

SilForce SL3932 ultra low release force polymer

Description

SilForce SL3932 ultra low release force system is an addition cross-linking polydimethylsiloxane polymer bearing vinyl groups that is formulated without solvents. SilForce SL3932 polymer cures to form high-quality films at low temperature, provided that heat is transferred rapidly by the drying system. This coating system is used to enable low release levels against aggressive adhesives.

The rapid, non-blocking coating formed with SilForce SL3932 polymer can allow coated paper/film to be easy and economical to handle.

Key Features and Typical Benefits

- Ultra low release force properties
- Safe handling during application
- Uniform film formation
- Good surface smoothness
- Good curing speed

Typical Physical Properties – Table 1

Viscosity	300	mPas
Release Force ⁽¹⁾	4.5	g/inch
Subsequent Adhesion ⁽²⁾	89	%

(1) PE laminated high quality paper, TESA7475 70Cx20h after applying. Delamination speed is 0.3m/min.

(2) PE laminated high quality paper, Nitto 31B tape. Delamination speed is 0.3m/min.

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

Example Formulation⁽¹⁾

The solventless release coating system can be applied by any of the methods typically used commercially for solventless (and solvent based) silicones. These include three rolls differential, offset gravure and various multiple smooth rolls configurations. Heat should be applied immediately after coating to initiate cure. Best results are obtained with zoned ovens. Operating the first oven zone at 90-120 °C can allow the coating to level, forming a continuous film before cure is initiated. Subsequent oven zones should be set to achieve the required web exit temperature. Actual temperatures required for complete cure will be highly dependent on the performance of the oven and machine conditions. In general, minimum web temperature must be maintained for a dwell time to obtain complete cure, the time being primarily dependent upon the oven length and the line speed.

The sample formulation in Table 2 is based on cure optimization. Destabilized (high) release may occur with some adhesives, solution acrylics in particular, at the suggested cross-linker levels. Please contact a Momentive Performance Materials Technical Service Representative for further information and guidance.

Table 2

SilForce* SL3932 polymer	100
SilForce SL6310 polymer	1.6
Anchorsil ⁽²⁾ 3000 additive	3.0

(1) Product formulations are included as illustrative examples only. Momentive makes no representation or warranty of any kind with regard to any such formulations, including, without limitation, concerning the efficacy or safety of any product manufactured using such formulations.

(2) Anchorsil 3000 additive is recommended for PET film formulations.

Bath Life

The working life of an activated bath will vary depending on ambient conditions. In general, the sample formulation in Table 2 will have a minimum bath life of 4 hours.

Bath Preparation

To help ensure consistent results and to maximize bath life, components should be mixed in the following order:

1. Weigh and then add SilForce SL3932 polymer to a clean, rust-free container/mixing vessel.
2. Weigh and then add Anchorsil* 3000 additive to above material (only when an anchorage promoter is necessary).
3. Weigh and then add SilForce SL6310 polymer to the above material.
4. Agitate thoroughly for 10-15 minutes to ensure homogeneity.

Coating Weight/Substrates

The optimal coat weight will depend on the hold out and resolution of the surface, but generally 0.8-1.6 g/m² will provide a continuous silicone film. A product usage range between 1.3~1.5 gsm is recommended for more stable release force over the time. Coat weights can be determined by X-Ray Fluorescence. For machine trials, a simple, inexpensive method to calculate coat weight is available from Momentive Performance Materials.

Storage and Warranty Period

SilForce SL3932 polymer has a shelf life of 365 days from the date of manufacture when properly stored in its original, unopened container at 25 °C or below. **Please see also the use-before/expiry date on the product label and certificate.

Packaging

Currently available in 18kg pail and 180kg drum.

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

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