

# Dow Corning (Zhangjiagang) Holding Company Limited

## Material Safety Data Sheet

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Last Revision Date: 2014/06/29

Version No.: GHS 2.2

This SDS has been prepared according to GB/T 16483 and GB/T 17519.

### DOW CORNING(R) 991 SILICONE HI-PERFORMANCE SEALANT GREY

#### 1. IDENTIFICATION OF THE PRODUCT AND OF THE COMPANY

<b>1.1 Product Name:</b>	DOW CORNING(R) 991 SILICONE HI-PERFORMANCE SEALANT GREY
<b>1.2 Product Code:</b>	02978300
<b>1.3 Chemical Classification:</b>	Silicone Sealant
<b>1.4 Recommended Product Usage and Limited Use:</b>	Sealant Sealant and adhesive
<b>1.5 Company Details</b>	
<b>Manufacturer/Supplier:</b>	Dow Corning (Zhangjiagang) Holding Company Limited
<b>Address:</b>	18 Beihai Road, Yangtze River International Chemical Industry Park, Zhangjiagang, Jiangsu Province, P.R.C., Postal Code: 215634
<b>Telephone Number:</b>	400 880 7110
<b>Email Address:</b>	China.info@dowcorning.com
<b>Emergency Telephone Number:</b>	(86 512) 56732049
<b>1.6 First Issuing Date:</b>	2010/01/21

#### 2. HAZARD IDENTIFICATION

##### Emergency Overview:

<b>Physical Form:</b>	Paste
<b>Color:</b>	Gray
<b>Odor:</b>	Characteristic odor

Causes serious eye irritation. May cause an allergic skin reaction.

**2.1 Hazard Classification:** Serious eye damage/eye irritation: Category 2A  
Skin sensitization: Category 1

##### 2.2 Label Elements Including Precautionary Statements

**Symbol:**



**Signal Word:** Warning

**Hazard Risk Statement:** Causes serious eye irritation.  
May cause an allergic skin reaction.

**Precautionary Statement:** Avoid breathing dust/fume/gas/mist/vapours/spray.  
Wear suitable protective clothing, gloves and eye/face protection.  
Contaminated work clothing should not be allowed out of the workplace.  
Wash hands thoroughly after handling.  
Use only outdoors or in a well-ventilated area.

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IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 IF ON SKIN: Wash with plenty of soap and water.  
 If eye irritation persists, get medical advice/attention.  
 If skin irritation or rash occurs: Get medical advice/attention.  
 Wash contaminated clothing before reuse.  
 Dispose of in accordance with local regulations.

<b>2.3 Physical-chemical Hazards:</b>	None.
<b>2.4 Health Hazards:</b>	Causes serious eye irritation. May cause an allergic skin reaction.
<b>2.5 Environmental Hazards:</b>	Acute: No adverse effects on aquatic organisms are predicted. Chronic: No adverse effects on aquatic organisms are predicted.
<b>2.6 Other Hazard:</b>	None known.

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

**3.1 Chemical characterization:** Mixture

**3.2 Hazardous Ingredients**

<u>Chemical Name</u>	<u>CAS No.</u>	<u>% (w/w)</u>
Methyl tri(ethylmethylketoxime) silane	22984-54-9	<10
Titanium dioxide	13463-67-7	<10
Vinyltri (methylethylketoxime) silane	2224-33-1	<1
Aminoethylaminopropyltrimethoxysilane	1760-24-3	<1
Dimethyl bis(N-ethylacetamido) silane	79728-78-2	<1
Methylethylketoxime	96-29-7	<1

### 4. FIRST AID MEASURES

**4.1 First Aid Measures**

**Eyes:** Immediately flush with water for 15 minutes. Get medical attention.  
**Skin:** Remove from skin and immediately flush with water for 15 minutes. Get medical attention if irritation or ill effects develop or persist.  
**Inhalation:** Remove to fresh air. Get medical attention if ill effects persist.  
**Oral:** Get medical attention.  
**Comments:** Treat according to person's condition and specifics of exposure.

**4.2 Important Symptoms and Hazard Effects:** Causes serious eye irritation. May cause an allergic skin reaction.

**4.3 Personal Protection for First Aid or Rescue Personnel**

**Respiratory Protection:** Use self-contained breathing apparatus (SCBA) or other supplied-air respirator.  
**Eye Protection:** Use full face respirator.

