathering (ozone, sunlight), chemical (acids, alkalis, oils) and biological (fungus) attack
- Excellent balance of tack and peel properties
- Excellent tack retention after elevated temperature exposure, suitable for PVC welding applications
- Can be processed with traditional PSA coating equipment
- Accepts extending filler for cost reduction

Typical Physical Properties

Property	Value
Silicone Solids, %	60
Viscosity @ 25°C, cps ⁽¹⁾	22,000
Solvent	Toluene
Specific Gravity, 25°C	0.99
Colour	Clear to Slightly Hazy

(1) Brookfield RVF, #6 Spindle @10 rpm

Table 2 Typical cured adhesive properties

Property	Value
Tack on 23 µm PET, g/cm ² ⁽²⁾	780
Tack on 50 µm PET, g/cm ² ⁽²⁾	1130
Tack on 23 µm PI, g/cm ² ⁽²⁾	910
Tack on 23 µm PI, 6 hrs/260°C, g/cm ² ⁽²⁾	280
Peel on 23 µm PET, g/inch ⁽³⁾	1134
Peel on 50 µm PET, g/inch ⁽³⁾	1701
Peel on 23 µm PI, g/inch ⁽³⁾	794
Lap Shear with 500 g, 260°C, hrs	24
Lap Shear with 500 g, 287°C, hrs	24

(2) Polyken Probe Tack with 1,000 g/cm² "F" weight, 1cm/s, 1 sec. contact time, 38 µm dry thickness, 2% benzoyl peroxide based on silicone solids, cure cycle: 10 minutes air dry, 2 minutes at 177°C

(3) 180° peel off stainless steel @ 300 mm per minute after 20 minutes dwell, 38 µm dry thickness, 2% benzoyl peroxide based on silicone solids, cure cycle: 10 minutes air dry, 2 minutes at 177°C

Patent Status

Standard copy to come

Product Safety, Handling and Storage

Correctly stored in its original, unopened container at or below 25°C PSA 915 has a shelf life of 730** days from the date of manufacturing. **Please see also use-before/expiry date on product label and certificate.

Standard copy to come

Processing Recommendations

Application

PSA 915 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. After the adhesive is applied to the backing, it is exposed to a two-step process: solvent removal and curing.

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 94°C, 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 to 90°C. A typical drying cycle is 2 minutes at 90°C.

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. Longer exposure time and higher temperature, up to 204°C, 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. 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: Laporte or Pergan.

Priming

In certain applications, the anchorage of the adhesive to the backing may be insufficient and the coating of a primer prior to the adhesive coating may be required.

A typical formulation for a primer may be found in Table 3 below. The formulation may need to be adjusted depending on required bath life, coating equipment and backing material. The primer may be coated by direct gravure, wire wound rod or other coating technique suitable for solvent based coatings, and must be cured prior to adhesive application. The curing conditions will depend on equipment capabilities; substrate type and formulation used and should be established during experimental trials on the machine.

Table 3 Typical Primer⁽⁵⁾ Formulation

Component	Parts by Weight
SS 4191A	13.30
SS 4191B	0.16
SS 4192c	0.50
SS 4259c	0.30
Solvent ⁽⁶⁾	85.74

(5) Refer to the Technical Data Sheet of SS 4191 Silicone Release Coating System, for more information

(6) Typical solvents: toluene, heptane, toluene/heptane mixtures

Specifications

Typical product data values should not be used as specifications. Assistance and specifications are available at the technical service department of Momentive Performance Materials.

Availability

PSA 915 may be ordered from Momentive Performance Materials. Sales office nearest you or an authorized Momentive Performance Materials. product distributor.

Containers

0.5 kg sample

18 kg pail

136 kg drum

Limitations

Standard copy to come

Contact Information

Email

commercial.services@momentive.com

Telephone

Americas	Latin America	EMEAI- Europe, Middle East, Africa & India	ASIA PACIFIC
+1 800 295 2392	Brazil	Europe	China
Toll free*	+55 11 4534 9650	+390510924300	800 820 0202
+704 805 6946	Direct Number	Direct number	Toll free
Direct Number			+86 21 3860 4892
			Direct number
*All American countries	Mexico	India, Middle East & Africa	Japan
	+52 55 2169 7670	+ 91 44 71212207	+81 3 5544 3111
	Direct Number	Direct number*	Direct number
		*All Middle Eastern countries, Africa, India,	Korea
			+82 2 6201 4600

For literature and technical assistance, visit our website at: www.momentive.com

DISCLAIMER:

THE MATERIALS, PRODUCTS AND SERVICES OF MOMENTIVE PERFORMANCE MATERIALS INC. AND ITS SUBSIDIARIES AND AFFILIATES (COLLECTIVELY "SUPPLIER"), ARE SOLD SUBJECT TO SUPPLIER'S STANDARD CONDITIONS OF SALE, WHICH ARE INCLUDED IN THE APPLICABLE DISTRIBUTOR OR OTHER SALES AGREEMENT, PRINTED ON THE BACK OF ORDER ACKNOWLEDGMENTS AND INVOICES, AND AVAILABLE UPON REQUEST. ALTHOUGH ANY INFORMATION, RECOMMENDATIONS, OR ADVICE CONTAINED HEREIN IS GIVEN IN GOOD FAITH, SUPPLIER MAKES NO WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, (i) THAT THE RESULTS DESCRIBED HEREIN WILL BE OBTAINED UNDER END-USE CONDITIONS, OR (ii) AS TO THE EFFECTIVENESS OR SAFETY OF ANY DESIGN INCORPORATING ITS PRODUCTS, MATERIALS, SERVICES, RECOMMENDATIONS OR ADVICE.

EXCEPT AS PROVIDED IN SUPPLIER'S STANDARD CONDITIONS OF SALE, SUPPLIER AND ITS REPRESENTATIVES SHALL IN NO EVENT BE RESPONSIBLE FOR ANY LOSS RESULTING FROM ANY USE OF ITS MATERIALS, PRODUCTS OR SERVICES DESCRIBED HEREIN. Each user bears full responsibility for making its own determination as to the suitability of Supplier's materials, services, recommendations, or advice for its own particular use. Each user must identify and perform all tests and analyses necessary to assure that its finished parts incorporating Supplier's products, materials, or services will be safe and suitable for use under end-use conditions. Nothing in this or any other document, nor any oral recommendation or advice, shall be deemed to alter, vary, supersede, or waive any provision of Supplier's standard Conditions of Sale or this Disclaimer, unless any such modification is specifically agreed to in a writing signed by Supplier. No statement contained herein concerning a possible or suggested use of any material, product, service or design is intended, or should be construed, to grant any license under any patent or other intellectual property right of Supplier covering such use or design, or as a recommendation for the use of such material, product, service or design in the infringement of any patent or other intellectual property right.

The use of the "™" symbol designates registered or unregistered trademarks of Momentive Performance Materials Inc. or its affiliated companies. Momentive and the Momentive logo are trademarks of Momentive Performance Materials Inc.