

SAFETY DATA SHEET

according to GB/T 16483 and GB/T 17519

DOW CORNING

DOW CORNING(R) 983(KR) SILICONE GLAZING & CURTAINWALL C/A

Version 2.2 Revision Date: 2015/10/06 SDS Number: 967742-00006 Date of last issue: 2015/04/29
Date of first issue: 2014/12/16

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : DOW CORNING(R) 983(KR) SILICONE GLAZING & CURTAINWALL C/A

Product code : 000000000004082558, 000000000004082558

Chemical nature : Silicone compound

Manufacturer or supplier's details

Company : Dow Corning (Zhangjiagang) Holding Company Limited

Address : 18 Beihai Road, Yangtze River International Chemical Industry Park, Zhangjiagang, Jiangsu Province, P.R.C., Postal Code: 215634

Telephone : 400 880 7110

Emergency telephone number : (86 512) 56732049

E-mail address : China.info@dowcorning.com

Recommended use of the chemical and restrictions on use

Recommended use : Adhesive, binding agents

2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance : paste
Colour : black
Odour : Fishy

Causes skin irritation. May cause an allergic skin reaction. Causes serious eye damage. Harmful to aquatic life.

GHS Classification

Skin corrosion/irritation : Category 2

Serious eye damage/eye irritation : Category 1

Skin sensitisation : Category 1

Acute aquatic toxicity : Category 3

GHS label elements

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Hazard pictograms :



Signal word : Danger

Hazard statements : H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H402 Harmful to aquatic life.

Precautionary statements : **Prevention:**
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin thoroughly after handling.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/ eye protection/ face protection.
Response:
P302 + P352 IF ON SKIN: Wash with plenty of water.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Physical and chemical hazards

Not classified based on available information.

Health hazards

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

Environmental hazards

Harmful to aquatic life.

Other hazards which do not result in classification

None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical name	CAS-No.	Concentration (% w/w)
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Carbon black	1333-86-4	>= 10 - < 20
Methyltrimethoxysilane	1185-55-3	>= 10 - < 20
Aminopropyltriethoxysilane Rxn with Glycidoxypropyltrimethoxysilane and Methyltrimethoxysilane	474530-85-3	>= 10 - < 20
N-(3-(Trimethoxysilyl)propyl)ethylenediamine	1760-24-3	>= 1 - < 10
3-Aminopropyltriethoxysilane	919-30-2	>= 1 - < 10
N, N-Bis(3-(Trimethoxysilyl)propyl)-1,2-ethanediamine	74956-86-8	>= 0.1 - < 1
N, N'-bis(3-(trimethoxysilyl)propyl)-1,2-ethanediamine	68845-16-9	>= 0.1 - < 1
Dimethylbis[(1-oxoneodecyl)oxy]stannane	68928-76-7	>= 0.1 - < 1
Oligomers of aminoalkylmethoxysilanes	Not Assigned	>= 0.1 - < 1

4. FIRST AID MEASURES

- General advice : In the case of accident or if you feel unwell, seek medical advice immediately.
When symptoms persist or in all cases of doubt seek medical advice.
- If inhaled : If inhaled, remove to fresh air.
Get medical attention.
- In case of skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Get medical attention.
Wash clothing before reuse.
Thoroughly clean shoes before reuse.
- In case of eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.
If easy to do, remove contact lens, if worn.
Get medical attention immediately.
- If swallowed : If swallowed, DO NOT induce vomiting.
Get medical attention.
Rinse mouth thoroughly with water.
- Most important symptoms and effects, both acute and delayed : Causes skin irritation.
May cause an allergic skin reaction.
Causes serious eye damage.
- Protection of first-aiders : First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists.
- Notes to physician : Treat symptomatically and supportively.

