Material Safty Data Sheet

Product	SR3920

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product Name	SR3920
1.2 Recommended use of the chemical and restrictions on use	
Recommended use of the product	Silicone sealant
Restrictions on use of the product	No data
1.3 Company information	
Company Name	DAEHEUNG CHEMICAL CO., LTD.
Address	52, Sandan-ro15beon-gil,Pyeongtaeksi,Gyeonggi-do
Emergency telephone number	+82-31-663-5251

2. HAZARD IDENTIFICATION

2.1 Hazard, Risk classification	Skin sensitization: Category 1
2.2 GHS label elements	
Symbol	

Signal word	Waring
Harmful Risk phrases	H317 May cause an allergic skin reaction.
Precautions	
Prevention	P261 In contact with water releases flammable gases. P272 May intensify fire; oxidiser. P280 Contains gas under pressure; may explode if heated.
Corresponding	P302+P352 IF ON SKIN: Wash with plenty of soap and water. P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
Storage	Not available
Disposal	P501 Dispose of contents and container in accordance with local regulations.
Amorphous, fumed silica	
Health	0
Fire	1
Reactivity	0
N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane	
Health	3
Fire	1
Reactivity	1
Trimethoxyvinylsilane	
Health	3
Fire	3
Reactivity	1
Polydimethylsiloxane	
Health	1
Fire	1
Reactivity	0
Siloxanes and Silicones, di-Me, hydroxy-terminated	
Health	1
Fire	2
Reactivity	0

3. COMPOSITION / INFORMATION ON INTEGREDIENTS

Name	Comon Name	CAS No	Contents(%)
Amorphous, fumed silica	SILICA, AMORPHOUS, FUMED, CRYSTALLINE FREE	112945-52-5	5 ~ 10
N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane	N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane	1760-24-3	0.1 ~ 1
Trimethoxyvinylsilane	SILANE, TRIMETHOXYVINYL	2768-02-7	1 ~ 5
Polydimethylsiloxane	Polydimethylsiloxane	63148-62-9	10 ~ 20
Siloxanes and Silicones, di-Me, hydroxy-terminated	DIMETHYL POLYSILOXANE	70131-67-8	70 ~ 80

4. FIRST AID MEASURES

4.1 Eye contact

Get emergency medical attention.

Rinse skin and eyes immediately with plenty of water for at least 20 minutes when in contact with the material.

4.2 In case of skin contact

If skin irritation or rash occurs, seek medical advice / advice.

Wash contaminated clothing before reuse.

Get emergency medical attention.

Remove contaminated clothing and shoes and isolate contaminated areas.

Rinse skin and eyes immediately with plenty of water for at least 20 minutes when in contact with the material.

Prevent spread of contamination on mild skin contact

4.3 Inhalation

Move to a place with fresh air.

If not breathing, give artificial respiration.

If breathing is difficult, give oxygen.

Please warm and stabilize.

4.4 Ingestion

Get emergency medical attention.

4.5 Other precautions

Have the health care worker know about the material and take protective measures

5. FIRE FIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media

Use alcohol foam, carbon dioxide or water spray for digestion related to this material.

Use dry sand or earth for digestion.

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products

Container may explode on heating

Some are burned but not easily ignited
Non-flammable, the substance itself is not burned but decomposes on heating and may cause corrosive / toxic fumes
May cause irritating, corrosive and toxic gases in case of fire

5.3.Protective equipment and precautions for fire-fighting

Protective equipment and precautions for fire-fighting

Be aware that it may be melted and transported.

In case of tank fire, extinguish at maximum distance or use unmanned fire fighting equipment

In the event of a large fire in a tank fire, use unmanned fire fighting equipment and allow it to retreat if it is not possible

Rescuers should wear appropriate protective equipment.

Extinguish the area and maintain safety distance.

Some can be transported at high temperatures

Leaky water may cause contamination.

Contact may cause skin and eye burns.

Drill ditches for the disposal of digestive waters to prevent them from being scattered.

Move container from fire area if it is not hazardous.

Cool containers with large amounts of water even after the fire has extinguished.

In the event of a tank fire, if there is a high tone in the pressure relief device or if the tank is discolored, immediately withdraw it

Tanks Fires in a fire.

