



SAFETY DATA SHEET

DOW CHEMICAL (AUSTRALIA) PTY LTD

Product name: DOWSIL™ 688 Silicone Weather Proofing Sealant Black

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DOW CHEMICAL (AUSTRALIA) PTY LTD encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

SECTION 1: IDENTIFICATION: PRODUCT IDENTIFIER AND CHEMICAL IDENTITY

Product name: DOWSIL™ 688 Silicone Weather Proofing Sealant Black

Recommended use of the chemical and restrictions on use

Identified uses: Adhesive, binding agents

COMPANY IDENTIFICATION

DOW CHEMICAL (AUSTRALIA) PTY LTD
LEVEL 29
367 COLLINS STREET
MELBOURNE VIC 3000
AUSTRALIA

Customer Information Number:

1800-780-074
SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: 1800-033-882

Local Emergency Contact: 1800-033-882

For advice, contact a doctor (at once) or the Australian Poisons Information Centre: 131 126

Transport Emergency Only Dial 000

SECTION 2: HAZARD(S) IDENTIFICATION

GHS Classification

Skin sensitisation - Category 1

GHS label elements

Hazard pictograms



Signal word: **WARNING!**

Hazard statements

May cause an allergic skin reaction.

Precautionary statements

Prevention

Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
Use only outdoors or in a well-ventilated area.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves.

Response

IF ON SKIN: Wash with plenty of soap and water.
If skin irritation or rash occurs: Get medical advice/ attention.
Wash contaminated clothing before reuse.

Disposal

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

Other hazards

No data available

**SECTION 3: COMPOSITION AND INFORMATION ON INGREDIENTS, IN
ACCORDANCE WITH SCHEDULE 8**

This product is a mixture.

| Component | CASRN | Concentration |
|--|---------------|--------------------------|
| Calcium carbonate treated with stearic acid | Not available | >= 37.451 - <= 43.8886 % |
| Silicon dioxide | 7631-86-9 | >= 2.859 - <= 4.4685 % |
| 2-Butanone, O,O',O''-(methylsilyldyne)trioxime | 22984-54-9 | >= 3.1687 - <= 4.2451 % |
| N-(3-(Trimethoxysilyl) propyl)-1,2-ethanediamine | 1760-24-3 | >= 0.5489 - <= 0.8838 % |
| Vinyltri (methylethylketoxime) silane | 2224-33-1 | >= 0.1429 - <= 0.4965 % |
| Methyltri(ethylmethylketoxime)silane isomers and oligomers | Not available | >= 0.3169 - <= 0.4245 % |

| | | |
|--|------------|--------------------------------|
| Quartz | 14808-60-7 | $\geq 0.3057 - \leq 0.3583 \%$ |
| Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)s tannane | 68928-76-7 | $\geq 0.0476 - \leq 0.149 \%$ |

SECTION 4: FIRST AID MEASURES

Description of first aid measures

General advice:

First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air and keep comfortable for breathing. If not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

Skin contact: Remove material from skin immediately by washing with soap and plenty of water. Remove contaminated clothing and shoes while washing. Seek medical attention if irritation or rash occurs. Wash clothing before reuse. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands.

Eye contact: Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

Ingestion: No emergency medical treatment necessary.

Most important symptoms and effects, both acute and delayed:

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed

Notes to physician: Maintain adequate ventilation and oxygenation of the patient. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

SECTION 5: FIREFIGHTING MEASURES

Hazchem Code

None Allocated

Extinguishing media

Suitable extinguishing media: Water spray. Alcohol-resistant foam. Carbon dioxide (CO₂).
Dry chemical.

Unsuitable extinguishing media: None known..

Special hazards arising from the substance or mixture

Hazardous combustion products: Metal oxides. Formaldehyde. Carbon oxides. Silicon oxides. Nitrogen oxides (NOx).

Unusual Fire and Explosion Hazards: Exposure to combustion products may be a hazard to health..

Advice for firefighters

Fire Fighting Procedures: Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations..
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. 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..

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Remove all sources of ignition. 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: Wipe up or scrape up and contain for salvage or disposal. 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. 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. Sections 13 and 15 of this SDS provide information regarding certain local or national requirements. Dispose of saturated absorbent or cleaning materials appropriately, since spontaneous heating may occur.
See sections: 7, 8, 11, 12 and 13.

