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Americas

ADDITIVES PREPOLYMERS RESINS

PAINTS AND COATINGS

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Adhesion Promoters

CoatOSil* additives and Silquest* silanes are versatile products that can react with a wide variety of organic and inorganic materials. These products can be considered for use as coupling agents, crosslinking agents, and surface modifiers in such applications as paints, coatings, adhesives, and sealants.

Key Products	Product Chemistry	Compatible Resin Chemistry		Applications
		Solvent Based	Water Based	
CoatOSil MP 200 Epoxy silane oligomer	Oligomeric epoxy silane	• Acrylic • Polyurethane (1K and 2K systems) • Epoxy • Polysulfide	• Pure acrylic • Styrene acrylic • Polyurethane dispersion and epoxy	• Architectural coatings • Wood coatings • General industrial coatings • Protective coatings • Automotive coatings
CoatOSil T-Cure Mercapto silane oligomer	Low-odor mercapto oligomeric silane	Acrylic isocyanate	Not applicable	• General industrial • Protective coatings • Automotive coatings
Silquest A-Link* 600 aminosilane	Low-yellowing amino silane	• Polyurethane (1K systems) • Epoxy • Silylated polyurethane • Polyether adhesives and coatings • Silicone sealants	Not applicable	• Moisture curable adhesives and sealants • Polyurethane sealants • SPUR+* prepolymer adhesives and sealants • Automotive and performance coatings
Silquest A-Link 25 and 35 silane	Isocyanate functional silane	• Polyurethane (1K systems) • Silylated polyurethane	• Acrylic (2K systems) • Polyurethane dispersion (1K and 2K systems) • Epoxy (2K systems)	• Moisture curable urethane adhesives, sealants and coatings • Adhesion promoter for all systems where active hydrogen species are available
Silquest A-Link 235 silane	Aminofunctional silane siloxane	• Hybrid, polyurethane RTV silicone sealants and adhesives • Filled and unfilled oxime silicone sealants	Not applicable	• Moisture curable urethane adhesives, sealants and coatings • Adhesion promoter for all systems where active on difficult substrates; plastics, aluminum, wet concrete

Key Features and Typical Benefits:

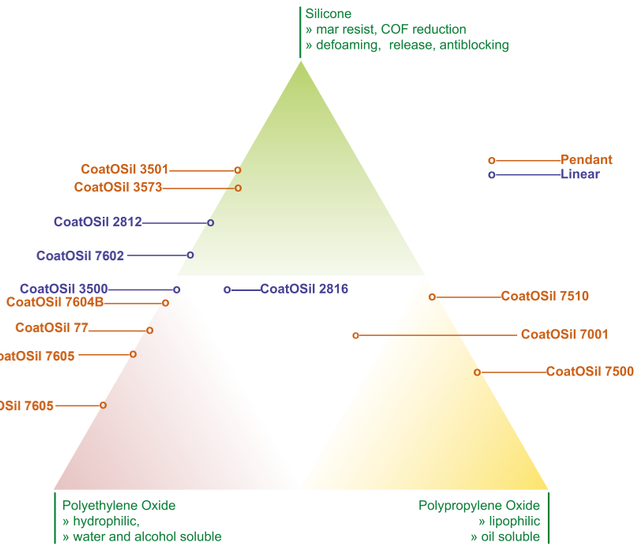
- Improved scrub resistance
- Enhanced dry and wet adhesion on multiple substrates
- Increased corrosion and chemical resistance
- Expanded hardness and mechanical strength

Flow and Leveling Additives

CoatOSil* silicone-polyether additives are used in wide variety of applications including waterborne and solventborne coatings, high solids, powder, and UV coatings and inks.

Key Features and Typical Benefits:

- Enhanced flow and leveling (eliminate defects like craters, orange peel, etc.)
- Improved slip (reduced coefficient of friction)
- Increased mar resistance
- Control of foam and enhanced air release
- Improved substrate wetting
- Increased gloss
- Anti-blocking (release)



The effect of silicone additives on a coating strongly depends on their mutual compatibility. Compatibility is controlled by the amount of polyethylene oxide (EO), polypropylene oxide (PO), and polydimethylsiloxanes (PDMS) in a molecule.

Each vertex of the triangle respectively represents a) 100% PDMS (silicone), b) polyethylene oxide (EO), and c) polypropylene oxide (PO).

The base of the triangle represents polyalkylene oxide (no silicone).

Depending on its locus relative to the corners of the triangle, each CoatOSil additive offers varying properties.

- Additives near the EO vertex are water soluble and are good flow and leveling agents to consider for waterborne systems.
- Additives near the PO vertex are oil soluble to consider for solventborne and high solids coatings and inks.
- Additives at the top of triangle have more silicone properties, such as defoaming, anti-blocking, release, and slip.

*CoatOSil is a trademark of Momentive Performance Materials Inc.

Prepolymers

Silane-terminated polyurethanes have become increasingly attractive to manufacturers of adhesives, sealants, and coatings. This high-performance hybrid technology is a result of the synergy between the silane-curing mechanism and polyurethane backbone properties.

