

SilForce* SL6062 Release Coating

Product Description

This thermal solventless release coating is an excellent candidate to consider for kraft, art and open papers, where the porosity is relatively high compared to classical glassine or SCK liners. The high viscosity vinyl polymer can enable the reduction of silicone consumption while maintaining good silicone coverage for stable release performance.

Product References

SilForce SL6062 base polymer

SilForce SL6031 controlled Release Additive ⁽¹⁾

SilForce SL4380 cross-linker for papers ⁽²⁾

SilForce SL6210 controlled release additive

(1) Other CRA's 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 open paper substrates (e.g. kraft papers)
- High formulation flexibility
- Enhanced cross-linkers for good anchorage of the release coating
- Potential productivity gain in terms of silicone usage

Potential Applications

The SilForce SL6062 system is compositionally compliant with the following US regulations: 21 CFR 175.320 (resinous and polymeric coatings for polyolefin films), 176.170 (components of paper and paperboard in contact with aqueous and fatty foods), and 176.180 (components of paper and paperboard in contact with dry foods). SilForce SL6031 controlled release additive is compositionally compliant with 21 CFR 175.320 (resinous and polymeric coatings for polyolefin films). The end user has sole responsibility for determining that its product complies with all applicable FDA specifications and limitations and is fit for food contact use.

Typical Physical Properties

| Property | SilForce SL6062 | SilForce SL6031 |
|------------------------|-----------------|-----------------|
| Viscosity, mPa•s, 25°C | 350 - 450 | 1500 - 2700 |
| Density, kg/l | 0.97 | 1.04 |

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

General Considerations for Use

This solventless release coating system can be applied by many 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 90-150 °C will allow the coating to level, forming a continuous film before cure is initiated. Subsequent oven zones should be sufficiently high in temperature 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 finite time (= dwell time) to obtain complete cure, such time being dependent on oven length and the line speed.

Typical starting formulations for glassine papers at a catalyst level of 40 ppm

| Component | 0% CRA | 10% CRA | 20% CRA |
|---|--------|---------|---------|
| SilForce SL6062 base polymer | 96 | 86 | 76 |
| SilForce SL6031 controlled release additive | - | 10 | 20 |
| SilForce SL4380 cross-linker for papers | 3.1 | 3.8 | 4.6 |
| SilForce SL6210 concentrated catalyst | 4 | 4 | 4 |

Important Note:

The suggested starting formulation in the table is based on cure optimization. Destabilized (high) release may occur with some adhesives like self-cross-linkage solution acrylics and UV hot melt, at the suggested cross-linker levels. Please contact a Momentive Performance Materials Technical Service Representative for further information.

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 under normal processing conditions.

The thin film bath life of the SilForce SL6062 system is significantly shorter than the thin film bath life of the SilForce SL6600 and SilForce SL6625 systems, therefore we recommend to have a “proper cleaning” of the coating head if the machine is stopped for more than 20 minutes.

At high catalyst level (more than 80 ppm Platinum) bath life with the SilForce SL6062 system 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 SL6062 system to a clean, rust-free container/mixing vessel
2. Weigh and add the cross-linker (SilForce SL4380 cross-linker for example) to the above material
3. Agitate thoroughly for 5 minutes to ensure homogeneity
4. Weigh and add the platinum concentrate (SilForce SL6210 concentrated catalyst) 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 of the surface, but generally 0.8-1.4 g/m² will provide a continuous silicone film.

Coat weights can be determined by X-Ray Fluorescence.

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.

Contact Information

For product prices, availability, or order placement, contact our customer service at Momentive.com/CustomerService/

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

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