

DOW CORNING(R) SE 4485

[This MSDS is prepared pursuant to the provision of Article 41 of the Industrial Safety and Health Law]

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY

1.1	Product Name:	DOW CORNING(R) SE 4485
1.2	Manufacturer's Product Code:	04028948
1.3	Chemical Classification:	Silicone Sealant
1.4	Recommended Product Usage and Limited Use:	Sealant and adhesive
1.5	Company Details:	
	Manufacturer/Supplier:	Dow Corning Korea Ltd.
	Address:	24 Gwanghyewon Sandan-Gil, Gwanghyewon-Myeon, Jincheon-Gun, Chungcheongbuk-Do, Korea
	Telephone Number:	043-539-1114
	Emergency Telephone Number:	043-539-1129

2. HAZARD IDENTIFICATION

2.1	Hazard Classification:	Not hazardous.
		*This material is classified as 'Not Hazardous' under the Industrial Safety and Health Law(ISHL). Therefore, it is not regulated for MSDS creating and labeling by the provision of Article 41 of the ISHL.
2.2	Label Elements Including Precautionary Statements:	
	Symbol:	Not applicable.
	Signal Word:	Not applicable.
	Hazard Risk Statement:	Not hazardous.
	Precautionary Statement:	
	Prevention:	Avoid contact with skin and eyes.
	Response:	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.
	Storage:	Not applicable.
	Disposal:	Not applicable.
2.3	Other Hazard. Risk which are not included in the classification criteria:	None known.

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3. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Chemical Name</u>	<u>Common Name or Synonym</u>	<u>CAS No.</u>	<u>% (w/w)</u>	<u>GHS Classification</u>
Aluminum oxide	-	1344-28-1	80 - <85	Not hazardous.
Alumina hydrate	-	21645-51-2	10 - <15	Not hazardous.

Other ingredients not listed in this section are non-hazardous or business confidential.

4. FIRST AID MEASURES

- 4.1 If in Eyes:** Immediately flush with water.
- 4.2 If on Skin:** Wash off with soap and water.
- 4.3 If Inhaled:** No first aid should be needed.
- 4.4 If Ingested:** Get medical attention.
- 4.5 Other Note to physicians:** Treat symptomatically.
Treat symptomatically. For further information, the medical practitioner should contact Dow Corning Korea Ltd.

5. FIRE-FIGHTING MEASURES

5.1 Suitable (and Unsuitable) Extinguishing Media:

Suitable: On large fires use dry chemical, foam or water spray. On small fires use carbon dioxide (CO₂), dry chemical or water spray. Water can be used to cool fire exposed containers.

Unsuitable: None established.

- 5.2 Specific Hazards Arising from the Chemical(e.g. nature of any Hazardous Combustion Products):** Metal oxides. Carbon oxides and traces of incompletely burned carbon compounds. Silicon dioxide. Formaldehyde.

- 5.3 Special Protective Equipment and Precautions for Fire-Fighters:** Determine the need to evacuate or isolate the area according to your local emergency plan. Use water spray to keep fire exposed containers cool. Self-contained breathing apparatus and protective clothing should be worn in fighting large fires involving chemicals.

6. ACCIDENTAL RELEASE MEASURES

- 6.1 Personal Precautions and Protective Equipment:** Avoid skin and eye contact. Do not take internally.

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- 6.2 Environmental Precautions:** Prevent from spreading or entering into drains, ditches or rivers by using sand, earth or other appropriate barriers.
- 6.3 Methods for Cleaning up:** Determine whether to evacuate or isolate the area according to your local emergency plan. Observe all personal protective equipment recommendations described in this MSDS. If diked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbant. 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 absorbant 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. Avoid skin and eye contact. Do not take internally. Exercise good industrial hygiene practice. Wash after handling, especially before eating, drinking or smoking.
- 7.2 Storage Conditions (including any incompatibilities):** Use reasonable care and store away from oxidizing materials.

8. PREVENTIVE MEASURES/PERSONAL PROTECTIVE EQUIPMENT

8.1 Occupational Exposure Limit Values, Biological Limit Values:

Industrial Hygiene Standards:

<u>Ingredients</u>	<u>CAS No.</u>	<u>Exposure Limits</u>
Aluminum oxide	1344-28-1	Korea OEL: TWA 10 mg/m ³ . OSHA PEL (final rule) and ACGIH TLV: TWA 10 mg/m ³ total dust. OSHA PEL: TWA 5 mg/m ³ respirable fraction.
Alumina hydrate	21645-51-2	Observe aluminum oxide limits. OSHA PEL (final rule): TWA 15 mg/m ³ total dust, 5 mg/m ³ respirable fraction. ACGIH TWA 10 mg/m ³ .