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**Skin Protection:** Wash at mealtime and end of shift. If skin contact occurs, change contaminated clothing as soon as possible and thoroughly flush affected areas with cool water. Chemical protective gloves are recommended.

**4.4 Note to physicians:** Treat symptomatically. For further information, the medical practitioner should contact Dow Corning (China) Holding Company Limited.

### 5. FIRE-FIGHTING MEASURES

- 5.1 Suitable Extinguishing Media:** On large fires use dry chemical or foam. On small fires use CO<sub>2</sub> or dry chemical. Water can be used to cool fire exposed containers.
- 5.2 Unsuitable Extinguishing Media:** Water. Do not allow extinguishing medium to contact container contents.
- 5.3 Specific Hazards:** None.
- 5.4 Special Fire Fighting Procedures:** Determine the need to evacuate or isolate the area according to your local emergency plan. Use water spray to keep fire exposed containers cool.
- 5.5 Special protective equipment for the Fire Fighters:** Self-contained breathing apparatus and protective clothing should be worn in fighting large fires involving chemicals.

### 6. ACCIDENTAL RELEASE MEASURES

- 6.1 Personal Precautions:** Avoid skin and eye contact. Do not breathe vapour. Do not take internally.
- 6.2 Environmental Precautions:** Do not allow large quantities to enter drains or surface waters.
- 6.3 Methods for Cleaning up:** Observe all personal protective equipment recommendations described in this MSDS. If diked material can be pumped, store recovered material in appropriate container. Wipe up or scrape up and contain for salvage or disposal. Clean area as appropriate since spilled materials, even in small quantities, may present a slip hazard. Final cleaning may require use of steam, solvents or detergents. Dispose of saturated absorbent or cleaning materials appropriately, since spontaneous heating may occur. Laws and regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which laws and regulations are applicable.

### 7. HANDLING AND STORAGE

- 7.1 Handling Precautions:** Use with adequate ventilation. Product evolves methyl ethyl ketoxime (MEKO) when exposed to water or humid air. Provide ventilation during use to control methyl ethyl ketoxime (MEKO) within exposure guidelines or use respiratory protection. Avoid skin and eye contact. Do not breathe vapour. Do not take internally. Remove contaminated

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		clothing immediately. Exercise good industrial hygiene practice. Wash after handling, especially before eating, drinking or smoking.
<b>7.2 Storage Conditions:</b>		Use reasonable care and store away from oxidizing materials. Keep container closed and store away from water or moisture.
<b>7.3 Unsuitable Packaging Materials:</b>		None established.

### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

#### 8.1 Industrial Hygiene Standards:

<u>Ingredients</u>	<u>CAS No.</u>	<u>Exposure Limits</u>
Methyl tri(ethylmethylketoxime) silane	22984-54-9	See ethyl methyl ketoxime comments.
Titanium dioxide	13463-67-7	China: TWA 8 mg/m <sup>3</sup> Total dust. Observe titanium dioxide limits. OSHA PEL (final rule): TWA 15 mg/m <sup>3</sup> and ACGIH TLV: TWA 10 mg/m <sup>3</sup> .
Vinyltri (methylethylketoxime) silane	2224-33-1	See ethyl methyl ketoxime comments.
Aminoethylaminopropyltrimethoxysilane	1760-24-3	See methyl alcohol comments.
Dimethyl bis(N-ethylacetamido) silane	79728-78-2	None established.
Methylethylketoxime	96-29-7	Vendor guide: TWA 3 ppm, STEL 10 ppm.

Ethyl methyl ketoxime is formed upon contact with water or humid air. Provide adequate ventilation to control exposures within the following exposure guidelines: Vendor guide TWA: 3 ppm, STEL: 10 ppm. Methyl alcohol forms on contact with water or humid air. Provide adequate ventilation to control exposures within guidelines of OSHA PEL: TWA 200 ppm and ACGIH TLV-skin: TWA 200 ppm, STEL 250 ppm.

#### 8.2 Engineering Controls

<b>Local Ventilation:</b>	Recommended.
<b>General Ventilation:</b>	Recommended.

