

SAFETY DATA SHEET

DOW CORNING(R) 688 GLAZING AND CLADDING SEALANT CLEAR

DOW CORNING

Version	Revision Date:	SDS Number:	Date of last issue: 13.11.2015
2.2	22.04.2016	1099535-00005	Date of first issue: 13.01.2015

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : DOW CORNING(R) 688 GLAZING AND CLADDING SEALANT CLEAR

Product code : 000000000004063593

Manufacturer or supplier's details

Company : Dow Corning Australia Pty Ltd, ABN 36 008 444 166

Address : **Darling Park, Tower 2
Level 20, 201 Sussex Street
Sydney. NSW 2000**

**Locked Bag 2095
North Ryde, NSW 1670**

Telephone : 1300-369-745

Emergency telephone number : **1300-360-732 (24 Hours)**

Telefax : 1300-650-785

Recommended use of the chemical and restrictions on use

Recommended use : Adhesive, binding agents

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Skin corrosion/irritation : Category 2

Serious eye damage/eye irritation : Category 1

Skin sensitisation : Category 1

GHS label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.

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Precautionary statements : **Prevention:**
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P272 Contaminated work clothing should not be allowed out of the workplace.
P280 Wear protective gloves/ eye protection/ face protection.

Response:
P302 + P352 IF ON SKIN: Wash with plenty of soap and 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 Take off contaminated clothing and wash before reuse.

Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards which do not result in classification

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Chemical nature : Silicone Sealant

Hazardous components

Chemical name	CAS-No.	Concentration (% w/w)
Silicon dioxide	7631-86-9	< 10
Methyltri(ethylmethylketoxime)silane	22984-54-9	< 10
Vinyltri (methylethylketoxime) silane	2224-33-1	< 10
3-Aminopropyltriethoxysilane	919-30-2	< 10
Methyltri(ethylmethylketoxime)silane isomers and oligomers	Not Assigned	< 10
Ethyl methyl ketoxime	96-29-7	< 10
Dimethylbis[(1-oxoneodecyl)oxy]stannane	68928-76-7	< 10
Octamethylcyclotetrasiloxane	556-67-2	< 10

SECTION 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.

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- | | |
|---|--|
| 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. |

SECTION 5. FIREFIGHTING MEASURES

- | | |
|---|---|
| Suitable extinguishing media | : Water spray
Alcohol-resistant foam
Carbon dioxide (CO ₂)
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) |
| 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. |

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

SECTION 7. HANDLING AND STORAGE

- 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.
- 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.
- Conditions for safe storage : Keep in properly labelled containers.
Keep tightly closed.
Store in accordance with the particular national regulations.

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Materials to avoid : Do not store with the following product types:
Strong oxidizing agents

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Silicon dioxide	7631-86-9	TWA (Respirable dust)	2 mg/m3	AU OEL
Dimethylbis[(1-oxoneodecyl)oxy]stannane	68928-76-7	TWA	0.1 mg/m3 (Tin)	AU OEL
	Further information: Some compounds in these groups are classified as carcinogenic or as sensitizers. Check individual classification details on the safety data sheet for information on classification., Skin absorption			
		STEL	0.2 mg/m3 (Tin)	AU OEL
	Further information: Some compounds in these groups are classified as carcinogenic or as sensitizers. Check individual classification details on the safety data sheet for information on classification., Skin absorption			
		TWA	0.1 mg/m3 (Tin)	ACGIH
		STEL	0.2 mg/m3 (Tin)	ACGIH
Octamethylcyclotetrasiloxane	556-67-2	TWA	10 ppm	DCC OEL

Occupational exposure limits of decomposition products

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Ethanol	64-17-5	TWA	1,000 ppm 1,880 mg/m3	AU OEL
		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 : Combined ammonia/amines and organic vapour type

Hand protection
Material : Chemical-resistant gloves

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- 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 end of workday.
- Eye 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).

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : paste
- Colour : colourless
- Odour : slight
- 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 : 1.03

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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
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

SECTION 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	: Ethyl methyl ketoxime Ethanol
Thermal decomposition	: Formaldehyde

SECTION 11. TOXICOLOGICAL INFORMATION

Exposure routes	: Skin contact Ingestion Eye contact
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Acute toxicity

Not classified based on available information.