8.2 Engineering Controls:

Local Ventilation: None should be needed.

General Ventilation: Recommended.

8.3 Personal Protective Equipment:

Routine Handling:

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Respiratory protection:	No respiratory protection should be needed.
Suitable Respirator:	None should be needed.
Eye protection:	Use proper protection - safety glasses as a minimum.
Hand protection:	Chemical protective gloves should be worn if sensitive skin is a problem or for prolonged contact.
Skin protection:	Washing at mealtime and end of shift is adequate.
Hygiene Measures:	Exercise good industrial hygiene practice. Wash after handling, especially before eating, drinking or smoking.
Spills:	
Respiratory protection:	No respiratory protection should be needed.
Eye protection:	Use proper protection - safety glasses as a minimum.
Skin protection:	Washing at mealtime and end of shift is adequate.
Precautionary Measures:	Avoid skin and eye contact. Do not take internally. Use reasonable care.
Comments:	If this product is heated to > 150 degrees C, trace quantities of formaldehyde may be released, and adequate ventilation is required.

Note: These precautions are for room temperature handling. Use at elevated temperature or aerosol/spray applications may require added precautions. For further information regarding aerosol inhalation toxicity, please refer to the guidance document regarding the use of silicone-based materials in aerosol applications that has been developed by the silicone industry (www.SEHSC.com) or contact the Dow Corning customer service group.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Appearance(physical state, colour etc):	Viscous Liquid White
9.2 Odour:	Slight odor
9.3 Odour Threshold:	Not determined.
9.4 pH:	Not determined.
9.5 Melting Point/ Freezing Point:	Not determined.
9.6 Initial Boiling Point and Boiling Range:	> 100 °C
9.7 Flash Point:	> 100 °C (Cleveland Open Cup)
9.8 Evaporation Rate:	Not determined.
9.9 Flammability (solid, gas):	Not applicable.
9.10 Upper/ Lower Flammability or Explosive Limit:	
Upper Limit:	Not determined.
Lower Limit:	Not determined.
9.11 Vapor Pressure @ 25°C:	Not determined.
9.12 Solubility in Water:	Not determined.
9.13 Vapour Density (air=1):	Not determined.
9.14 Specific Gravity:	3

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9.15	Octanol/water partition coefficient:	Not determined.
9.16	Autoignition Temperature:	Not determined.
9.17	Decomposition Temperature:	Not determined.
9.18	Viscosity:	230,000 mPa s
9.19	Molecular Weight:	Not determined.

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

10. STABILITY AND REACTIVITY

10.1	Chemical Stability and Possibility of Hazardous Reactions:	Stable. Hazardous polymerization will not occur.
10.2	Conditions to avoid:	None.
10.3	Materials to avoid:	Can react with strong oxidising agents.
10.4	Hazardous Decomposition Products:	Metal oxides. Carbon oxides and traces of incompletely burned carbon compounds. Silicon dioxide. Formaldehyde.

11. TOXICOLOGICAL INFORMATION

11.1 Information on the likely Routes of Exposure:

Respiratory:	Exposure is expected.
Oral:	Exposure is expected.
Eye, Skin:	Exposure is expected.

11.2 Information on the Health Hazards

Acute Toxicity:

<u>CAS Number</u>	<u>Component Name</u>	<u>Acute Toxicity</u>
1344-28-1	Aluminum oxide	LD50: > 5,000 mg/kg - Oral Rat
21645-51-2	Alumina hydrate	LD50: > 5,000 mg/kg - Oral Rat

Eyes: Direct contact may cause temporary redness and discomfort.

Skin: May produce an allergic reaction.

Inhalation: No significant effects expected from a single short-term exposure.

Ingestion: Low ingestion hazard in normal use.

Chronic Toxicity:

Skin: Repeated or prolonged exposure may cause irritation.

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Inhalation:	No known applicable information.
Ingestion:	Repeated ingestion or swallowing large amounts may injure internally.
Other Health Hazard Information:	No known applicable information.
Skin Corrosion/ Irritation:	Please refer to Section 3.
Serious Eye Damage/ Irritation:	Please refer to Section 3.
Respiratory Sensitization:	Please refer to Section 3.
Skin Sensitization:	Please refer to Section 3.
Carcinogenicity:	None known.
Germ Cell Mutagenicity:	Please refer to Section 3.
Reproductive Toxicity:	Please refer to Section 3.
Specific Target Organ. Systemic Toxicity (Single Exposure):	Please refer to Section 3.
Specific Target Organ. Systemic Toxicity (Repeated Exposure):	Please refer to Section 3.
Aspiration Hazard:	Please refer to Section 3.