#### 8.3 Personal Protective Equipment for Routine Handling

<b>Respiratory protection:</b>	Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines. IH personnel can assist in judging the adequacy of existing engineering controls.
<b>Suitable Respirator:</b>	Organic Vapor Type.
<b>Eye protection:</b>	Use proper protection - safety glasses as a minimum.
<b>Hand protection:</b>	Chemical protective gloves should be worn.
<b>Skin protection:</b>	Wash at mealtime and end of shift. If skin contact occurs, change contaminated clothing as soon as possible and thoroughly flush affected areas with cool water. Chemical protective gloves are recommended.
<b>Hygiene Measures:</b>	Remove contaminated clothing immediately. Exercise good industrial hygiene practice. Wash after handling, especially before eating, drinking or smoking.

#### 8.4 Personal Protective Equipment for Spills

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<b>Respiratory protection:</b>	Use self-contained breathing apparatus (SCBA) or other supplied-air respirator.
<b>Eye protection:</b>	Use full face respirator.
<b>Skin protection:</b>	Wash at mealtime and end of shift. If skin contact occurs, change contaminated clothing as soon as possible and thoroughly flush affected areas with cool water. Chemical protective gloves are recommended.
<b>Precautionary Measures:</b>	Avoid skin and eye contact. Do not breathe vapour. Do not take internally. Use reasonable care.
<b>Comments:</b>	Product evolves methyl ethyl ketoxime (MEKO) when exposed to water or humid air. Provide ventilation during use to control methyl ethyl ketoxime (MEKO) within exposure guidelines or use respiratory protection. Product evolves flammable methyl alcohol when exposed to water or humid air. Provide ventilation during use to control methyl alcohol exposures within exposure guidelines or use air-supplied or self-contained breathing apparatus.

*Note: These precautions are for room temperature handling. Use at elevated temperature or aerosol/spray applications may require added precautions.*

### 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>9.1 Physical Form:</b>	Paste
<b>9.2 Color:</b>	Gray
<b>9.3 Odor:</b>	Characteristic odor
<b>9.4 pH:</b>	Not determined.
<b>9.5 Melting Point:</b>	Not determined.
<b>9.6 Boiling point/range:</b>	Not determined.
<b>9.7 Flash Point:</b>	Not applicable.
<b>9.8 Explosive Limit:</b>	Not determined.
<b>9.9 Vapor Pressure @ 25°C:</b>	Not determined.
<b>9.10 Vapour Density (air=1):</b>	Not determined.
<b>9.11 Specific Gravity:</b>	1.31 g/cm <sup>3</sup>
<b>9.12 Water Solubility:</b>	Not determined.
<b>9.13 Partition Coefficient (n-Octanol/Water):</b>	Not determined.
<b>9.14 Autoignition temperature:</b>	Not determined.
<b>9.15 Decomposition Temperature :</b>	Not determined.
<b>9.16 Odor Threshold:</b>	Not determined.
<b>9.17 Evaporation Rate:</b>	Not determined.
<b>9.18 Flammability (Solid, Gas):</b>	Not applicable.

*The above information is not intended for use in preparing product specifications. Contact Dow Corning before writing specifications.*

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### 10. STABILITY AND REACTIVITY

<b>10.1 Stability:</b>	Stable.
<b>10.2 Possibility of Hazardous Reactions:</b>	Hazardous polymerization will not occur.
<b>10.3 Conditions to Avoid:</b>	None.
<b>10.4 Materials to Avoid:</b>	Can react with strong oxidising agents. Water, moisture or humid air can cause hazardous vapors to form.
<b>10.5 Hazardous Decomposition Products:</b>	Carbon oxides and traces of incompletely burned carbon compounds. Silicon dioxide. Formaldehyde. Metal oxides. Nitrogen oxides.