Product:

Acute oral toxicity : Acute toxicity estimate: > 2,000 mg/kg
Method: Calculation method

Components:

Silicon dioxide:

Acute oral toxicity : LD50 (Rat): > 3,300 mg/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): > 2.08 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: Information taken from reference works and the literature.

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity
Remarks: Information taken from reference works and the literature.

Methyltri(ethylmethylketoxime)silane:

Acute oral toxicity : LD50 (Rat): > 2,520 mg/kg
Assessment: The substance or mixture has no acute oral toxicity
Remarks: Based on test data

Vinyltri (methylethylketoxime) silane:

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg
Assessment: The substance or mixture has no acute oral toxicity
Remarks: Based on test data

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

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Remarks: Information taken from reference works and the literature.

Ethyl methyl ketoxime:

- Acute oral toxicity : LD50 (Rat): 2,326 mg/kg
Method: OECD Test Guideline 401
- Acute inhalation toxicity : LC50 (Rat): > 4.83 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: OECD Test Guideline 403
Assessment: The substance or mixture has no acute inhalation toxicity
- Acute dermal toxicity : LD50 (Rabbit): > 1,000 - 1,800 mg/kg

Dimethylbis[(1-oxoneodecyl)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

Octamethylcyclotetrasiloxane:

- Acute oral toxicity : LD50 (Rat): > 4,800 mg/kg
Assessment: The substance or mixture has no acute oral toxicity
Remarks: Based on test data
- Acute inhalation toxicity : LC50 (Rat): 2975 ppm
Exposure time: 4 h
Test atmosphere: vapour
Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: Based on test data
- Acute dermal toxicity : LD50 (Rabbit): > 2.5 ml/kg
Assessment: The substance or mixture has no acute dermal toxicity
Remarks: Based on test data

Skin corrosion/irritation

Causes skin irritation.

Components:

Silicon dioxide:

Result: No skin irritation

Remarks: Information taken from reference works and the literature.

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Methyltri(ethylmethylketoxime)silane:

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

3-Aminopropyltriethoxysilane:

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

Ethyl methyl ketoxime:

Species: Rabbit
Result: No skin irritation

Dimethylbis[(1-oxoneodecyl)oxy]stannane:

Species: Rabbit
Method: OECD Test Guideline 404
Result: No skin irritation

Octamethylcyclotetrasiloxane:

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

Serious eye damage/eye irritation

Causes serious eye damage.

Components:

Silicon dioxide:

Result: No eye irritation
Remarks: Information taken from reference works and the literature.

Methyltri(ethylmethylketoxime)silane:

Species: Rabbit
Result: Irritation to eyes, reversing within 7 days
Remarks: Based on test data

Vinyltri (methylethylketoxime) silane:

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

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Methyltri(ethylmethylketoxime)silane isomers and oligomers:

Species: Rabbit
Result: Irritation to eyes, reversing within 7 days
Remarks: Based on data from similar materials

Ethyl methyl ketoxime:

Species: Rabbit
Result: Irreversible effects on the eye
Method: OECD Test Guideline 405

Dimethylbis[(1-oxoneodecyl)oxy]stannane:

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

Octamethylcyclotetrasiloxane:

Species: Rabbit
Result: No eye irritation
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:

Silicon dioxide:

Assessment: Does not cause skin sensitisation.

Test Type: Skin: test type not specified

Species: Guinea pig

Remarks: Information taken from reference works and the literature.

Methyltri(ethylmethylketoxime)silane:

Assessment: Probability or evidence of skin sensitisation in humans

Test Type: Maximisation Test

Species: Guinea pig

Remarks: Based on test data

Vinyltri (methylethylketoxime) silane:

Assessment: Probability or evidence of skin sensitisation in humans

Test Type: Maximisation Test

Species: Guinea pig

Remarks: Based on data from similar materials

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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
Species: Guinea pig
Remarks: Based on test data

Methyltri(ethylmethyletoxime)silane isomers and oligomers:

Assessment: Probability or evidence of skin sensitisation in humans

Test Type: Maximisation Test
Species: Guinea pig
Remarks: Based on data from similar materials

Ethyl methyl ketoxime:

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

Assessment: Probability or evidence of skin sensitisation in humans

Octamethylcyclotetrasiloxane:

Assessment: Does not cause skin sensitisation.

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

Chronic toxicity

Germ cell mutagenicity

Not classified based on available information.

Components:

Silicon dioxide:

Genotoxicity in vitro : Result: negative
Remarks: Information taken from reference works and the literature.

