

SilForce SL5130 controlled release polymer

Description

SilForce SL5130 controlled release polymer is a highly efficient controlled release polymer to consider for use in manufacture of tight release silicone liners for pressure sensitive tapes and labels.

SilForce SL5130 controlled release polymer can help reduce smoke and foam generated during processing. These features, combined with fast cure and stable reproducible release, can offer converters excellent processing, productivity and a premium liner.

SilForce SL5130 controlled release polymer is based on Momentive's proprietary silicone resin polymer technology that typically delivers process benefits and reliable tight release performance.

Key Features and Typical Benefits

- Compatible with virtually all Momentive SilForce solventless release polymers, crosslinkers, inhibitors, catalysts, anchorage and anti-misting additives.
- May be considered for use in addition-cure solvent-dispersed release coating formulations.
- Typically exhibits low smoke during processing, which can help promote safer working conditions and reduced environmental impact.
- Excellent foam control in solventless coating baths during process offers potential for productivity and quality improvements.
- Highly efficient controlled release polymer that provides for differential release performance options.

Typical Physical Properties

Viscosity ⁽¹⁾	Silicone Solids ⁽²⁾	Appearance
3000 cps	89.0%	Clear Fluid

(1) Ostwald tube, 25 °C

(2) 150 °C, 45 minute weight loss

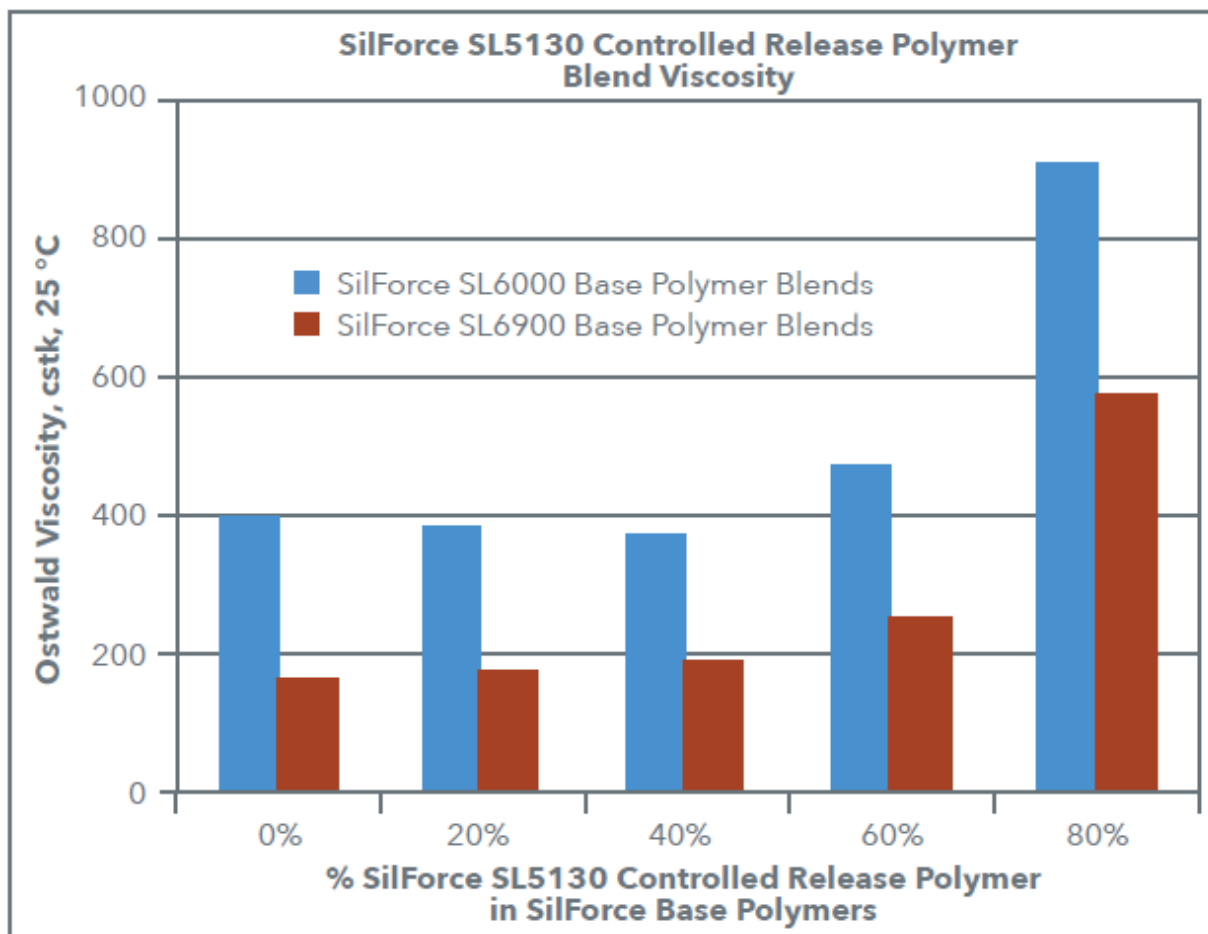
Typical properties are average data and are not to be used as or develop specifications.

