

Products for Paper Release Coatings

SL6161 Thermal solventless system

Product Description

This thermal solventless technology is mainly designed for glassine and PE coated kraft papers, where the cost saving will be most significant. Nevertheless, it can also be used for Kraft paper and PET films by adjusting the level of catalyst accordingly and selecting the right cross-linker. In combination with our new adhesion promoter Anchorsil 2000™ this thermal solventless system is suitable for untreated PET films. This system can improve the productivity.

Key Performance Properties

- ✓ Versatile system for 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

Product references

- ✓ SL6161 : Base polymer
- ✓ SL6031 : Controlled Release Additive
- ✓ SL6210 : Concentrated catalyst (Pt)
- ✓ SL4330 : Cross-linker for papers and films

Applications

The SL6161 solventless release coating system can be applied by any of the methods now being used commercially for solventless (and solvent based) silicone. 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 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.

Specifications

FDA status

The SL6161 system (with SL6031) complies with [FDA](#) regulations 175.105, adhesives, 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.

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Typical Product Data

Table 1

Property	SL6161	SL6031
Viscosity, cstks, 25°C	170 - 300	1500 - 2700
Density, kg/l	0.97	1.05

Containers

0.45 kg sample
18 kg pail
181 kg drum
1000 kg container

Specifications

Typical product data values should not be used as specifications. Assistance and specifications are available at the technical service department of GE Bayer Silicones.

Instructions for Use

Table 2 Typical starting formulations for Glassine papers at a catalyst level of 50 ppm

Component	0% CRA	5% CRA	10% CRA
SL6161	95	90	85
SL6031	-	5	10
SL4330	3.3	3.6	3.9
SL6210	5	5	5

Table 3 Typical starting formulation for PET films at a catalyst level of 50 ppm

Component	0% CRA	5% CRA	10% CRA
SL6161	95	90	85
SL6031	-	5	10
SL4330	3.5	3.8	4.1
SL6210	5	5	5
Anchorsil 2000	3	3	3

Important Note:

- The suggested starting formulations in Table 2 and 3 are based on cure optimization. Destabilized (high) release may occur with some adhesives, solution acrylics in particular, at the suggested crosslinker levels. Please contact a GE Bayer Silicones Technical Service Representative for further information and guidance.

Bath life

The working life of an activated bath will vary depending on catalyst and inhibitor levels as well as ambient conditions. In general, the suggested formulations in Table 2 and 3 will have a minimum bath life of 8 hours.

The thin film bath life of the SL6161 system is significantly shorter than the thin film bath life of the SL6600, SL6625 etc. systems.

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Bath preparation

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

1. Weigh and add polymers (SL6161/SL6031) to a clean, rust-free container/mixing vessel
2. Weigh and add the crosslinker (SL4330) to above mix
3. Agitate thoroughly
4. Weigh and add the platinum concentrate (SL6210) to above mix
5. Agitate thoroughly
6. Weigh and add the Anchorsil 2000 to above mix (when needed)
7. Agitate thoroughly for 10-15 minutes to ensure homogeneity.

Bath should be prepared just prior to use.

Coating Weight/Substrates

The SL6161 system is suitable for a variety of papers. These include supercalendered kraft, glassine, clay coated kraft, etc. 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. For machine trials, a simple, inexpensive method to calculate coat weight is available from GE Bayer Silicones.

Handling and Safety

Material Safety Data Sheets are available upon request from GE Bayer Silicones. Similar information for solvents and other chemicals used with GE Bayer Silicones products should be obtained from your suppliers. When solvents are used, proper safety precautions must be observed.

Storage and Warranty Period

Correctly stored in its original, unopened container at 25°C SL6161 and SL6031 have a shelf life of 730** days from the date of manufacturing. **Please see also use-before/expiry date on product label and certificate.

Availability

All components of the SL6161 system may be ordered from GE Bayer Silicones Sales office nearest you or an authorized GE Bayer Silicones product distributor.

Classification, Toxicity, Precautions

SL4330 cross-linker will generate flammable hydrogen gas upon contact with strong acids, bases or oxidizing agents. Do not reuse the container.

Contact

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