Genotoxicity in vivo : Application Route: Ingestion
Result: negative
Remarks: Information taken from reference works and the literature.

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

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Assessment

Methyltri(ethylmethyletoxime)silane:

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

Vinyltri (methylethyletoxime) silane:

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

Genotoxicity in vivo : Test Type: In vivo micronucleus test
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.

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 mammalian 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.

Ethyl methyl ketoxime:

Genotoxicity in vitro : Test Type: DNA damage and repair, unscheduled DNA synthesis in mammalian cells (in vitro)

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Result: negative

Genotoxicity in vivo : Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)
Species: Rat
Application Route: Ingestion
Result: negative

Dimethylbis[(1-oxoneodecyl)oxy]stannane:

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

Octamethylcyclotetrasiloxane:

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: negative
Remarks: Based on test data

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

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

: Test Type: DNA damage and repair, unscheduled DNA synthesis in mammalian cells (in vitro)
Result: negative
Remarks: Based on test data

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

Test Type: Rodent dominant lethal test (germ cell) (in vivo)
Species: Rat
Application Route: Ingestion
Result: negative
Remarks: Based on test data

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

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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.

Ethyl methyl ketoxime:

Species: Rat
Application Route: inhalation (vapour)
Exposure time: 26 Months
Result: positive

Carcinogenicity - Assessment : Limited evidence of carcinogenicity in animal studies

Reproductive toxicity

Not classified based on available information.

Components:

Methyltri(ethylmethylketoxime)silane:

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.

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)

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ment
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.

Ethyl methyl ketoxime:

Effects on fertility : Test Type: Two-generation reproduction toxicity study
Species: Rat
Application Route: Ingestion
Result: negative

Effects on foetal development : Test Type: Embryo-foetal development
Species: Rat
Application Route: Ingestion
Result: negative

Dimethylbis[(1-oxoneodecyl)oxy]stannane:

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

Octamethylcyclotetrasiloxane:

Effects on fertility : Test Type: Two-generation reproduction toxicity study
Species: Rat, male and female
Application Route: inhalation (vapour)
Symptoms: Effects on fertility
Remarks: Based on test data

Effects on foetal development : Test Type: Prenatal development toxicity study (teratogenicity)
Species: Rabbit
Application Route: inhalation (vapour)
Symptoms: No effects on foetal development
Remarks: Based on test data

Reproductive toxicity - Assessment : Some evidence of adverse effects on sexual function and fertility, based on animal experiments.

STOT - single exposure

Not classified based on available information.

Components:

Ethyl methyl ketoxime:

Assessment: May cause drowsiness or dizziness.

STOT - repeated exposure

Not classified based on available information.

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Components:

Methyltri(ethylmethylketoxime)silane:

Exposure routes: Ingestion

Target Organs: Blood

Assessment: Shown to produce significant health effects in animals at concentrations of >10 to 100 mg/kg bw.

Vinyltri (methylethylketoxime) silane:

Exposure routes: Ingestion

Target Organs: Blood

Assessment: Shown to produce significant health effects in animals at concentrations of >10 to 100 mg/kg bw.

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.

Methyltri(ethylmethylketoxime)silane isomers and oligomers:

Exposure routes: Ingestion

Target Organs: Blood

Assessment: Shown to produce significant health effects in animals at concentrations of >10 to 100 mg/kg bw.

Ethyl methyl ketoxime:

Exposure routes: Ingestion

Target Organs: Blood

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

Exposure routes: inhalation (vapour)

Target Organs: Blood

Assessment: Shown to produce significant health effects in animals at concentrations of 0.2 mg/l/6h/d or less.

Dimethylbis[(1-oxoneodecyl)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.

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Octamethylcyclotetrasiloxane:

Exposure routes: Ingestion

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

Exposure routes: inhalation (vapour)

Assessment: No significant health effects observed in animals at concentrations of 1 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.