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5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Water spray
Alcohol-resistant foam
Carbon dioxide (CO₂)
Dry chemical
- Unsuitable extinguishing media : None known.
- Specific hazards during fire-fighting : Exposure to combustion products may be a hazard to health.
- Hazardous combustion products : Carbon oxides
Silicon oxides
Formaldehyde
Nitrogen oxides (NO_x)
Chlorine compounds
- Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Use water spray to cool unopened containers.
Remove undamaged containers from fire area if it is safe to do so.
Evacuate area.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.
Use personal protective equipment.

6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Follow safe handling advice and personal protective equipment recommendations.
- Environmental precautions : Discharge into the environment must be avoided.
Prevent further leakage or spillage if safe to do so.
Retain and dispose of contaminated wash water.
Local authorities should be advised if significant spillages cannot be contained.
- Methods and materials for containment and cleaning up : Soak up with inert absorbent material.
For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container.
Clean up remaining materials from spill with suitable absorbent.
Local or national 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 regulations are applicable.

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Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

7. HANDLING AND STORAGE

Handling

- Technical measures : See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.
- Local/Total ventilation : Use only with adequate ventilation.
- Advice on safe handling : Do not get on skin or clothing.
Do not swallow.
Do not get in eyes.
Handle in accordance with good industrial hygiene and safety practice.
Keep container tightly closed.
Keep away from water.
Protect from moisture.
Take care to prevent spills, waste and minimize release to the environment.
- Avoidance of contact : Oxidizing agents
Water

Storage

- Conditions for safe storage : Keep in properly labelled containers.
Keep tightly closed.
Store in accordance with the particular national regulations.
- Materials to avoid : Do not store with the following product types:
Strong oxidizing agents
- Packaging material : Unsuitable material: None known.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Carbon black	1333-86-4	PC-TWA (Total dust)	4 mg/m ³	GBZ 2.1-2007
Further information: G2B - Possibly carcinogenic to humans				
		TWA (Inhalable fraction)	3 mg/m ³	ACGIH
Methyltrimethoxysilane	1185-55-3	TWA	50 ppm	DCC OEL
Dimethylbis(1-	68928-76-7	TWA	0.1 mg/m ³	ACGIH

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oxoneodecyl)oxy]stannane		(Tin)	
	STEL	0.2 mg/m3 (Tin)	ACGIH

Occupational exposure limits of decomposition products

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Methanol	67-56-1	PC-TWA	25 mg/m3	GBZ 2.1-2007
	Further information: Skin			
		PC-STEL	50 mg/m3	GBZ 2.1-2007
	Further information: Skin			
		TWA	200 ppm	ACGIH
		STEL	250 ppm	ACGIH
Ethanol	64-17-5	STEL	1,000 ppm	ACGIH

Engineering measures : Processing may form hazardous compounds (see section 10).
Ensure adequate ventilation, especially in confined areas.
Minimize workplace exposure concentrations.

Personal protective equipment

Respiratory protection : Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines.

Filter type : Self-contained breathing apparatus

Eye/face protection : Wear the following personal protective equipment:
Chemical resistant goggles must be worn.
If splashes are likely to occur, wear:
Face-shield

Skin and body protection : Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential.
Skin contact must be avoided by using impervious protective clothing (gloves, aprons, boots, etc).

Hand protection
Material : Impervious gloves

Remarks : Choose gloves to protect hands against chemicals depending on the concentration and quantity of the hazardous substance and specific to place of work. Breakthrough time is not determined for the product. Change gloves often! For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the

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end of workday.

Hygiene measures : Ensure that eye flushing systems and safety showers are located close to the working place.
When using do not eat, drink or smoke.
Wash contaminated clothing before re-use.
These precautions are for room temperature handling. Use at elevated temperature or aerosol/spray applications may require added precautions.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: paste
Colour	: black
Odour	: Fishy
Odour Threshold	: No data available
pH	: Not applicable
Melting point/freezing point	: No data available
Initial boiling point and boiling range	: Not applicable
Flash point	: Not applicable
Evaporation rate	: Not applicable
Flammability (solid, gas)	: Not classified as a flammability hazard
Upper explosion limit	: No data available
Lower explosion limit	: No data available
Vapour pressure	: Not applicable
Relative vapour density	: No data available
Relative density	: 1.08
Solubility(ies) Water solubility	: No data available
Partition coefficient: n-octanol/water	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available

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Viscosity
Viscosity, dynamic : Not applicable

Explosive properties : Not explosive

Oxidizing properties : The substance or mixture is not classified as oxidizing.