Potential Applications

- Tight release liners for removable and ultra-removable pressure sensitive adhesive labels.
- High differential paper and film release liners for tapes.

General Considerations for Use

The unique rheology of SilForce SL5130 controlled release polymer can help promote readily coatable viscosity of formulated coating baths over a wide range of concentrations, as displayed below:



Note: Test data. Actual results may vary.

The above chart illustrates viscosity effect of blending SilForce SL5130 controlled release polymer with SilForce SL6000 and SL6900 base polymers, respectively. SilForce SL5130 controlled release polymer content up to 80% can be tolerated without blend viscosity exceeding normal coatable range.

SAMPLE FORMULATIONS (parts by weight basis):

Paper Substrates:

Formula	SilForce SL6100 base polymer	SilForce SL6040 inhibitor	SilForce SL6210 catalyst	SilForce SL5130 controlled release polymer	SilForce SS4300C crosslinker
Easy	92	0.4	8	0	3.4
Moderate	77	0.4	8	15	3.4
Tight	57	0.4	8	35	3.6
Extra Tight	32	0.4	8	60	3.7

The inputs should be blended as follows: SilForce SL6100 base polymer, SilForce SL6040 inhibitor and SilForce SL5130 controlled release polymer are thoroughly mixed before addition of SilForce SS4300C crosslinker. The crosslinker should be well mixed with all polymer components before addition of SilForce SL6210 catalyst. Formulated baths can be applied to supercalendared kraft (SCK), glassine, clay-coated kraft (CCK) and other paper substrates by means of 3-roll offset gravure or multi-roll film splitting coaters to achieve defect-, smear and migration-free, thermally cured thin silicone coatings. Processing conditions (i.e. web temperature, gravure ratios, line speed and oven efficiency), liner basis weight and porosity dictate the degree of cure, silicone coat weight, and release performance of the finished liner.

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. Other Momentive SilForce base polymers, inhibitors, catalysts, crosslinkers and additives are available to meet specific performance criteria and targets. We recommend seeking Momentive technical assistance before initiating liner production using SilForce silicone coating products.