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, protective equipment and emergency procedures	Remove all ignition sources as very fine particles may cause fire or explosion.
	Wipe off any spills immediately and follow all protective precautions.
	Remove all ignition sources.
	Stop the leak if it is not dangerous.
	Do not touch a damaged container or spill without adequate protection.
	Cover with plastic sheet to prevent diffusion
	Note the substances and conditions to avoid
6.2. Environmental precautions	Prevent entry into waterways, sewers, basements, and confined spaces.
6.3. Methods and material for containment and cleaning up	Absorb spillage with inert materials (eg dry sand or earth) and place in a chemical waste container.
	Absorb liquid and rinse contaminated area with detergent and water..

7. HANDLING AND STORAGE

7.1. Precautions for safe handling	Avoid inhalation.(Dust, fume, gas, mist, steam, spray)
	Do not carry contaminated clothing out of the workplace.
	Follow all MSDS / label precautions as product residues may remain after emptying containers.
	Avoid prolonged or repeated skin contact.
	Note the substances and conditions to avoid
	Refer to engineering controls and personal protective equipment.
7.2 Safe storage	The empty drum should be completely drained, properly blocked and immediately returned to the drum regulator or properly positioned.

8. EXPOSURECONTROLS & PERSONAL PROTECTION

8.1. Exposure standards for chemicals, biological exposure standards, etc.

Domestic regulation	No data
ACGIH regulation	No data
Biological exposure standard	No data

8.2 Personal protective equipment

Respiratory protection	Wear a respirator that has been approved by the Korean Occupational Safety and Health Administration in accordance with the physicochemical properties of the substance being exposed.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Appearance	
Physical Form	Flowable type
Color	Transperancy
9.2 Odor	Alcohol
9.3 Odor threshold	No data
9.4 pH	No data
9.5 Melting point / freezing point	No data
9.6 Boiling point	No data
9.7 Flash point	No data
9.8 Evaporation Rate	No data
9.9 Flammability (solid, gas)	No data
9.10 Upper/lower flammability or explosive limits	No data
9.11 Vapor Pressure	No data
9.12 Solubility	No data
9.13 Vapor Density	No data
9.14 Specific gravity	1.02
9.15 N-octanol/water partition coefficient	No data
9.16 Autoignition temperature	No data
9.17 Decomposition Temperature	No data
9.18 Viscosity	Flowable type
9.19 Molecular weight	No data

10. STABILITY AND REACTIVITY

10.1 Possibility of chemical stability and adverse reaction

Amorphous, fumed silica	Container may explode on heating
Amorphous, fumed silica	Some are burned but not easily ignited
Amorphous, fumed silica	Non-flammable, the substance itself is not burned but decomposes on heating and may cause corrosive / toxic fumes
Amorphous, fumed silica	May cause irritating, corrosive and toxic gases in case of fire
N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane	No data
Trimethoxyvinylsilane	Flammable liquids and vapors
Trimethoxyvinylsilane	Violent reaction may cause fire and explosion.
Trimethoxyvinylsilane	May form explosive mixture at or above flash point
Trimethoxyvinylsilane	Container may explode on heating
Trimethoxyvinylsilane	Highly flammable: easily ignited by heat, spark, flame
Trimethoxyvinylsilane	Leakage is a fire / explosion hazard.
Trimethoxyvinylsilane	Vapors may explode indoors, outdoors, and in drains
Trimethoxyvinylsilane	Vapors may form explosive mixtures with air
Trimethoxyvinylsilane	Vapors may cause dizziness or suffocation without knowledge.
Trimethoxyvinylsilane	May cause irritation, corrosive and toxic gas in case of fire.
Trimethoxyvinylsilane	Inhalation and contact may irritate or burn the skin and eyes.
Polydimethylsiloxane	Stable at normal temperature and pressure
Polydimethylsiloxane	Container may explode on heating
Polydimethylsiloxane	Some are burned but not easily ignited
Polydimethylsiloxane	May cause irritation and toxic gas in case of fire.
Polydimethylsiloxane	Inhalation of the substance may be harmful
Polydimethylsiloxane	Some fluids may cause dizziness, suffocation-inducing vapors
Siloxanes and Silicones, di-Me, hydroxy-terminated	Stable at normal temperature and pressure
Siloxanes and Silicones, di-Me, hydroxy-terminated	Container may explode on heating
Siloxanes and Silicones, di-Me, hydroxy-terminated	Some are burned but not easily ignited
Siloxanes and Silicones, di-Me, hydroxy-terminated	May cause irritation and poisonous gas in case of fire
Siloxanes and Silicones, di-Me, hydroxy-terminated	Inhalation of the substance may be harmful
Siloxanes and Silicones, di-Me, hydroxy-terminated	Some fluids may cause dizziness, suffocation-inducing vapors

10.2 Conditions to avoid

Amorphous, fumed silica	Heat source, spark, flame, etc.
N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane	No data
Trimethoxyvinylsilane	Keep away from heat, sparks, open flame and heat. - No smoking

Polydimethylsiloxane	Heat source, spark, flame, etc.
Siloxanes and Silicones, di-Me, hydroxy-terminated	Heat source, spark, flame, etc.