### 11. TOXICOLOGICAL INFORMATION

<b>11.1 Route of Exposure:</b>	Skin contact and accidental ingestion.			
<b>11.2 Signs and Symptoms of Overexposure:</b>	Causes serious eye irritation. May cause an allergic skin reaction.			
<b>11.3 Acute Toxicity:</b>				
<u>Chemical Name</u>	<u>CAS No.</u>	<u>LD50 (Oral)</u>	<u>LD50 (Dermal)</u>	<u>LC50 (Inhalation)</u>
Methyl tri(ethylmethylketoxime) silane	22984-54-9	> 2,520 mg/kg (Rat)	-	-
Titanium dioxide	13463-67-7	> 10,000 mg/kg (Rat)	> 10,000 mg/kg (Rabbit)	-
Vinyltri (methylethylketoxime) silane	2224-33-1	> 2,000 mg/kg (Rat)	> 2,000 mg/kg (Rat)	-
Aminoethylaminopropyltrimethoxy silane	1760-24-3	2,295 mg/kg (Rat)	> 2,000 mg/kg (Rabbit)	> 1.49 mg/l (Rat; 4hr dust/mist)
Dimethyl bis(N-ethylacetamido) silane	79728-78-2	1,655 mg/kg (Rat)	> 2,000 mg/kg (Rabbit)	-
Methylethylketoxime	96-29-7	2,326 mg/kg (Rat)	> 1,000 - 1,800 mg/kg (Rabbit)	-
<b>Eyes:</b>	Direct contact may cause severe irritation.			
<b>Skin:</b>	Repeated skin contact may cause allergic skin reaction.			
<b>Ingestion:</b>	Low ingestion hazard in normal use.			
<b>Inhalation:</b>	Irritates respiratory passages very slightly. Vapours evolved during curing may cause dizziness.			
<b>11.4 Chronic Toxicity</b>				
<b>Skin:</b>	Repeated or prolonged exposure may cause irritation.			
<b>Ingestion:</b>	Repeated ingestion or swallowing large amounts may injure internally.			
<b>Inhalation:</b>	Prolonged or repeated exposure by inhalation may injure internally.			

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- 11.5 Other Health Hazard Information:** This product contains (a) powder(s) hazardous by inhalation. This is not relevant to the current physical form of the product, which is not in a respirable form. During use of the material, small amounts of methylethylketoxime (MEKO) will be released. Long-term or repeated exposure to high concentrations of oxime-silanes may cause narcotic type effects on the nervous system, harmful effects on the blood (anemia) and irritate nasal passages, but these effects are reversible and not considered serious. Rodents exposed to chronic MEKO inhalation throughout their lifetimes showed significant increases in liver tumor rates.

*The above listed potential effects of overexposure are based on actual data, the results of studies performed upon similar compositions, component data, and/or expert review of the products.*

### 12. ECOLOGICAL INFORMATION

#### 12.1 Aquatic and Terrestrial Ecotoxicity

**Ecotoxicity Effects:**

**Acute:** No adverse effects on aquatic organisms are predicted.

**Chronic:** No adverse effects on aquatic organisms are predicted.

**Fate and Effects in Waste Water Treatment Plants:** No adverse effects on bacteria are predicted.

#### 12.2 Persistence and Degradability

**Water:** Solid material, insoluble in water.

#### 12.3 Bioaccumulative Potential

**Bioaccumulation:** No bioaccumulation potential.

#### 12.4 Mobility in Soil:

This product is a solid and does not contain significant concentrations of water soluble constituents that may be leached from the product. It is therefore not likely to present a danger to terrestrial organisms.

#### 12.5 Additional Environmental Information:

No specific information is available.

### 13. DISPOSAL CONSIDERATIONS

- 13.1 Product Disposal:** Dispose of in accordance with local regulations.
- 13.2 Packaging Disposal:** Dispose of in accordance with local regulations.

### 14. TRANSPORT INFORMATION

#### 14.1 Road and Rail Transport

Not applicable.

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**14.2 Sea Transport (IMDG)**

Not subject to IMDG code.

**14.3 Air Transport (IATA)**

Not subject to IATA regulations.

**14.4 Special Requirements and Additional Information :** None.**15. REGULATORY INFORMATION**

**15.1 Applicable Laws:** Provisions of the Regulations for the Safe Handling of Chemicals in the Workplace  
General rule for classification and hazard communication of chemicals

**15.2 Chemical Inventories**

**AICS:** All ingredients listed or exempt.  
**IECSC:** All ingredients listed or exempt.  
**KECL:** All ingredients listed, exempt or notified.  
**HSNO:** All ingredients listed or exempt.  
**PICCS:** All ingredients listed or exempt.  
**EINECS:** All ingredients listed or exempt.  
**TSCA:** Not determined.  
**ENCS/ISHL:** Not determined.  
**DSL:** Not determined.

**16. OTHER INFORMATION**

**16.1 Contact Point:** Technical Information Center 400 880 7110

**16.2 Prepared by:** Dow Corning (Zhangjiagang) Holding Company Limited

**Legend:**

- No specific information available

This information is offered in good faith as typical values and not as a product specification. No warranty, expressed or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate.

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