Formulations based on SPUR+* prepolymer offer fast room-temperature cure and good durability, as the sealants or adhesives are free of unreacted isocyanate. Typical benefits also include freedom from bubbling during cure and a broadening of the formulation latitude compared to conventional polyurethane technologies.

Key Products	Typical Viscosity at 25 °C (mPas)	Typical Characteristics	Potential Applications
SPUR+ 1012 prepolymer	~50000	• Ultra Low modulus	• Co Binder for 25LM class sealants (ISO 11600)
SPUR+ 1015 prepolymer	~50000	• Low modulus	• Construction sealants
SPUR+ 1050 prepolymer	~35000	• Balanced mechanical properties	• Adhesives • Sealants
SPUR+ 1060 prepolymer	~17000	• Medium modulus • Lower viscosity • Ethoxy prepolymer	• Construction sealants • Methanol free formulations • Flooring adhesives
SPUR+ 3030 prepolymer	~2500	• Low viscosity • High hydrophobicity	• Waterproofing products
SPUR+ 3040 prepolymer	~7000	• Low viscosity • High strength • Versatile • Easy to formulate	• High strength adhesives requiring adhesion to a variety of substrates
SPUR+ 3060 prepolymer	~22500	• Balanced strength, flexibility and toughness	• Elastic adhesive formulations

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

Key Features and Typical Benefits:

- Moisture cure at room temperature
- Primerless adhesion to many substrates
- Excellent chemical resistance and weatherability
- Excellent elongation and elastic recovery
- Isocyanate free formulation
- Minimal shrinkage
- Formulation flexibility with 1K and 2K systems
- Easy application characteristics

*SPUR+ is a trademark of Momentive Performance Materials Inc.

Silicone Emulsions

In the coatings market, silicone emulsions are known for their durability, water repellency, lower VOC, and resistance to other environmental elements. Momentive's silicone emulsions can help create longer-lasting, protective coatings that maintain aesthetics in interior and exterior architectural applications.

Key Products	Product Description	Key Features & Typical Benefits	Potential Applications
CoatOSil DRI emulsion	Film-forming waterborne silicone emulsion	• Reduced water uptake • Improved UV resistance • Outstanding thermal and UV resistance as sole binder • Compatibility with wide variety of water polymer systems including, acrylics styrene acrylics, epoxies, polyurethane dispersions, and alkyds	• Exterior architectural paints • Waterborne coatings • Heat-resistant coatings
Silblock* WMS	Hydrophobic aqueous emulsion based on silane technology	• Can help reduce capillary water absorption in masonry applications. • High alkali resistance • Offers flexibility in applications. Outstanding water repellent as an integral blend/admixture or surface treatment (penetrating sealer). • Can help provide excellent protection against deterioration caused by freeze-thaw cycling, chloride ion intrusion, efflorescence and water penetration. • Water-dilutable and stable	• Masonry water repellents • Water proofing applications • Cement admixture

Key Features and Typical Benefits:

- Improved UV resistance
- Enhanced water resistance
- Increased efflorescence resistance

*CoatOSil and Silblock are trademarks of Momentive Performance Materials Inc.

High-Temperature Performance Silicone Resin

Silicone resins are key technologies in high-temperature performance coatings, corrosion protection coatings, weather-resistant coatings, and electrical insulating varnishes. They offer a variety of typical benefits such as high heat resistance, UV and oxidation resistance, gloss and color retention and good adhesion to aluminum or steel. Methyl silicone resins are excellent candidates to consider for applications requiring long-term heat resistance at 200 °C, whereas methyl-phenyl resins can be considered for applications requiring heat resistance up to 250 °C. For higher heat resistance performance, the use of inorganic color pigments such as titanium dioxide can enable heat resistance to 350 °C, while the use of aluminum and micaceous iron oxides has been shown to enable heat resistance up to 600 °C.

	CoatOSil* M120XB resin	CoatOSil P 501 resin	CoatOSil P 851 resin	CoatOSil P 576 resin	TSR1452 resin	TSR117 resin
Product Type	Solution	Solution	Solution	Solution	Solution	Solution
Active Substance Content (%)	50	50	50	75	60	50
Type of Solventemulsion	Xylene/ butanol	Xylene/ cyclohexanone	Xylene/ cyclohexanone	Xylene/ butanol	Xylene	Xylene
Viscosity at 23 °C, DIN 53 015 and attt 25 °C, DIN 52 015	40-60mPas	220-300mPas	60-100mPas	600-1300mPas	40mPas	150mPas
Hardness	Hard	Medium hard	Soft	Medium hard	Medium hard	Medium
Phenyls Containing	No	Yes	Yes	Yes	Yes	Yes

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

Key Features and Typical Benefits

- Heat resistance up to 600 °C in certain formulations
- Electrical insulation
- Anti-corrosiveness
- Thermal shock resistance

Potential Applications

- High heat performance paints for industrial use
- High heat performance paints for consumer use
- Electrical insulating varnishes
- Weather-resistant coatings
- Thermo-set molded parts

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