10.3 Substances to avoid

Amorphous, fumed silica	Combustible materials, reducing materials
N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane	No data
Trimethoxyvinylsilane	No data
Polydimethylsiloxane	Combustible material
Polydimethylsiloxane	Irritation, Toxic gas
Siloxanes and Silicones, di-Me, hydroxy-terminated	Combustible material
Siloxanes and Silicones, di-Me, hydroxy-terminated	Irritation, Toxic gas

10.4 Hazardous materials generated during decomposition

Amorphous, fumed silica	Corrosive/Toxic fume
Amorphous, fumed silica	Irritation, Corrosive, Toxic gas
N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane	During burning, pyrolysis or combustion can produce irritating and highly toxic gases.
Trimethoxyvinylsilane	Irritation, Corrosive, Toxic gas
Polydimethylsiloxane	No data
Siloxanes and Silicones, di-Me, hydroxy-terminated	No data

11. TOXICOLOGICAL INFORMATION

11.1. Information about possible routes of exposure

Amorphous, fumed silica	Exposure to respiration can cause pneumoconiosis in large quantities of inhalation May cause nausea, vomiting and diarrhea by stimulating the stomach. Exposed to skin contact Exposed by eye contact
N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane	Respiratory tract burns, allergic reactions Mucosa burn Skin burns, allergic reactions Eye burn
Trimethoxyvinylsilane	stimulus
Polydimethylsiloxane	Can absorb body by suction
Polydimethylsiloxane	Can be absorbed by suction and extinguisher
Polydimethylsiloxane	Through skin, digestive system, can absorb body by inhalation of aerosol
Polydimethylsiloxane	Able to absorb body by suction of steam
Polydimethylsiloxane	Can be absorbed by inhalation, skin and digestive system
Siloxanes and Silicones, di-Me, hydroxy-terminated	Can absorb body by suction
Siloxanes and Silicones, di-Me, hydroxy-terminated	Can be absorbed by suction and extinguisher
Siloxanes and Silicones, di-Me, hydroxy-terminated	Through skin, digestive system, can absorb body by inhalation of aerosol
Siloxanes and Silicones, di-Me, hydroxy-terminated	Able to absorb body by suction of steam
Siloxanes and Silicones, di-Me, hydroxy-terminated	Can be absorbed by inhalation, skin and digestive system

11.2 Health hazard information

Acute toxicity

Oral

Amorphous, fumed silica	LD50 > 3100 ㎎/㎏ Rat
N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane	LD50 2400 ㎎/㎏ Rat
Trimethoxyvinylsilane	No data
Polydimethylsiloxane	LD50 > 17000 ㎎/㎏ Rat
Siloxanes and Silicones, di-Me, hydroxy-terminated	LD50 > 64 ㎎/㎏ Rat (Labor Department 3)

Percutaneous

Amorphous, fumed silica	No data
N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane	LD50 16000 ㎎/㎏ Rabbit
Trimethoxyvinylsilane	No data
Polydimethylsiloxane	LD50 > 2000 ㎎/㎏ Rabbit
Siloxanes and Silicones, di-Me, hydroxy-terminated	LD50 > 16 ㎎/㎏ Rabbit (Labor Department 1)

inhalation

Amorphous, fumed silica	No data
N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane	No data
Trimethoxyvinylsilane	No data
Polydimethylsiloxane	No data
Siloxanes and Silicones, di-Me, hydroxy-terminated	No data

Skin corrosive or irritant

Amorphous, fumed silica	Skin irritation reported as absent
N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane	No irritation: 24, 48, 72 hours after erythema score less than 1.5
Trimethoxyvinylsilane	No data
Polydimethylsiloxane	No data
Siloxanes and Silicones, di-Me, hydroxy-terminated	No data

