PerformaSil® 100

SILICONE WATER-BASED ELASTOMER

FORMULATION GUIDE

Description

PerformaSil® 100 Silicone Water-Based Elastomer is a 1K water-borne, self-crosslinking silicone rubber latex which can be used in the formulation of ambient-cure or bake coatings like waterproofing, protective, anti-graffiti, elastomeric, air and weather barriers, and paint. It exhibits excellent adhesion to a wide range of substrates such as stone, masonry, concrete, metals, and natural textiles.

PerformaSil® 100 SWBE cures to form an elastomeric film which exhibits outstanding weather, water and solvent resistance making it an excellent candidate for exterior coatings in harsh weather conditions, to improve UV resistance, flexibility, and water resistance.

PerformaSil® 100 SWBE can be diluted or used as the sole binder in formulations.

$$SiOH + HOR \rightarrow SiOR + H_2O$$

Considerations

Typical dosages of PerformaSil® 100 SWBE are between 25% and 92% when used as a sole binder in water-borne formulations to improve weatherability, flexibility, and water resistance.

As with any product, use of PerformaSil® 100 Silicone Water-Based Elastomer in a given application must be tested (including but not limited to field testing) in advance by the user to determine suitability.

Typical Properties

Property	Value	Unit of Measure	Test Method
Appearance	White Liquid		
Specific Gravity	1.01		
pH	10 -12		
Viscosity	100 - 200	cPs	ASTM D2196
Non-Volatile Content	45 - 48	%	ASTM D2369
Volatile Organic Content (VOC)	<25	g/L	EPA Method 24
Tensile Strength	3.5	MPa	ASTM D412
	500	PSI	
Elongation	500	%	ASTM D412
Durometer	45	Shore A	ASTM D2240
Water Vapor Permeance	1120	Ng/(Pa•s•m2)	ASTM E96
	20	US Perm	
Water Vapor Transmission	5.8	g/(h•m2)	ASTM E96
Air Permeance	<0.001	L/(s•m2)	ASTM E2178
	<0.0002	cfm/ft2	75 Pa air pressure

White Elastomeric Silicone Coating

100% Silicone

Pounds	Gallons	% Weight	Raw Material	Supplier	Instructions
802.41	**94.12**	**91.98**	**PerformaSil® 100**	**ICD**	Add in order with agitation
40.12	2.32	4.59	NovoColor® IP 8500	EPS*	
1.2	0.14	0.14	TEGO® Foamex 812	Evonik*	Allow to de-air prior to thickening
40.12	2.32	4.59	Water		Premix and add slowly with agitation
1.2	0.14	0.14	Natrosol™ Plus 330 PA	Ashland*	Mix for 45 min. before proceeding
1.2	0.14	0.14	Water		Premix and add slowly with agitation
1.2	0.14	0.14	Rheolate® 465	Elementis*	
872.37	**100**	**100**	**Total**		

Formulation Parameters	
Weight Solids	46.5%
Volume Solids	43.8%
VOC Level	22 g/L
Weight/Gallon	8.72 lb/gal

*Other defoamers, rheological agents, and thickeners can be used, for compatibility guidnance please contact ICD

Note:
- High porous substrates may require an actual coating rather than a penetrating sealer.

Penetrating Sealer and Water Repellent

100% Silicone

Pounds	Gallons	% Weight	Raw Material	Supplier	Instructions
280.15	**32.86**	**33.33**	**PerformaSil® 100**	**ICD**	Add in order with agitation
560.30	67.14	66.67	Water		
840.45	**100**	**100**	**Total**		

Formulation Parameters	
Weight Solids	15.4%
Volume Solids	14.7%
VOC Level	22 g/L
Weight/Gallon	8.40 lb/gal

Notes:
- PerformaSil® 100 SWBE is dilution stable down to 0.5%.
- Substrate density/porosity variances will determine the optimal percent of solids used.
- Various levels of solids should be tested on substrate to obtain optimal water-repellency and appearance.

Penetrating Sealer and Concrete Densifier

100% Silicone

Pounds	Gallons	% Weight	Raw Material	Supplier	Instructions
216.2	**25.36**	**25.00**	**PerformaSil® 100**	**ICD**	Add in order with agitation
389.17	46.63	45.00	Water		
259.44	28.01	30.00	Nalco 1115	Ecolab*	Add slowly with agitation
864.81	**100**	**100**	**Total**		

Formulation Parameters	
Weight Solids	16.0%
Volume Solids	12.9%
VOC Level	17 g/L
Weight/Gallon	8.65 lb/gal

*Other densifying agents can be used, for compatibility guidnance please contact ICD

Note:
- Final solution pH should remain at or above 10.5 pH for stability with PerformaSil® 100 SWBE.

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