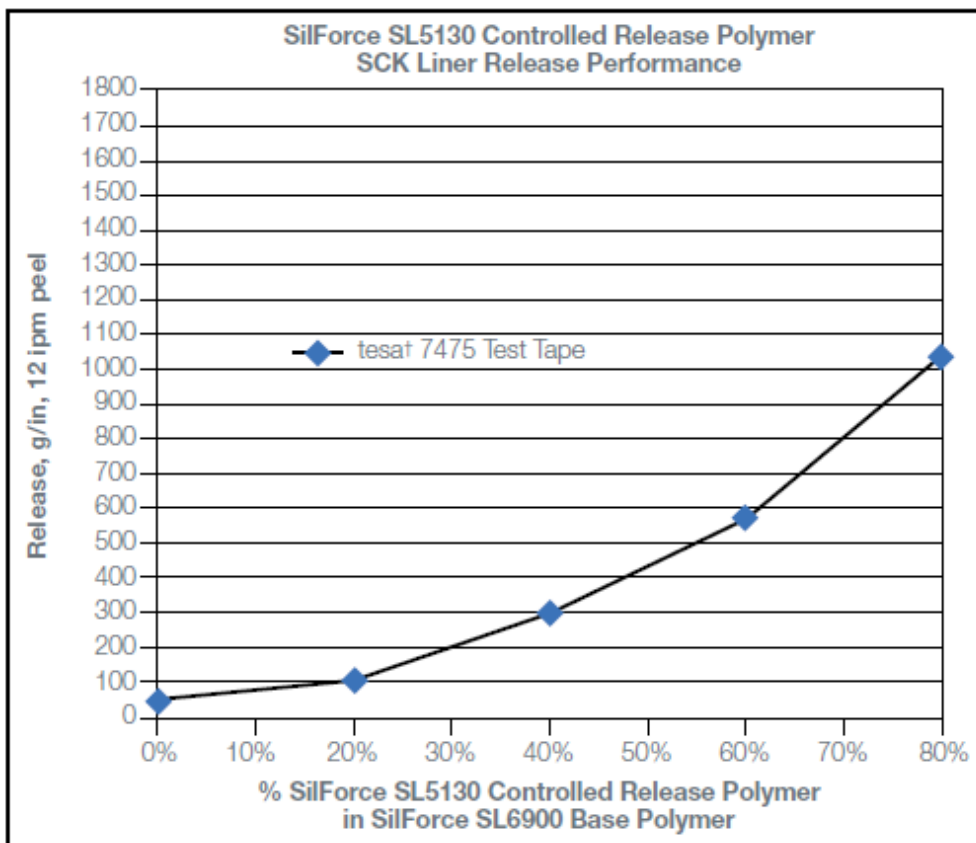
PET Film Substrates:

Formula	SilForce SL6100 base polymer	SilForce SL6040 inhibitor	AnchorSil* 2000 anchorage additive	SilForce SL6210 catalyst	SilForce SL5130 controlled release polymer	SilForce SS4300C crosslinker
Easy	92	0.4	3	8	0	2.0
Moderate	72	0.4	3	8	20	2.1
Tight	47	0.4	3	8	45	2.2
Extra Tight	22	0.4	3	8	70	2.4

Note: Above SilForce grades include AnchorSil 2000 anchorage additive to assist in anchorage of the coating to polyester (PET) films. SilForce SL6100 base polymer, SilForce SL6040 inhibitor, and SilForce SL5130 controlled release polymer should be thoroughly mixed before AnchorSil 2000 anchorage additive is added. SilForce SS4300C crosslinker can then be added and thoroughly mixed before the final addition of SilForce SL6210 catalyst to complete the formulation.

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Test Performance Data



Note: Test Data. Actual Results may vary.

Above figure illustrates release performance of SilForce SL5130 controlled release polymer in a formulation with SilForce SL6900 premium release base polymer coated on Nicolet SCK sheet. Coatings formulated with 100 ppm Pt catalyst, SiH/Vinyl ratio = 2.25, Coatweight = 1.1 gsm. tesa[†] 7475 acrylic adhesive test tape was applied to liner after 1 week ambient aging. Laminated tapes were subsequently oven-aged at 70 °C for 20 hours before peel release was determined. Significant low-speed peel release differential was achieved at < 40% SilForce SL5130 controlled release polymer concentration.

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

Email

commercial.services@momentive.com

Telephone

Americas	Latin America	EMEAI- Europe, Middle East, Africa & India	ASIA PACIFIC
+1 800 295 2392	Brazil	Europe	China
Toll free*	+55 11 4534 9650	+390510924300	800 820 0202
+704 805 6946	Direct Number	Direct number	Toll free
Direct Number			+86 21 3860 4892
			Direct number
*All American countries	Mexico	India, Middle East & Africa	Japan
	+52 55 2169 7670	+ 91 44 71212207	+81 3 5544 3111
	Direct Number	Direct number*	Direct number
		*All Middle Eastern countries, Africa, India,	Korea
			+82 2 6201 4600

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