Severe eye damage or irritation

Amorphous, fumed silica	Eye irritation reported as absent
N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane	With stimulation: average observed (24 + 48 + 72 hrs) chemosis 3.0, enanthema 2.5, congestion 1.0, opacity 2.0
Trimethoxyvinylsilane	RABBIT / Weak stimulus
Polydimethylsiloxane	Eye Standard dose test Rabbit amount: 100 mg / 1H; Reaction: Mild (light stimulus)
Siloxanes and Silicones, di-Me, hydroxy-terminated	No data

Respiratory sensitization

Amorphous, fumed silica	No data
N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane	No data
Trimethoxyvinylsilane	No data

Polydimethylsiloxane No data

Siloxanes and Silicones, di-Me, hydroxy-terminated No data

Skin sensitization

Amorphous, fumed silica No skin sensitization reported in humans

N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane Sensitive

Trimethoxyvinylsilane No data

Polydimethylsiloxane No data

Siloxanes and Silicones, di-Me, hydroxy-terminated No data

Carcinogenicity

Industrial Safety and Health Act

Amorphous, fumed silica No data

N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane No data

Trimethoxyvinylsilane No data

Polydimethylsiloxane No data

Siloxanes and Silicones, di-Me, hydroxy-terminated No data

Notice of Ministry of Employment and Labor

Amorphous, fumed silica No data

N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane No data

Trimethoxyvinylsilane No data

Polydimethylsiloxane No data

Siloxanes and Silicones, di-Me, hydroxy-terminated No data

IARC

Amorphous, fumed silica Group 3 (Silica, amorphous)

N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane No data

Trimethoxyvinylsilane No data

Polydimethylsiloxane No data

Siloxanes and Silicones, di-Me, hydroxy-terminated No data

OSHA

Amorphous, fumed silica No data

N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane No data

Trimethoxyvinylsilane No data

Polydimethylsiloxane No data

Siloxanes and Silicones, di-Me, hydroxy-terminated No data

ACGIH

Amorphous, fumed silica No data

N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane No data

Trimethoxyvinylsilane No data

Polydimethylsiloxane	No data
Siloxanes and Silicones, di-Me, hydroxy-terminated	No data

NTP

Amorphous, fumed silica	No data
N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane	No data
Trimethoxyvinylsilane	No data
Polydimethylsiloxane	No data
Siloxanes and Silicones, di-Me, hydroxy-terminated	No data

EU CLP

Amorphous, fumed silica	No data
N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane	No data
Trimethoxyvinylsilane	No data
Polydimethylsiloxane	No data
Siloxanes and Silicones, di-Me, hydroxy-terminated	No data

Germ cell mutagenicity

Amorphous, fumed silica	In vivo / In vitro tests There was no evidence that this substance caused mutations In any of the tests. - Genotoxicity effects do not occur when exposed to this material.
N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane	Return mutation test: negative concentration> 5000 ug / plate HGPRT assay: negative CHO cells: S9-: 0.1-4.0 mg / ml, S9 +: 2.0-5.0 mg / ml Sister exchange chromosomal aberration test: negative, CHO cells: 1.5 to 4.0 mg / ml without S9 activation; 1.0 to 3.5 mg / ml with S9 activation Micronucleus Test: Negative Mouse (Swiss webster): 87.5, 175, and 280 mg / kg
Trimethoxyvinylsilane	No data
Polydimethylsiloxane	No data
Siloxanes and Silicones, di-Me, hydroxy-terminated	No data

Reproductive toxicity

Amorphous, fumed silica	No data
N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane	NOAEL=500 mg/kg bw/day
Trimethoxyvinylsilane	No data
Polydimethylsiloxane	No data
Siloxanes and Silicones, di-Me, hydroxy-terminated	No data

Specific target organ toxicity (single exposure)

Amorphous, fumed silica	Short-term exposure may cause respiratory irritation.
N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane	No data
Trimethoxyvinylsilane	No data
Polydimethylsiloxane	No data
Siloxanes and Silicones, di-Me, hydroxy-terminated	No data

Specific target organ toxicity (repeated exposure)

Amorphous, fumed silica	After two years of long-term application, evidence for reversible effects in this material could not be explained, and at high doses, there was only a slight increase in tissue weight or growth delay from time to time. - showed normal lung reaction.
N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane	Rat:NOEAL 500mg/kg,0, 25, 125, and 500 mg/kg/day, Exposure period 28 days No effect.
Trimethoxyvinylsilane	No data
Polydimethylsiloxane	No data
Siloxanes and Silicones, di-Me, hydroxy-terminated	No data