Molecular weight : No data available

10. STABILITY AND REACTIVITY

Reactivity : Not classified as a reactivity hazard.

Chemical stability : Stable under normal conditions.

Possibility of hazardous reactions : Use at elevated temperatures may form highly hazardous compounds.
Can react with strong oxidizing agents.
Hazardous decomposition products will be formed upon contact with water or humid air.
Hazardous decomposition products will be formed at elevated temperatures.

Conditions to avoid : Exposure to moisture

Incompatible materials : Oxidizing agents
Water

Hazardous decomposition products
Contact with water or humid air : Methanol
Ethanol

Thermal decomposition : Formaldehyde

11. TOXICOLOGICAL INFORMATION

Exposure routes : Skin contact
Ingestion
Eye contact

Acute toxicity

Not classified based on available information.

Product:

Acute oral toxicity : Acute toxicity estimate: > 5,000 mg/kg
Method: Calculation method

Acute inhalation toxicity : Acute toxicity estimate: > 10 mg/l
Exposure time: 4 h

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Test atmosphere: dust/mist
Method: Calculation method

Acute dermal toxicity : Acute toxicity estimate: > 5,000 mg/kg
Method: Calculation method

Components:

Carbon black:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 0.0046 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Methyltrimethoxysilane:

Acute oral toxicity : LD50 (Rat): 12.3 ml/kg
Assessment: The substance or mixture has no acute oral toxicity
Remarks: Information taken from reference works and the literature.

Acute inhalation toxicity : LC50 (Rat): > 42.1 mg/l
Exposure time: 6 h
Test atmosphere: vapour
Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: Based on test data

Acute dermal toxicity : LD50 (Rabbit): > 9,500 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity
Remarks: Based on test data

Aminopropyltriethoxysilane Rxn with Glycidoxypropyltrimethoxysilane and Methyltrimethoxysilane:

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity
Remarks: Based on data from similar materials

N-(3-(Trimethoxysilyl)propyl)ethylenediamine:

Acute oral toxicity : LD50 (Rat): 2,295 mg/kg
Remarks: Based on test data

Acute inhalation toxicity : LC50 (Rat): > 1.49 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Remarks: Based on test data

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

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Remarks: Based on test data

3-Aminopropyltriethoxysilane:

Acute oral toxicity : LD50 (Rat): 1.57 ml/kg
Remarks: Based on test data

Acute dermal toxicity : LD50 (Rabbit): 4.29 ml/kg
Remarks: Information taken from reference works and the literature.

Dimethylbis[(1-oxododecyl)oxy]stannane:

Acute oral toxicity : LD50 (Rat): 894 mg/kg
Method: OECD Test Guideline 401

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity

Skin corrosion/irritation

Causes skin irritation.

Components:

Carbon black:

Species: Rabbit
Result: No skin irritation

Methyltrimethoxysilane:

Species: Rabbit
Result: No skin irritation
Remarks: Based on test data

Aminopropyltriethoxysilane Rxn with Glycidoxypropyltrimethoxysilane and Methyltrimethoxysilane:

Species: Rabbit
Result: No skin irritation
Remarks: Based on data from similar materials

N-(3-(Trimethoxysilyl)propyl)ethylenediamine:

Species: Rabbit
Result: Mild skin irritation
Remarks: Based on test data

3-Aminopropyltriethoxysilane:

Species: Rabbit
Result: Corrosive after 3 minutes to 1 hour of exposure
Remarks: Based on test data

N, N-Bis(3-(Trimethoxysilyl)propyl)-1,2-ethanediamine:

Result: Skin irritation
Remarks: Based on data from similar materials

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N, N'-bis(3-(trimethoxysilyl)propyl)-1,2-ethanediamine:

Result: Skin irritation

Remarks: Information taken from reference works and the literature.

