

SilForce™ SL6162 Release Coating

Product Description

This thermal solventless technology is most commonly used with glassine and PE coated kraft papers, where the cost saving will be most significant. Nevertheless, it can also be considered for use for kraft paper and PET films by adjusting the level of catalyst accordingly and selecting the right cross-linker. In combination with our new AnchorSil* 2000 and AnchorSil 3000 adhesion promoters, this thermal solventless system may be considered for use with untreated PET films. This system can improve the productivity.

Product References

SilForce SL6162 base polymer

SilForce SL6031 controlled release additive ⁽¹⁾

SilForce SL4320 cross-linker for papers ⁽²⁾

SilForce SL6210 concentrated catalyst (Pt)

(1) Other CRAs may be considered for this base polymer (please contact technical expert from Momentive for advice)

(2) Depending on the substrate and/or the processing conditions other cross-linkers can be used

Key Features and Typical Benefits

- Versatile system for virtually all release liners (papers & films)
- New technology suitable for lower temperature curing
- New generation of inhibitor for fast system
- High flexibility in terms of formulations
- Concentrated catalyst outside of the pre-blends
- Enhanced cross-linker for good anchorage of the release coating
- Productivity gain in terms of machine capacity

Typical Physical Properties

| Property | SilForce SL6162 | SilForce SL6031 |
|------------------------|-----------------|-----------------|
| Viscosity, cstks, 25°C | 170 - 300 | 1500 - 2700 |
| Density, kg/l | 0.97 | 1.05 |

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

Containers

1 kg sample

18 kg pail

180 kg drum

950 kg tote

General Considerations for Use

This solventless release coating system can be applied by any of the methods now being used commercially for solventless silicone. These include three roll differential offset gravure and various multiple smooth roll 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 will allow the coating to level, forming a continuous film before cure is initiated. Subsequent oven zones should be sufficiently high 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 a finite time (= dwell time) to obtain complete cure the time being dependent on oven length and the line speed.

Typical starting formulations for glassine papers at a catalyst level of 50 ppm

| Component | 0% CRA | 5% CRA | 10% CRA |
|---|--------|--------|---------|
| SilForce SL6162 base polymer | 95 | 90 | 85 |
| SilForce SL6031 controlled release additive | - | 5 | 10 |
| SilForce SL4320 cross-linker for papers | 3.2 | 3.5 | 3.8 |
| SilForce SL6210 concentrated catalyst (Pt) | 5 | 5 | 5 |

Typical starting formulation for PET films at a catalyst level of 50 ppm

| Component | 0% CRA | 5% CRA | 10% CRA |
|---|---------------|---------------|----------------|
| SilForce SL6162 base polymer | 95 | 90 | 85 |
| SilForce SL6031 controlled release additive | - | 5 | 10 |
| SilForce SL4320 cross-linker for papers | 3.2 | 3.5 | 3.8 |
| SilForce SL6210 concentrated catalyst (Pt) | 5 | 5 | 5 |
| AnchorSil* 2000 | 3 | 3 | 3 |

Important Note:

The suggested starting formulation in the table 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.

Bath Life

The working life of an activated bath will vary depending on ambient conditions. In general, the suggested formulation in the table will have a minimum bath life of 4 hours. The thin film bath life of the SilForce SL6162 system is significantly shorter than the thin film bath life of the SilForce SL6600, SilForce SL6625 etc. systems. At high catalyst level (more than 80 ppm Platinum) bath life with SL6162 can be shorter.

Bath Preparation

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

1. Weigh and add SilForce SL6162 to a clean, rust-free container/mixing vessel
2. Weigh and add the cross-linker (SilForce SL4320) to the above material
3. Agitate thoroughly for 5 minutes to ensure homogeneity
4. Weigh and add the platinum concentrate (SilForce SL6210) to above mix
5. Agitate thoroughly for 10-15 minutes to ensure homogeneity.

Bath should be prepared just prior to use.

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.

Coat weights can be determined by X-Ray Fluorescence.

Classification, Toxicity and Precautions

SilForce SL4320 cross-linker will generate flammable hydrogen gas upon contact with strong acids, bases or oxidizing agents. Do not reuse the container.

Intended Use

It is the obligation of the customer to examine Momentive's products as to their suitability for the intended use and application. Application, use and processing of the products by customer are beyond the control of Momentive and are therefore within the exclusive responsibility of customer.

Healthcare Applications

Momentive's products are industrial grade products and for industrial use only. They are not intended for use in certain medical applications involving long-term implantation into the human body (generally 30 days or more), direct ingestion, injection into the body or multiple-use contraceptive devices.

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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