

SilForce™ SL6005

Product Description

SilForce SL6005 release coating system is multi-component, addition curing, thermal solventless release coating system designed for use in the manufacture of release liners for pressure sensitive tapes and labels. Characterized by fast cure at low temperatures, the SL6005 system is suitable for both paper and plastic substrates. One and two-sided constructions are possible. This polymer and cross-linker combination have been optimized for open papers, like MG Kraft paper.

Product references

The SL6005 release coating system consists of easy release polymers, catalyst and crosslinker.

- SL6005 Easy Release Polymer
- SL6210 Platinum Catalyst Concentrate
- XL-blend 6 Crosslinker

Key Features and Typical Benefits

- Fast cure at low temperatures
- Improved acrylic adhesive compatibility.
- Decreased "spike", slip/stick effect commonly associated with addition cure systems.
- Good coverage, better dye stain fidelity
- Good bulk and thin film bath life
- Flexibility in formulation, cost effectiveness

Typical Physical Properties

Property	SL6005
Viscosity, cps, 25 °C, (77°F)	450-550
Specific Gravity, 25°C (77°F)	0.97

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

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 SL6005 system is significantly shorter than the thin film bath life of the SilForce SL6600 and SilForce SL6625

systems, therefore we recommend having 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 SL6005 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 SL6005 system to a clean, rust-free container/mixing vessel.
2. Weigh and add the cross-linker (SilForce XL-blend 6 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.

Please contact Momentive representatives to get a starting recipe and advice prior applying our release coating on the machine. Depending on the process conditions, type of paper and adhesive the formulation needs to be optimized by trials on the industrial coater.

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

CAUTION

XL-blend crosslinkers will generate flammable hydrogen gas upon contact with strong acids, bases or oxidizing agents. Do not reuse containers.

Processing Recommendations

APPLICATION

The SL6005 release coating system can be applied by any of the methods now being used commercially for solventless silicone. These include three roll differentials offset gravure and various smooth roll configurations.

Heat should be applied immediately after coating to initiate cure. When fast curing formulations, i.e. high SL 6210 concentrations are used, best results are obtained with zoned ovens. Operating the first zone at 90-120C (200-250F) will allow the coating to level, forming a continuous film before cure is initiated. Subsequent zones should be sufficiently high to achieve the required exit web temperature. Approximate temperatures for several catalyst levels are listed in the following tables.

Actual temperatures required for complete cure will be highly dependent on machine conditions. In general, minimum web temperature must be maintained a finite time to obtain complete cure, the time being dependent on oven length and air velocity.

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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