

SPUR+* 3040 Prepolymer



MARKETING BULLETIN

SILANES - ADHESIVES & SEALANTS ADDITIVES

SPUR+ 3040 prepolymer is an excellent candidate to consider as a binder for high strength adhesives requiring adhesion to a variety of substrates. The low viscosity of SPUR+ 3040 prepolymer has shown it to be easy to formulate and use for the manufacture of adhesives. Many applications have benefited from the excellent heat resistance of SPUR+ 3040 prepolymer in circumstances where thermal stability is required.

Key Features and Typical Benefits

- High strength with good elongation
- Thermal stability
- Low viscosity
- 100% reactive

Typical Physical Properties

Property	Value
Appearance	Clear to slightly hazy liquid
Color (Co)	Light yellow
Specific Gravity at 25 °C	1.014
Viscosity at 25 °C, cP	~10,000

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

Typical Physical Properties and Heat Resistance of SPUR+ 3040 Prepolymer

In a standard polymer test, the SPUR+ 3040 prepolymer was cured by 1% of Fomrez† UL-28 tin catalyst and 0.5% of Nix* silicone L-501 at 23 °C and 50% relative humidity for 10 days. To test heat resistance, the cured SPUR+ 3040 prepolymer sheet was placed in an oven at 120 °C for 3 days. The properties of the SPUR+ 3040 prepolymer before and after the heat aging are compared in the table below.

Property of SPUR+ 3040 prepolymer	Initial Value	Under 120 °C for 3 days
Tensile Strength	5.25 MPa	7.58 MPa
Modulus at 100%E	4.43 MPa	3.79 MPa
Elongation at Break	113%	201%
Hardness	47 Shore A	50 Shore A

Note: Test data. Actual results may vary.

SPUR+ 3040 prepolymer can be added to a SPUR+ 1015 prepolymer-based sealant formulation to improve heat resistance. In the example below, SPUR+ 3040 prepolymer was added to a SPUR+ 1015 prepolymer-based sealant; the cured product then survived heat aging at 120 °C for 8 days. The example sealant formulation and test results are shown in the tables below.

Example Formulation

Ingredients	(g)
SPUR+ 1015 prepolymer	66.70
SPUR+ 3040 prepolymer	33.30
CaCO ₃	111.11
TS 720 (fumed silica)	4.17
R-960 (TiO ₂ , colorant)	1.39
Silquest A-171* silane	1.94
Silquest* A-1120 silane	1.94
DIDP (plasticizer)	55.56
Tinuvin† 213	0.83
Tinuvin 662 LD	0.83
Fomrez† SUL-4	0.28
Total	278.06

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.

Test Results

Property	Initial Value	Under 120 °C for 8 days
Tensile Strength	2.5 MPa	2.2 MPa
Modulus at 100%E	0.94 MPa	0.86 MPa
Elongation at Break	327%	258%
Hardness	36 Shore A	30 Shore A

Note: Test data. Actual results may vary.

Patent Status

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