



MOMENTIVE
performance materials

High Modulus SPUR+* Prepolymers: SPUR+ 3100HM prepolymer SPUR+ 3200HM prepolymer

Product Description

SPUR+ 3100HM prepolymer and SPUR+ 3200HM prepolymer are silylated polyurethane resins which moisture cure under ambient conditions. Because of their ability to build high tensile strength they are excellent candidates to consider as binders for one or two part structural adhesive formulations. High-performance, low viscosity SPUR+ 3100HM and SPUR+ 3200HM prepolymers are formulated without plasticizers and contain no free isocyanates. Potential applications include industrial, transportation, construction adhesives and coatings.

Key Features and Typical Benefits

- High tensile strength and modulus with balanced flexibility
- Moisture cure
- Primerless adhesion to most substrates
- Excellent hydrolytical stability
- Good thermal resistance
- Long shelf-life

SPUR+ is a trademark of Momentive Performance Materials Inc.

Momentive Performance Materials provides versatile materials as the starting point for our creative approach to ideas that help enable new developments across hundreds of industrial and consumer applications. We are helping customers

solve product, process, and performance problems; our silanes, fluids, elastomers, sealants, resins, adhesives, urethane additives, and other specialty products are delivering innovation in everything from car engines to biomedical devices.

From helping to develop safer tires and keeping electronics cooler, to improving the feel of lipstick and ensuring the reliability of adhesives, our technologies and enabling solutions are at the frontline of innovation.

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Typical Physical Properties of Prepolymers

	SPUR+ 3100 HM prepolymer	SPUR+ 3200 HM prepolymer
Appearance	Clear to slightly hazy	Translucent to opaque
Viscosity Ps @ 25°C	45,000-65,000 cPs	9,000-17,000 cPs
Isocyanate	None	None

Typical Physical Properties of Cured Prepolymer⁽¹⁾

	SPUR+ 3100 HM prepolymer	SPUR+ 3200 HM prepolymer
Tensile Strength (psi)	450	1,000
Elongation (%)	200	100
Young's Modulus (psi)	500	1,700
Shore A Hardness	40	60
Tack Free Time (min.)	<20	<20

(1) Neat polymers cured with Fomrez† UL-11A for 10 days @ 35°C & 50% RH

Test Result Performance in Adhesive Formulations

Model Adhesive Formulation

Ingredients	Weight
SPUR+ prepolymer	60.2
Fume Silica R 720	6.0
CaCO ₃ (PPT)	10.0
CaCO ₃ (ground)	16.0
TiO ₂	5.0
Silquest* A-1120	1.5
Fomrez UL 11A	0.8
DMDEE	0.5

Mechanical Properties and Shear Strength

ASTM D 412, C 661 and D 1002

SPUR+ Prepolymer Used	Tensile Strength (psi)	Young's Modulus (psi)	Elongation (%)	Hardness Shore A	Lap Shear Strength on Aluminum Maximum Load (lb/sq. in) / % CA ⁽¹⁾
SPUR+ 3100 prepolymer	866	600	270	55	794 / 70% CA ⁽¹⁾
SPUR+ 1050MM prepolymer	400	500	184	45	211 / 50% CA ⁽¹⁾

(1) CA - Cohesive failure

Note: Test data. Actual results may vary.

Product formulations are included as illustrative examples only. Momentive makes no representation or warranty of any kind with respect to any such formulations, including, without limitation, concerning the efficacy or safety of any product manufactured using such formulations.



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Patent Status

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Technical subject matter in this publication is described and protected by one or more pending US patent applications and foreign counterparts.

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Europe, Middle East, Africa	+32.(0)14.58.45.45 (Belgium)	CHEMTREC: +1-703.527.3887 (collect)
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