

SPUR+* 1050MM

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Description

SPUR+ 1050MM prepolymer is a silylated prepolymer, plasticizer-free, with low viscosity, for use in the manufacture of one-part, moisture-curing sealants. It is an excellent material of choice as a base resin for medium modulus sealants and adhesives in industrial and transportation applications where higher tensile strength is required.

Key Features and Benefits

- Broad formulation latitude
- Cost-effective
- Easy application characteristics
- Excellent adhesion to many surfaces without primer
- High durability indoors and outdoors
- Good water and chemical resistance
- High elastic recovery
- Long Shelf Life

Silane-terminated polyurethanes (SPUR+ prepolymers) have become increasingly attractive to manufacturers of adhesives, sealants and coatings. This hybrid technology is appealing because of the synergy between the silane-curing mechanism and polyurethane backbone properties.

Formulations developed through this technology offer fast room-temperature cure and good durability, while the sealants or adhesives they produce are free of unreacted isocyanate. Benefits of the resulting products also include freedom from bubbling during cure and a broadening of the formulation latitude compared to conventional polyurethane technologies. These prepolymers allow the formulator to use a wide variety of additives and adhesion promoters to meet end users' performance needs, such as:

1. Good elasticity and durability
2. Primerless adhesion to both organic and inorganic, porous and non-porous substrates
3. Superior chemical resistance, such as to automotive fluids (e.g., glycols, motor and transmission fluids)
4. Minimal shrinkage
5. Excellent weatherability
6. Immediate paintability
7. Non-staining of porous substrates

Typical Physical Properties

	SPUR ⁺ 1050MM Prepolymer
Appearance	Clear, Viscous liquid
Viscosity (25°C) (mPa)	≈35,000
Plasticizer	none
Shelf Life (months)	24
Tensile Strength (N/mm ²)	0.68
Elongation (%)	150
100% Modulus (N/mm ²)	0.55
Shore A	29
Elastic Recovery (%)	87

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

[1] Saunder, J.H. and K.C. Frisch, Polyurethanes: Chemistry and Technology, Vol. I, Part I, Interscience, NY (1962), P. 273. (b)

[2] (a) Feng, T.M. and B.A. Waldman, "Silylated Urethane Polymers Enhance Properties of Construction Sealants," Adhesives Age, April 1995. (b) Landon, S.J. A. Guillet and R.R. Johnston, ("Silylated Urethane Polymers for Sealants,") European Adhesives and Sealants; Dec. 1995.

[3] Landon, S.J., M.B. Dawkins, B.A. Waldman, R.R. Johnston, "The Adhesion of Hybrid Resins to Plastic Substrates; Adhesives Age, April 1997.

[4] Huang, M.W., and R. Handel, "New Developments in Silylated Polyurethane Technology," Adhesives Age, April 1999.

[5] Johnston, R.R. and P. Lehmann, US 5,990,257.

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.

Processing Recommendations

The following generic sealant formulae may be used to evaluate the performance characteristics of SPUR+ prepolymers

Ingredients
SPUR+ 1050MM Prepolymer
Plasticiser (DIDP)
Moisture Scavenger (Silquest A-171*Silane)
Calcium carbonate
UV stabilizers
SiO ²
TiO ²
Adhesion Promoter (Silquest* A-1110 Silane)
Tin catalyst

The SPUR+ prepolymer content represents 23% of the total formulation.

The mechanical properties are measured after curing the sealants for 2 weeks at 23°C/50% relative humidity, and testing according to ISO 37 (tensile properties), ISO 868 (Shore A hardness).

	SPUR+ 1050MM Prepolymer
Elongation at break (%)	305
100% Modulus (N/mm ²)	1.24
Tensile Strength (N/mm ²)	1.97
Hardness Shore A	46.1

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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