Dimethylbis[(1-oxoneodecyl)oxy]stannane:

Species: Rabbit

Method: OECD Test Guideline 404

Result: No skin irritation

Oligomers of aminoalkylmethoxysilanes:

Species: Rabbit

Result: Mild skin irritation

Remarks: Based on test data

Serious eye damage/eye irritation

Causes serious eye damage.

Components:

Carbon black:

Species: Rabbit

Result: No eye irritation

Methyltrimethoxysilane:

Species: Rabbit

Result: No eye irritation

Remarks: Based on test data

Aminopropyltriethoxysilane Rxn with Glycidoxypropyltrimethoxysilane and Methyltrimethoxysilane:

Species: Rabbit

Result: Irritation to eyes, reversing within 21 days

Remarks: Based on data from similar materials

N-(3-(Trimethoxysilyl)propyl)ethylenediamine:

Species: Rabbit

Result: Irreversible effects on the eye

Remarks: Based on test data

3-Aminopropyltriethoxysilane:

Species: Rabbit

Result: Irreversible effects on the eye

Remarks: Based on test data

N, N-Bis(3-(Trimethoxysilyl)propyl)-1,2-ethanediamine:

Result: Irreversible effects on the eye

Remarks: Based on data from similar materials

N, N'-bis(3-(trimethoxysilyl)propyl)-1,2-ethanediamine:

Result: Irreversible effects on the eye

Remarks: Information taken from reference works and the literature.

Dimethylbis[(1-oxoneodecyl)oxy]stannane:

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Species: Rabbit
Result: No eye irritation
Method: OECD Test Guideline 405

Oligomers of aminoalkylmethoxysilanes:

Species: Rabbit
Result: Irreversible effects on the eye
Remarks: Based on test data

Respiratory or skin sensitisation

Skin sensitisation: May cause an allergic skin reaction.
Respiratory sensitisation: Not classified based on available information.

Components:

Carbon black:

Test Type: Buehler Test
Exposure routes: Skin contact
Species: Guinea pig
Method: OECD Test Guideline 406
Result: negative

Methyltrimethoxysilane:

Assessment: Probability or evidence of low to moderate skin sensitisation rate in humans

Test Type: Buehler Test
Species: Guinea pig
Remarks: Based on test data

Aminopropyltriethoxysilane Rxn with Glycidoxypropyltrimethoxysilane and Methyltrimethoxysilane:

Assessment: Does not cause skin sensitisation.

Test Type: Maximisation Test
Species: Guinea pig
Remarks: No known sensitising effect.
Based on data from similar materials

N-(3-(Trimethoxysilyl)propyl)ethylenediamine:

Assessment: Probability or evidence of skin sensitisation in humans

Test Type: Maximisation Test
Species: Guinea pig
Remarks: Information taken from reference works and the literature.

3-Aminopropyltriethoxysilane:

Assessment: Probability or evidence of skin sensitisation in humans

Test Type: Maximisation Test
Species: Guinea pig
Remarks: Based on test data

Test Type: Buehler Test

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Species: Guinea pig
Remarks: Based on test data

N, N-Bis(3-(Trimethoxysilyl)propyl)-1,2-ethanediamine:
Assessment: Probability or evidence of skin sensitisation in humans

N, N'-bis(3-(trimethoxysilyl)propyl)-1,2-ethanediamine:
Assessment: Probability or evidence of skin sensitisation in humans

Oligomers of aminoalkylmethoxysilanes:
Assessment: Probability or evidence of skin sensitisation in humans

Test Type: Maximisation Test
Species: Guinea pig
Remarks: Information taken from reference works and the literature.