12. EFFECTS ON THE ENVIRONMENT**12.1 Ecotoxicity:****Environmental Effects**

Acute: No adverse effects on aquatic organisms.

Chronic: No adverse effects on aquatic organisms.

12.2 Persistence and Degradability:

Degradation: In soil, siloxanes are degraded.

Environmental Fate and Distribution: Siloxanes are removed from water by sedimentation or binding to sewage sludge.

12.3 Bioaccumulative Potential:

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Bioaccumulation: No bioaccumulation potential.**12.4 Mobility in Soil:** None known.**12.5 Additional Environmental Information:****Degradation:** Additional environmental information on the silicone component is available on request.**Fate and Effects in Waste Water Treatment Plants:** No adverse effects on bacteria. Removed > 90% by binding onto sewage sludge. The siloxanes in this product do not contribute to the BOD.**13. DISPOSAL CONSIDERATIONS****13.1 Product Disposal:** Dispose of in accordance with local regulations.**13.2 Disposal precaution:** Dispose of in accordance with local regulations.**14. TRANSPORT INFORMATION****14.1 Sea transport (IMDG):**

UN No.:	Not subject to IMDG code.
Class:	Not subject to IMDG code.
Packing Group:	Not subject to IMDG code.
Proper Shipping Name:	Not subject to IMDG code.
Technical Name:	Not subject to IMDG code.
Marine Pollutant (Yes/No):	Not subject to IMDG code.
Hazard Label(s):	Not subject to IMDG code.

14.2 Transportation Precautions:

Transport in accordance with the relevant regulations. Refer to section 7.2 for further information on transportation requirements. Refer to section 6 for the safety measures to be taken in the event of accidental release.

14.3 Other International Transportation Regulations**Air Transport (IATA-DGR):**

UN No.:	Not subject to IATA regulations.
Class:	Not subject to IATA regulations.
Packing Group:	Not subject to IATA regulations.
Proper Shipping Name:	Not subject to IATA regulations.
Technical Name:	Not subject to IATA regulations.
Hazard Label(s):	Not subject to IATA regulations.

15. REGULATORY INFORMATION**15.1 Classification and labelling in accordance with Industrial Safety and Health Law:**

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Harmful Substances Prohibited from Manufacturing:

No subject chemicals

Harmful Substances Requiring Permission:

No subject chemicals

Controlled Hazardous Substances:

<u>Chemical Name</u>	<u>CAS No.</u>	<u>Limit%(w/w)</u>	<u>% (w/w)</u>	<u>Remark</u>
Aluminum oxide	1344-28-1	1 %	80 - <85	Metals
Alumina hydrate	21645-51-2	1 %	10 - <15	Metals

15.2 Chemicals controlled in accordance with Toxic Chemicals Control Act:**Toxic Chemicals:**

No subject chemicals

Observational Chemicals:

No subject chemicals

Prohibited Chemicals:

No subject chemicals

Restricted Toxic Chemicals:

No subject chemicals

Korean TRI Chemicals:

<u>Group</u>	<u>Chemical Name</u>	<u>CAS No.</u>	<u>Limit%(w/w)</u>	<u>% (w/w)</u>
Group 2.	Aluminum oxide	1344-28-1	1.0 % wt	80 - <85
Group 2.	Alumina hydrate	21645-51-2	1.0 % wt	10 - <15

Accident Release Prevention Chemicals:

No subject chemicals

15.3 Hazardous Material Safety Management Act:**Classification:** Not applicable for Korea Fire Law.**15.4 Wastes Management Act:** Product should be disposed of in accordance with Waste Management Law Article 13.**15.5 Other Local or International Regulations:**

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EINECS:	Not determined.
TSCA:	All chemical substances in this material are included on or exempted from listing on the TSCA Inventory of Chemical Substances.
IECSC:	All ingredients listed or exempt.
ENCS/ISHL:	All components are listed on ENCS/ISHL or its exempt rule.
KECL:	All ingredients listed, exempt or notified.
PICCS:	All ingredients listed or exempt.
DSL:	Not determined.
AICS:	Not determined.
HSNO:	Not determined.

16. OTHER INFORMATION

Information Source:	Dow Corning Corporation
Preparation Department:	Product Safety & Regulatory Compliance Team
First Issuing Date:	2010/05/26
Revision No:	3
Latest Revision Date:	2013/08/23
Others:	Not determined.

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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