



Technical Data Sheet

DOWSIL™ RSN-6018 Resin Intermediate

FEATURES & BENEFITS

- Contributes to good thermal and weathering resistance of formulated paints
 - Resistance to chalking and checking
 - Gloss and color retention
- Aluminum-pigmented coatings based on 30% DOWSIL RSN-6018 Resin Intermediate are serviceable up to 425°C (797°F)

COMPOSITION

- Hydroxy-functional silicone supplied as flaked solid

Silicone intermediate for colored and high-temperature finishes

APPLICATIONS

- DOWSIL™ RSN-6018 Resin Intermediate is primarily used in maintenance and architectural finishes, appliance finishes, coil coatings and high-temperature finishes.
- Maintenance, coil coating and architectural finishes based on organic copolymers modified with DOWSIL RSN-6018 Resin Intermediate exhibit good chalk resistance and retain their color and gloss after years of outdoor exposure.
- High-temperature finishes prepared with silicone-organic copolymers and cold blends have excellent gloss and color retention and can be used on space heaters, ovens, incinerators and similar high-temperature appliances.
- Silicone organic blends containing DOWSIL RSN-6018 Resin Intermediate may also be used in powder coating applications where improved weatherability and heat resistance are required.

TYPICAL PROPERTIES

Specification Writers: These values are not intended for use in preparing specifications.

CTM ¹	Property	Unit	Result
0176	Appearance		Flaked solid
0208	Nonvolatile Content, 1.5 g for 3 hours at 135°C (275°F)	% (min)	98.0
0208	Volatility ² , 1.5 g for 3 hours at 250°C (482°F)	%	4.5
0540	Specific Gravity at 25°C (77°F)		1.25
0936	Softening Point	°C (°F)	40 (104)
0553	Molecular Weight		
	Number Average		1200
	Weight Average		2400
	Theoretical Residual Silicon Dioxide	%	50
	Phenyl / Propyl Ratio		2.7/1.0
	Degree of Substitution		1.0
	Thinners	Ketones, esters, chlorinated solvents, alcohols, aromatic hydrocarbons, and solvent blends having kauri butanol values >50	

¹CTMs (Corporate Test Methods) correspond to standard ASTM (American Society for Testing and Materials) tests in most instances.

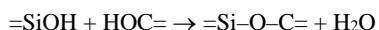
Copies of CTMs are available upon request.

²After determining solids content.

DESCRIPTION

DOWSIL RSN-6018 Resin

Intermediate is a silanol-functional, low-molecular-weight silicone intermediate that reacts with a wide variety of organic resins and monomers. Resins modified with DOWSIL RSN-6018 Resin Intermediate show improved heat stability and weatherability over unmodified resins. This versatile intermediate reacts with alkyds, phenolics, epoxies, polyesters and other organic resinous materials containing hydroxyl groups. Such reaction takes place as follows:



This reaction can be accomplished by employing either solvent or fusion methods with conventional techniques and equipment. A titanate catalyst such as tetrabutyl titanate will accelerate the copolymerization reaction. DOWSIL RSN-6018 Resin Intermediate can also be cold blended with a variety of organic resins to improve weatherability and heat resistance. Compatibility should be tested before use.

HOW TO USE

DOWSIL RSN-6018 Resin

Intermediate can be copolymerized or cold blended with a variety of organic resins. Copolymerization with carbinols on organic resins offers a wider selection of organic resins and formulations because of improved compatibility with the formation of the silicone-organic ($=Si-O-C=$) bonds. Sufficient excess carbinol functionality must be provided for optimum compatibility and resin stability.

Cold blending with DOWSIL RSN-6018 Resin Intermediate limits the organic resin selection because of compatibility but offers lower processing costs as compared with copolymerization. Solvent selection is important with cold blending the silicone with organic resins in regards

Table 1: Solubility of DOWSIL RSN-6018 Resin Intermediate¹

Solvent	Viscosity, cP	Specific Gravity
Methyl Propyl Ketone	96	1.093
Methyl Isobutyl Ketone	135	1.090
Butyl Acetate	163	1.130
Methyl Isoamyl Ketone	176	1.095
Methyl Amyl Ketone	176	1.096
Xylene	282	1.118
Isobutyl Isobutyrate	338	1.117
Diisobutyl Ketone	453	1.091

¹70 percent solids

Table 2: Compatibility of DOWSIL RSN-6018 Resin Intermediate with Various Resins¹

Resin Type	Brand	DOWSIL RSN-6018 Resin Intermediate		
		10%	50%	
Acrylic	Paraloid ^{®2} B-48S	C	C	
	Paraloid ^{®2} B-66	C	SI	
	Paraloid ^{®2} B-72	C	I	
	Paraloid ^{®2} AT-400	C	C	
Alkyd (Long Oil)	Duramac ^{™3} 50-5060	SI	I	
	(Medium Oil)	Duramac ^{™3} 204-2768	C	C
	(Short Oil)	Duramac ^{™3} 57-5720	C	C
	(Oil-Free)	Polymac ^{™3} 57-5776	C	SI
Silicone	DOWSIL [™] RSN-0805 Resin	C	C	
	DOWSIL [™] RSN-0806 Resin	C	C	
	DOWSIL [™] RSN-0808 Resin	C	C	
	DOWSIL [™] RSN-0840 Resin	C	C	
	DOWSIL [™] RSN-0431 HS Resin	C	C	
	DOWSIL [™] RSN-0233 Flake Resin	C	C	

¹As determined by dry film on glass slides. This is meant to be representative only; the possible combinations of silicone and organic resins are unlimited. Actual compatibility will depend on formulation variables.

²Paraloid is a registered trademark of The Dow Chemical Company.

³Duramac and Polymac are trademarks of Resolution Specialty Materials, LLC.

Key: C-Compatible; SI-Slightly incompatible; I-Incompatible

to resin solution stability, viscosity and paint properties.

HANDLING

PRECAUTIONS

PRODUCT SAFETY

INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED IN THIS DOCUMENT. BEFORE HANDLING, READ PRODUCT AND SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION. THE SAFETY DATA SHEET IS AVAILABLE ON THE DOW WEBSITE AT WWW.CONSUMER.DOW.COM,

OR FROM YOUR DOW SALES APPLICATION ENGINEER, OR DISTRIBUTOR, OR BY CALLING DOW CUSTOMER SERVICE.

USABLE LIFE AND STORAGE

When stored at 25°C (77°F) in the original unopened container, this product has a usable life of 24 months from the date of production.

Opened containers should be tightly closed after use to prevent contaminants and water vapor from entering the product. Maximum storage temperature should be maintained at or below 25°C (77°F).

UNRESTRICTED – May be shared with anyone

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DOWSIL[™] RSN-6018 Resin Intermediate

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LIMITATIONS

This product is neither tested nor represented as suitable for medical or pharmaceutical uses.

HEALTH AND ENVIRONMENTAL INFORMATION

To support customers in their product safety needs, Dow has an extensive Product Stewardship organization and a team of product safety and regulatory compliance specialists available in each area.

For further information, please see our website, www.comsumer.dow.com or consult your local Dow representative.

LIMITED WARRANTY INFORMATION – PLEASE READ CAREFULLY

The information contained herein is offered in good faith and is believed to be accurate. However, because conditions and methods of use of our products are beyond our control, this information should not be used in substitution for customer's tests to ensure that our products are safe, effective, and fully satisfactory for the intended end use. Suggestions of use shall not be taken as inducements to infringe any patent.

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