Germ cell mutagenicity
Not classified based on available information.

Components:

Carbon black:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Result: negative

Methyltrimethoxysilane:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Result: negative
Remarks: Based on test data

: Test Type: Mutagenicity (in vitro mammalian cytogenetic test)
Result: positive
Remarks: Based on test data

: Test Type: Chromosome aberration test in vitro
Result: positive
Remarks: Based on test data

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo
cytogenetic assay)
Species: Mouse
Application Route: Ingestion
Result: negative
Remarks: Based on test data

Germ cell mutagenicity - Assessment : Animal testing did not show any mutagenic effects.

Aminopropyltriethoxysilane Rxn with Glycidoxypropyltrimethoxysilane and Methyltri- methoxysilane:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Result: negative
Remarks: Based on test data

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3-Aminopropyltriethoxysilane:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Result: negative
Remarks: Based on test data

: Test Type: Chromosome aberration test in vitro
Result: negative
Remarks: Based on test data

: Test Type: Mutagenicity (in vitro mammalian cytogenetic test)
Result: negative
Remarks: Based on test data

: Test Type: In vitro sister chromatid exchange assay in mam-
malian cells
Result: negative
Remarks: Based on test data

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo
cytogenetic assay)
Species: Mouse
Application Route: Intraperitoneal injection
Result: negative
Remarks: Based on test data

Germ cell mutagenicity - Assessment : Animal testing did not show any mutagenic effects.

Dimethylbis[(1-oxodecyl)oxy]stannane:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Method: OECD Test Guideline 471
Result: negative

Carcinogenicity

Not classified based on available information.

Components:

3-Aminopropyltriethoxysilane:

Species: Mouse
Application Route: Skin contact
Result: negative
Remarks: Based on test data

Carcinogenicity - Assessment : Animal testing did not show any carcinogenic effects.

Reproductive toxicity

Not classified based on available information.

Components:

Methyltrimethoxysilane:

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- Effects on fertility : Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test
Species: Rat, male and female
Application Route: Ingestion
Symptoms: No effects on fertility
Remarks: Based on test data
- Effects on foetal development : Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test
Species: Rat, male and female
Application Route: Ingestion
Symptoms: No effects on foetal development
Remarks: Based on test data
- Reproductive toxicity - Assessment : No evidence of adverse effects on sexual function and fertility, or on development, based on animal experiments.

N-(3-(Trimethoxysilyl)propyl)ethylenediamine:

- Effects on fertility : Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test
Application Route: Ingestion
Symptoms: No effects on fertility
Remarks: Based on test data
- Effects on foetal development : Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test
Application Route: Ingestion
Symptoms: No effects on foetal development
Remarks: Based on test data
- Reproductive toxicity - Assessment : No evidence of adverse effects on sexual function and fertility, or on development, based on animal experiments.

3-Aminopropyltriethoxysilane:

- Effects on fertility : Species: Rat, male and female
Application Route: Ingestion
Symptoms: No effects on fertility
Remarks: Based on test data
- Effects on foetal development : Test Type: Prenatal development toxicity study (teratogenicity)
Species: Rat
Application Route: Ingestion
Symptoms: No effects on foetal development
Remarks: Based on test data
- Reproductive toxicity - Assessment : No evidence of adverse effects on sexual function and fertility, or on development, based on animal experiments.

Dimethylbis[(1-oxoneodecyl)oxy]stannane:

- Reproductive toxicity - Assessment : Some evidence of adverse effects on development, based on animal experiments.

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STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.

Components:

Carbon black:

Exposure routes: inhalation (dust/mist/fume)

Assessment: No significant health effects observed in animals at concentrations of 0.2 mg/l/6h/d or less.

Methyltrimethoxysilane:

Exposure routes: inhalation (vapour)

Assessment: No significant health effects observed in animals at concentrations of 1 mg/l/6h/d or less.