Inhalation hazard

Amorphous, fumed silica	No data
N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane	No data
Trimethoxyvinylsilane	No data
Polydimethylsiloxane	No data
Siloxanes and Silicones, di-Me, hydroxy-terminated	No data

12. ECOLOGICAL INFORMATION

12.1. Ecotoxicity

Fish

Amorphous, fumed silica	No data
N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane	LC50 200 ㎎/ℓ 96 hr Lepomis macrochirus
Trimethoxyvinylsilane	LC50 16662.928 ㎎/ℓ 96 hr
Polydimethylsiloxane	LC50 37.79 ㎎/ℓ 96 hr Lepomis macrochirus
Siloxanes and Silicones, di-Me, hydroxy-terminated	No data

Shellfish

Amorphous, fumed silica	No data
N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane	EC50 90 ㎎/ℓ 48 hr Daphnia magna
Trimethoxyvinylsilane	LC50 15210.776 ㎎/ℓ 48 hr
Polydimethylsiloxane	LC50 44.5 ㎎/ℓ 48 hr Daphnia magna
Siloxanes and Silicones, di-Me, hydroxy-terminated	No data

Algae

Amorphous, fumed silica	No data
N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane	ErC50 8.8 ㎎/ℓ 72 hr Selenastrum capricornutum
Trimethoxyvinylsilane	LC50< 1.000 ㎎/ℓ 96 hr
Polydimethylsiloxane	No data
Siloxanes and Silicones, di-Me, hydroxy-terminated	No data

12.2. Persistence and degradability

Persistence

Amorphous, fumed silica	No data
N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane	log Kow -1.67 ((Estimate))
Trimethoxyvinylsilane	log Kow -0.32 ((Estimate))

Polydimethylsiloxane	No data
Siloxanes and Silicones, di-Me, hydroxy-terminated	log Kow 2.43

degradability

Amorphous, fumed silica	No data
N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane	No data
Trimethoxyvinylsilane	No data
Polydimethylsiloxane	No data
Siloxanes and Silicones, di-Me, hydroxy-terminated	No data

12.3. Bioaccumulation

Enrichment

Amorphous, fumed silica	No data
N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane	No data
Trimethoxyvinylsilane	No data
Polydimethylsiloxane	No data
Siloxanes and Silicones, di-Me, hydroxy-terminated	BCF 14.77

Biodegradability

Amorphous, fumed silica	No data
N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane	39 (%) 28 day
Trimethoxyvinylsilane	No data
Polydimethylsiloxane	No data
Siloxanes and Silicones, di-Me, hydroxy-terminated	No data

12.4. Soil mobility

Amorphous, fumed silica	No data
N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane	No data
Trimethoxyvinylsilane	No data
Polydimethylsiloxane	No data
Siloxanes and Silicones, di-Me, hydroxy-terminated	No data

12.5. Other harmful effects

Amorphous, fumed silica	No data
N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane	Underwater stability Half hour Less than 1 hour
Trimethoxyvinylsilane	No data
Polydimethylsiloxane	No data
Siloxanes and Silicones, di-Me, hydroxy-terminated	No data

13. DISPOSAL CONSIDERATIONS

13.1 Disposal method	Dispose of contents and container in accordance with local regulations.
13.2 Disposal considerations	Dispose of contents and container in accordance with local regulations.

14. TRANSPORT INFORMATION

14.1 UN Number (UN No.)	UN transport hazard classification not available
14.2. UN proper shipping name	Not applicable
14.3. Transport hazard class(es)	Not applicable
14.4. Packing group	Not applicable
14.5. Environmental hazards	No data
14.6 Special safety measures that the user needs or needs to know about transportation or transportation	
Emergency measures in case of fire	Not applicable
Emergency Action	Not applicable
14.7 Other International Transportation Regulations	
Air Transport (IATA-DGR)	Not subject to IATA regulations.

