



Shin-Etsu silicone

Silicones for Wind Power Applications



Silicones for Wind Power Applications

Wind power is an unlimited source of natural, clean energy, and wind farms are sprouting up all over the world. Wind turbine systems are used in tough environments, making high reliability a must. Silicones are advanced functional materials that are designed for use in a variety of applications.



Blades & Tower sections

- Durability improvement for composite materials
- High weatherability coatings
- Adhesion & sealing

Generators & auxiliary systems

- Heat dissipation for generator components
- Lubrication of rotating machinery and other parts
- Adhesion, sealing & coating
- Electrical insulation, protection & covering of connection cables

Transformers

- Transformer oil

■Silicone products (representative) used in wind power applications: Product types & features

	Application example	Product category	Product name	Features
Blades & tower section	Improving strength of propeller. Improving durability of propeller	Silane coupling agent, alkoxy oligomer	KBM-403	For FRP
			X-41-1053	
	Resin for exterior paint for tower High weatherability coatings		KC-89S, KR-500	Additive for acrylic paints & urethane paints
			KR-9218, KR-213	
			X-41-1053	
	Adhesion & sealing of tower components, internal and external		Sealant	SEALANT-N
SEALANT-72		For plastics		
SEALANT-FC-127		Rapid-cure sealing (for construction at factory). Can also be used for temporary fixation of machinery.		
Generators & auxiliary systems	Lubrication	Grease	G-30 Series	Low-temp. lubrication (-60 °C to 180 °C)
			G-40 Series	High-temp. lubrication (-30 °C to 200 °C)
			G-420	High-temp. lubrication (-30 °C to 250 °C)
	Thermal interface materials	Fluid compound (grease)	G-747	General purpose. Thermal conductivity: 0.9W/m·k
			G-775	Less pump-out, and oil separation. Thermal conductivity: 3.6W/m·k
			G-777	High-temperature resistant. Thermal conductivity: 3.1W/m·k
		One-component RTV rubber	KE-3493	Condensation cure type. Thermal conductivity: 1.6W/m·k
			KE-1867	Addition cure type. Thermal conductivity: 2.2W/m·k
		For electrical insulation, protection & covering	Heat-shrinkable rubber tubing	ST-DG Series
	For adhesion, sealing & coating of electric and electronic components	One-component RTV rubber (Condensation cure type)	KE-4895	Low viscosity, reduced low-molecular-weight siloxane
			KE-4896	Medium viscosity, reduced low-molecular-weight siloxane
			KE-3490	Paste consistency, reduced low-molecular-weight siloxane, UL94 V-0 certified
	General purpose adhesion, sealing & coating	One-component RTV rubber (Condensation cure type)	KE-45	Paste consistency
KE-445			Low viscosity	
Transformer oil	For electrical insulation	Fluid	KF-96AE-20cs	Designed for use in transformers, this insulating oil is highly safe and offers excellent fire-resistance and electrical properties. (Meets JIS-C-2320, revised June 2010)
			KF-96AE-50cs	

*Shin-Etsu customers have used our silicone materials to develop products including high-electrical-resistance stone (paving stone for electrical substations) and fire-resistant cables (ECO cable). If you have an interest in these or other related products, please contact Shin-Etsu so we can tell you more about them and their manufacturers.

Silicone Division, New market Development Department

6-1, Ohtemachi 2-chome, Chiyoda-ku, Tokyo, Japan

Phone : +81-(0)3-3246-5134 Fax : +81-(0)3-3246-5361

Shin-Etsu Silicones Europe B.V.

Bolderweg 32, 1332 AV, Almere, The Netherlands

Phone : +31-(0)36-5493170 Fax : +31-(0)36-5326459

Shin-Etsu Silicone Taiwan Co., Ltd.

Hung Kuo Bldg. 11F-D, No. 167, Tun Hua N. Rd.,

Taipei, 10549 Taiwan, R.O.C.

Phone : +886-(0)2-2715-0055 Fax : +886-(0)2-2715-0066

Shin-Etsu Silicone Korea Co., Ltd.

Danam Bldg., 9F, 120, Namdaemunno5(o)-ga,

Jung-gu, Seoul 100-704, Korea

Phone : +82-(0)2-775-9691 Fax : +82-(0)2-775-9690

Shin-Etsu Singapore Pte. Ltd.

4 Shenton Way, #10-03/06, SGX Centre II,

Singapore 068807

Phone : +65-6743-7277 Fax : +65-6743-7477

Shin-Etsu Silicones (Thailand) Ltd.

7th Floor, Harindhorn Tower, 54 North Sathorn Road,
Bangkok 10500, Thailand

Phone : +66-(0)2-632-2941 Fax : +66-(0)2-632-2945

Shin-Etsu Silicone International Trading (Shanghai) Co., Ltd.

29F Junyao International Plaza, No.789,

Zhao Jia Bang Road, Shanghai

Phone : +86-(0)21-6443-5550 Fax : +86-(0)21-6443-5868

- The data and information presented in this catalog may not be relied upon to represent standard values. Shin-Etsu reserves the right to change such data and information, in whole or in part, in this catalog, including product performance standards and specifications without notice.
- Users are solely responsible for making preliminary tests to determine the suitability of products for their intended use. Statements concerning possible or suggested uses made herein may not be relied upon, or be construed, as a guaranty of no patent infringement.
- The silicone products described herein have been designed, manufactured and developed solely for general industrial use only; such silicone products are not designed for, intended for use as, or suitable for, medical, surgical or other particular purposes. Users have the sole responsibility and obligation to determine the suitability of the silicone products described herein for any application, to make preliminary tests, and to confirm the safety of such products for their use.
- Users must never use the silicone products described herein for the purpose of implantation into the human body and/or injection into humans.
- Users are solely responsible for exporting or importing the silicone products described herein, and complying with all applicable laws, regulations, and rules relating to the use of such products. Shin-Etsu recommends checking each pertinent country's laws, regulations, and rules in advance, when exporting or importing, and before using the products.
- Please contact Shin-Etsu before reproducing any part of this catalog.
Copyright belongs to Shin-Etsu Chemical Co., Ltd.



The Development and Manufacture of Shin-Etsu Silicones are based on the following registered international quality and environmental management standards.

Gunma Complex ISO 9001 ISO 14001
(JQA-0004 JQA-E-0002)

Naetsu Plant ISO 9001 ISO 14001
(JQA-0018 JQA-E-0064)

Takefu Plant ISO 9001 ISO 14001
(JQA-0479 JQA-EM0298)

<http://www.silicone.jp/>