Exposure routes: Ingestion

Assessment: No significant health effects observed in animals at concentrations of 100 mg/kg bw or less.

N-(3-(Trimethoxysilyl)propyl)ethylenediamine:

Exposure routes: Ingestion

Assessment: No significant health effects observed in animals at concentrations of 100 mg/kg bw or less.

3-Aminopropyltriethoxysilane:

Exposure routes: Ingestion

Assessment: No significant health effects observed in animals at concentrations of 100 mg/kg bw or less.

Exposure routes: inhalation (dust/mist/fume)

Assessment: No significant health effects observed in animals at concentrations of 0.2 mg/l/6h/d or less.

Exposure routes: Skin contact

Assessment: No significant health effects observed in animals at concentrations of 200 mg/kg bw or less.

Dimethylbis[(1-oxodecyl)oxy]stannane:

Exposure routes: Ingestion

Target Organs: Immune system, Central nervous system

Assessment: Shown to produce significant health effects in animals at concentrations of 10 mg/kg bw or less.

Repeated dose toxicity

Components:

Carbon black:

Species: Rat

NOAEL: 1 mg/m³

LOAEL: 7 mg/m³

Application Route: Inhalation

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Test atmosphere: dust/mist

Exposure time: 90 d

Remarks: The substance is inextricably bound in the product and therefore does not contribute to a dust inhalation hazard.

Methyltrimethoxysilane:

Species: Rat

Application Route: inhalation (vapour)

Remarks: Based on test data

Species: Rat

Application Route: Ingestion

Remarks: Based on test data

N-(3-(Trimethoxysilyl)propyl)ethylenediamine:

Application Route: Ingestion

Remarks: Based on test data

3-Aminopropyltriethoxysilane:

Species: Rat

Application Route: Ingestion

Remarks: Based on test data

Species: Rat

Application Route: inhalation (dust/mist/fume)

Remarks: Based on test data

Species: Rabbit

Application Route: Skin contact

Remarks: Based on data from similar materials

Dimethylbis[(1-oxodecyl)oxy]stannane:

Species: Rat

NOAEL: < 1.6 mg/kg

Application Route: Ingestion

Exposure time: 90 Days

Remarks: Based on data from similar materials

Aspiration toxicity

Not classified based on available information.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

Carbon black:

Toxicity to fish

: LC0 (Danio rerio (zebra fish)): 1,000 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

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- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 5,600 mg/l
Exposure time: 24 h
Method: OECD Test Guideline 202
- Toxicity to algae : NOEC (Desmodesmus subspicatus (green algae)): 10,000 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
- Methyltrimethoxysilane:**
- Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia sp.): > 100 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
- Toxicity to algae : ErC50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
- Toxicity to bacteria : EC50: > 100 mg/l
Method: OECD Test Guideline 209
- N-(3-(Trimethoxysilyl)propyl)ethylenediamine:**
- Toxicity to fish : LC50 (Danio rerio (zebra fish)): 597 mg/l
Exposure time: 96 h
Method: Directive 67/548/EEC, Annex V, C.1.
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia sp.): 81 mg/l
Exposure time: 48 h
Method: Directive 67/548/EEC, Annex V, C.2.
- Toxicity to algae : ErC50 (Selenastrum capricornutum (green algae)): 8.8 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
- NOEC (Selenastrum capricornutum (green algae)): 3.1 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia sp.): > 1 mg/l
Exposure time: 21 d
- Toxicity to bacteria : EC50 (Pseudomonas putida): 67 mg/l
Exposure time: 16 h
Method: DIN 38 412 Part 8
- 3-Aminopropyltriethoxysilane:**
- Toxicity to fish : LC50 (Danio rerio (zebra fish)): > 934 mg/l

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Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia sp.): 331 mg/l
Exposure time: 48 h

Dimethylbis[(1-oxodecyl)oxy]stannane:

Ecotoxicology Assessment

Chronic aquatic toxicity : May cause long lasting harmful effects to aquatic life.