15. REGULATORY INFORMATION

15.1 Regulation by the Industrial Safety and Health Act	No data
15.2 Regulation by Chemical Substance Control Act	No data
15.3 Regulation under dangerous goods safety management law	No data
15.4 Regulation by waste management law	Designated waste
15.5 Other domestic and foreign regulations	
Domestic regulation	
Residual Organic Pollutant Control Act	Not available
Foreign regulation	
OSHA regulations	Not applicable
CERCLA regulations	Not applicable
US Administration Information(EPCRA 302 regulations)	Not applicable
US Administration Information(EPCRA 304 regulations)	Not applicable
US Administration Information(EPCRA 313 regulations)	Not applicable
US Administration Information(Rotterdam Convention material)	Not applicable
US Administration Information(Stockholm Convention substance)	Not applicable
US Administration Information(Montreal Protocol substance)	Not applicable
EU Classification information(Confirmed classification result)	Not applicable
EU Classification information(Danger phrases)	Not applicable
EU Classification information(Safety phrases)	Not applicable

16. OTHER INFORMATION

16.1 Source of material

Amorphous, fumed silica

Corporate Solution From Thomson Micromedex(http://csi.micromedex.com)(Information on possible routes of exposure)

Seton compliance resource center(http://www.setonresourcecenter.com)(Information on possible routes of exposure)

OECD Screening Information Data Set(http://cs3-hq.oecd.org/scripts/hpv/)(Oral)

OECD Screening Information Data Set(http://cs3-hq.oecd.org/scripts/hpv/)(Skin corrosive or irritant)

OECD Screening Information Data Set(http://cs3-hq.oecd.org/scripts/hpv/)(Severe eye damage or irritation)

OECD Screening Information Data Set(http://cs3-hq.oecd.org/scripts/hpv/)(Skin sensitization)

International Uniform ChemicaL Information Database(IUCLID)(http://ecb.jrc.it/esis)(Germ cell mutagenicity)

OECD SIDS(http://www.chem.unep.ch/irptc/sids/OECDSIDS/silicates.pdf)(Specific target organ toxicity (single exposure))

Intermational Programme on Chemical Safety(IPCS INCHEM)(http://www.inchem.org/)(Specific target organ toxicity (repeated exposure))

OECD Screening Information Data Set(http://cs3-hq.oecd.org/scripts/hpv/)(Specific target organ toxicity (repeated exposure))

OECD Screening Information Data Set(http://cs3-hq.oecd.org/scripts/hpv/)(Recommended use of the product)

N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane

OECD 401, EEC 67/548 1967)-79/831, OECD SIDS(Oral)

OECD SIDS(Percutaneous)

OECD TG 404 ,OECD SIDS(Skin corrosive or irritant)

OECD TG 405 OECD SIDS(Severe eye damage or irritation)

OECD TG406, OECD SIDS (1992)(Skin sensitization)

EPA Health Effect Test Guidelines, EPA Report 560/6-83-001, OECD SIDS(Germ cell mutagenicity)

EPA Health Effects Test Guidelines, OEC SIDS(Germ cell mutagenicity)

OECD TG 471, Directive 84/449/EEC(Germ cell mutagenicity)

OECD TG 422, OECD SIDS(Reproductive toxicity)

OECD TG 422; US EPA Guideline OPPTS 870.3650, OECD SIDS(Specific target organ toxicity (repeated exposure))

Static,EPA-660/3-75-009,SIDS(fish)

Static,OECD Guide-line 202,SIDS(shellfish)

OECD Guide-line 201,SIDS(Algae)

OECD SIDS(Biodegradable)

Trimethoxyvinylsilane

TOMES(Severe eye damage or irritation)

ECOSAR(Fish)

ECOSAR(shellfish)

ECOSAR(Algae)

Polydimethylsiloxane

National Library of Medicine(http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?CHEM)(oral)

National Library of Medicine(NLM)(http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?CHEM)(Percutaneous)

Corporate Solution From Thomson Micromedex(http://csi.micromedex.com)(Severe eye damage or irritation)

The ECOTOXicology database (ECOTOX)(http://cfpub.epa.gov/ECOTOX/quick_query.htm)(Fish)

The ECOTOXicology database (ECOTOX)(http://cfpub.epa.gov/ECOTOX/quick_query.htm)(shellfish)

The Chemical Database, The Department of Chemistry at the University of Akron(http://ull.chemistry.uakron.edu/erd)

Siloxanes and Silicones, di-Me, hydroxy-terminated

Corporate Solution From Thomson Micromedex(http://csi.micromedex.com)(ora)

Corporate Solution From Thomson Micromedex(http://csi.micromedex.com)(Percutaneous)

Quantitative Structure Activity Relation(QSAR)(Persistence)

Quantitative Structure Activity Relation(QSAR)(Enrichment)

16.2 Date First	2016-02-01
16.3 Revision number and date	
Revision number	3 time
Revision Date	2017-08-30

16.4 Etc.

○ The MSDS (Material Safty Data Sheet) is edited or partially corrected by referring to the MSDS provided by KOSHA (Korea Occupational Safty and Health Agency)