Repeated dose toxicity

Components:

Methyltri(ethylmethylketoxime)silane:

Species: Rat

Application Route: Ingestion

Target Organs: Blood

Remarks: Based on test data

Vinyltri (methylethylketoxime) silane:

Species: Rat

Application Route: Ingestion

Target Organs: Blood

Remarks: Based on data from similar materials

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

Methyltri(ethylmethylketoxime)silane isomers and oligomers:

Species: Rat

Application Route: Ingestion

Target Organs: Blood

Remarks: Based on data from similar materials

Ethyl methyl ketoxime:

Species: Rat

LOAEL: 0.36 mg/l

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Application Route: inhalation (vapour)
Exposure time: 28 Days

Species: Rat
NOAEL: 4 mg/l
LOAEL: 20 mg/kg
Application Route: Ingestion
Exposure time: 28 Days

Dimethylbis[(1-oxoneodecyl)oxy]stannane:

Species: Rat
NOAEL: < 1.6 mg/kg
Application Route: Ingestion
Exposure time: 90 Days
Remarks: Based on data from similar materials

Octamethylcyclotetrasiloxane:

Species: Rat
Application Route: Ingestion
Remarks: Based on test data

Species: Rat
Application Route: inhalation (vapour)
Remarks: Based on test data

Species: Rabbit
Application Route: Skin contact
Remarks: Based on test data

Aspiration toxicity

Not classified based on available information.

Further information

Product:

Remarks: During use of the material, small amounts of methylethylketoxime (MEKO) will be released. Rodents exposed to chronic MEKO inhalation throughout their lifetimes showed significant increases in liver tumour rates.

Components:

Octamethylcyclotetrasiloxane:

Remarks: Results from a 2 year repeated vapour inhalation exposure study to rats of octamethylcyclotetrasiloxane (D4) indicate effects (benign uterine adenomas) in the uterus of female animals. This finding occurred at the highest exposure dose (700 ppm) only. Studies to date have not demonstrated if these effects occur through pathways that are relevant to humans. Repeated exposure in rats to D4 resulted in protoporphyrin accumulation in the liver. Without knowledge of the specific mechanism leading to the protoporphyrin accumulation the relevance of this finding to humans is unknown.

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SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

Methyltri(ethylmethylketoxime)silane:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): > 120 mg/l Exposure time: 96 h Method: OECD Test Guideline 203 Remarks: Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 120 mg/l Exposure time: 48 h Method: OECD Test Guideline 202 Remarks: Based on data from similar materials
Toxicity to algae	:	ErC50 (Selenastrum capricornutum (green algae)): 94 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 Remarks: Based on data from similar materials

Ecotoxicology Assessment

Acute aquatic toxicity : This product has no known ecotoxicological effects.

Vinyltri (methylethylketoxime) silane:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): > 120 mg/l Exposure time: 96 h Method: OECD Test Guideline 203 LC50 (Oryzias latipes (Orange-red killifish)): > 100 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
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3-Aminopropyltriethoxysilane:

Toxicity to fish	:	LC50 (Danio rerio (zebra fish)): > 934 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia sp.): 331 mg/l Exposure time: 48 h

Ethyl methyl ketoxime:

Toxicity to fish	:	LC50 (Oryzias latipes (Japanese medaka)): > 100 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 201 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae	:	EC50 (Scenedesmus capricornutum (fresh water algae)): 11.8

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mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

NOEC (*Scenedesmus capricornutum* (fresh water algae)):
2.56 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (*Daphnia magna* (Water flea)): > 100 mg/l
Exposure time: 21 d
Method: OECD Test Guideline 211

Toxicity to bacteria : EC50 (*Pseudomonas putida*): 281 mg/l
Exposure time: 17 h

Dimethylbis[(1-oxoneodecyl)oxy]stannane:

Toxicity to fish : LC50 (*Danio rerio* (zebra fish)): > 100 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EC50 (*Daphnia magna* (Water flea)): 17 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
Remarks: Based on data from similar materials

Toxicity to algae : ErC50 (*Desmodesmus subspicatus* (green algae)): 37 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: Based on data from similar materials

EC10 (*Desmodesmus subspicatus* (green algae)): 5.7 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: Based on data from similar materials

Octamethylcyclotetrasiloxane:

Toxicity to fish : LC50 (*Oncorhynchus mykiss* (rainbow trout)): > 0.022 mg/l
Exposure time: 96 h
Remarks: No toxicity at the limit of solubility

Toxicity to daphnia and other aquatic invertebrates : EC50 (*Daphnia* sp.): > 0.015 mg/l
Exposure time: 48 h
Remarks: No toxicity at the limit of solubility

Toxicity to fish (Chronic toxicity) : NOEC (*Oncorhynchus mykiss* (rainbow trout)): >= 0.0044 mg/l
Remarks: No toxicity at the limit of solubility