Oligomers of aminoalkylmethoxysilanes:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 597 mg/l
Exposure time: 96 h
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia sp.): 37 mg/l
Exposure time: 48 h
Remarks: Based on data from similar materials

Toxicity to algae : ErC50 (Pseudokirchneriella subcapitata (green algae)): 8.8 mg/l
Exposure time: 72 h
Remarks: Based on data from similar materials

NOEC (Pseudokirchneriella subcapitata (green algae)): 3.1 mg/l
Exposure time: 72 h
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia sp.): > 1 mg/l
Exposure time: 21 d
Remarks: Based on data from similar materials

Persistence and degradability

Components:

Methyltrimethoxysilane:

Stability in water : Degradation half life: 2.2 h pH: 7

Aminopropyltriethoxysilane Rxn with Glycidoxypropyltrimethoxysilane and Methyltrimethoxysilane:

Biodegradability : Result: Not readily biodegradable.
Biodegradation: 41.3 %
Exposure time: 28 d
Method: OECD Test Guideline 301B

N-(3-(Trimethoxysilyl)propyl)ethylenediamine:

Biodegradability : Result: Not readily biodegradable.
Biodegradation: 39 %
Method: OECD Test Guideline 301A

Stability in water : Degradation half life: 0.025 h (24.7 °C) pH: 7
Method: OECD Test Guideline 111

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Dimethylbis[(1-oxonodecyl)oxy]stannane:

Biodegradability : Result: Not readily biodegradable.

Oligomers of aminoalkylmethoxysilanes:

Biodegradability : Result: Not readily biodegradable.

Bioaccumulative potential

Components:

Methyltrimethoxysilane:

Partition coefficient: n- : log Pow: -2.36
octanol/water

N-(3-(Trimethoxysilyl)propyl)ethylenediamine:

Partition coefficient: n- : log Pow: -0.3
octanol/water

3-Aminopropyltriethoxysilane:

Bioaccumulation : Species: Cyprinus carpio (Carp)
Bioconcentration factor (BCF): < 100

Mobility in soil

No data available

Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of in accordance with local regulations.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.
If not otherwise specified: Dispose of as unused product.

14. TRANSPORT INFORMATION

International Regulation

UNRTDG

Not regulated as a dangerous good

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

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Not applicable for product as supplied.

National Regulations

GB 6944/12268

Not regulated as a dangerous good

15. REGULATORY INFORMATION

National regulatory information

Law on the Prevention and Control of Occupational Diseases

The components of this product are reported in the following inventories:

NZIoC	: All ingredients listed or exempt.
REACH	: All ingredients (pre-)registered or exempt.
TSCA	: All chemical substances in this material are included on or exempted from listing on the TSCA Inventory of Chemical Substances.
PICCS	: All ingredients listed or exempt.
KECI	: All ingredients listed, exempt or notified.
ENCS/ISHL	: Consult your local Dow Corning office.
IECSC	: All ingredients listed or exempt.
AICS	: All ingredients listed or exempt.
TCSI	: All ingredients listed or exempt.

16. OTHER INFORMATION

Further information

Sources of key data used to compile the Safety Data Sheet : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <http://echa.europa.eu/>

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

Date format : yyyy/mm/dd

Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)
DCC OEL : Dow Corning Guide

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GBZ 2.1-2007 : Occupational exposure limits for hazardous agents in the workplace - Chemical hazardous agents.
ACGIH / TWA : 8-hour, time-weighted average
ACGIH / STEL : Short-term exposure limit
DCC OEL / TWA : Time weighted average
GBZ 2.1-2007 / PC-TWA : Permissible concentration - time weighted average
GBZ 2.1-2007 / PC-STEEL : Permissible concentration - short term exposure limit

AICS - Australian Inventory of Chemical Substances; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; CPR - Controlled Products Regulations; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

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