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (*Daphnia magna* (Water flea)): > 0.0079 mg/l
Exposure time: 21 d
Remarks: No toxicity at the limit of solubility

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Ecotoxicology Assessment

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

Persistence and degradability

Components:

Methyltri(ethylmethylketoxime)silane:

Biodegradability : Result: Not readily biodegradable.
Biodegradation: 14.5 %
Exposure time: 21 d
Method: OECD Test Guideline 302B
Remarks: Based on data from similar materials

Vinyltri (methylethylketoxime) silane:

Biodegradability : Result: Not readily biodegradable.
Biodegradation: 0 %
Exposure time: 28 d
Method: OECD Test Guideline 301A

Stability in water : Degradation half life: < 1 min (2 °C)
Method: OECD Test Guideline 111

Ethyl methyl ketoxime:

Biodegradability : Result: Not readily biodegradable.
Biodegradation: 27 %
Exposure time: 21 d
Method: OECD Test Guideline 301C

Dimethylbis[(1-oxoneodecyl)oxy]stannane:

Biodegradability : Result: Not readily biodegradable.
Biodegradation: 3 %
Exposure time: 35 d
Method: OECD Test Guideline 301F
Remarks: Based on data from similar materials

Octamethylcyclotetrasiloxane:

Biodegradability : Result: Not readily biodegradable.
Biodegradation: 3.7 %
Exposure time: 28 d
Method: OECD Test Guideline 310

Stability in water : Degradation half life: 69.3 - 144 h (24.6 °C) pH: 7
Method: OECD Test Guideline 111

Bioaccumulative potential

Components:

Methyltri(ethylmethylketoxime)silane:

Partition coefficient: n- : log Pow: 11.2

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octanol/water

3-Aminopropyltriethoxysilane:

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

Ethyl methyl ketoxime:

Bioaccumulation : Species: Cyprinus carpio (Carp)
Bioconcentration factor (BCF): 0.5 - 0.6
Method: OECD Test Guideline 305

Partition coefficient: n-octanol/water : log Pow: 0.63

Octamethylcyclotetrasiloxane:

Partition coefficient: n-octanol/water : log Pow: 6.48 (25.1 °C)

Mobility in soil

No data available

Other adverse effects

Components:

Octamethylcyclotetrasiloxane:

Results of PBT and vPvB assessment : Remarks: Octamethylcyclotetrasiloxane (D4) meets the current REACH Annex XIII criteria for PBT and vPvB. In Canada, D4 has been assessed and deemed to meet the PiT criteria. However, D4 does not behave similarly to known PBT/vPvB substances. The weight of scientific evidence from field studies shows that D4 is not biomagnifying in aquatic and terrestrial food webs. D4 in air will degrade by reaction with naturally occurring hydroxyl radicals in the atmosphere. Any D4 in air that does not degrade by reaction with hydroxyl radicals is not expected to deposit from the air to water, to land, or to living organisms.

SECTION 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.

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SECTION 14. TRANSPORT INFORMATION

International Regulations

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

Not applicable for product as supplied.

National Regulations

ADG

Not regulated as a dangerous good

SECTION 15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

Prohibition/Licensing Requirements	: Dimethylbis[(1-oxoneodecyl)oxy]stannane Refer to model WHS Act and Regulations for prohibition, authorisation and restricted use.
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The components of this product are reported in the following inventories:

KECI	: All ingredients listed, exempt or notified.
AICS	: All ingredients listed or exempt.
IECSC	: All ingredients listed or exempt.
PICCS	: All ingredients listed or exempt.
REACH	: All ingredients (pre-)registered or exempt.
ENCS/ISHL	: All components are listed on ENCS/ISHL or exempted from inventory listing.
NZIoC	: All ingredients listed or exempt.

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

Date format : dd.mm.yyyy

Full text of other abbreviations

ACGIH	: USA. ACGIH Threshold Limit Values (TLV)
AU OEL	: Australia. Workplace Exposure Standards for Airborne Contaminants.
DCC OEL	: Dow Corning Guide
ACGIH / TWA	: 8-hour, time-weighted average
ACGIH / STEL	: Short-term exposure limit
AU OEL / TWA	: Exposure standard - time weighted average
AU OEL / STEL	: Exposure standard - short term exposure limit
DCC OEL / TWA	: Time weighted average

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

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 mate-

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rial 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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