SECTION 7: HANDLING AND STORAGE, INCLUDING HOW THE CHEMICAL MAY BE SAFELY USED

Precautions for safe handling: Do not get on skin or clothing. Do not swallow. Avoid contact with eyes. Protect from moisture. Take care to prevent spills, waste and minimize release to the environment. Handle in accordance with good industrial hygiene and safety practice. Use only with adequate ventilation. See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

Conditions for safe storage: Keep in properly labelled containers. Store locked up. Store in accordance with the particular national regulations.

Do not store with the following product types: Strong oxidizing agents.
Unsuitable materials for containers: Do not store in or use iron or steel containers.

SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Control parameters

If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

| Component | Regulation | Type of listing | Value |
|--|--|-----------------------------------|--|
| Calcium carbonate treated with stearic acid | Dow IHG | TWA | 1 mg/m ³ |
| | AU OEL | TWA | 10 mg/m ³ , Calcium carbonate |
| | Further information: a: This value is for inhalable dust containing no asbestos and < 1% crystalline silica | | |
| Silicon dioxide | Dow IHG | TWA Respirable dust | 2 mg/m ³ |
| | Dow IHG | TWA Total dust | 6 mg/m ³ |
| | AU OEL | TWA Respirable dust | 2 mg/m ³ |
| N-(3-(Trimethoxysilyl)propyl)-1,2-ethanediamine | Dow IHG | | See Further information |
| | Further information: Skin Sensitizer | | |
| Quartz | ACGIH | TWA Respirable particulate matter | 0.025 mg/m ³ , Silica |
| | Further information: lung cancer: Lung cancer; pulm fibrosis: Pulmonary fibrosis; A2: Suspected human carcinogen | | |
| | AU OEL | TWA Respirable dust | 0.1 mg/m ³ |
| Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane | ACGIH | TWA | 0.1 mg/m ³ , Tin |
| | Further information: A4: Not classifiable as a human carcinogen; Skin: Danger of cutaneous absorption | | |
| | ACGIH | STEL | 0.2 mg/m ³ , Tin |
| | Further information: A4: Not classifiable as a human carcinogen; Skin: Danger of cutaneous absorption | | |
| | AU OEL | TWA | 0.1 mg/m ³ , Tin |
| | Further information: Sk: Skin absorption | | |
| | AU OEL | STEL | 0.2 mg/m ³ , Tin |
| | Further information: Sk: Skin absorption | | |

The following substance(s), which have Occupational Exposure Limit(s) (OEL), may be formed during handling or processing:

Methyl ethyl ketoxime

Although some of the components of this product may have exposure guidelines, no exposure would be expected under normal handling conditions due to the physical state of the material.

Exposure controls

Engineering controls: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

Individual protection measures

Eye/face protection: Use safety glasses (with side shields).

Skin protection

Hand protection: Use chemical resistant gloves classified under standard AS/NZS 2161.10: Protective gloves against chemicals and micro-organisms. Examples of preferred glove barrier materials include: Butyl rubber. Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl alcohol ("PVA"). Polyvinyl chloride ("PVC" or "vinyl"). Viton. Examples of acceptable glove barrier materials include: Natural rubber ("latex"). When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to AS/NZS 2161.10) is recommended. When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to AS/NZS 2161.10) is recommended. **NOTICE:** The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Other protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions, no respiratory protection should be needed; however, if handling at elevated temperatures without sufficient ventilation, use an approved air-purifying respirator.

The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

Other Information: Selection and use of personal protective equipment should be in accordance with the recommendations in one or more of the relevant Australian/New Zealand Standards, including:
AS/NZS 1336: Eye and face protection – Guidelines.
AS/NZS 1337: Personal eye protection - Eye and face protectors for occupational applications.
AS/NZS 1715: Selection, use and maintenance of respiratory protective equipment.
AS/NZS 2161: Occupational protective gloves.
AS/NZS 2210: Occupational protective footwear.

AS/NZS 4501: Occupational protective clothing Set

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance

| | |
|--|--|
| Physical state | paste |
| Color | black |
| Odor | slight |
| Odor Threshold | No data available |
| pH | Not applicable |
| Melting point/range | No data available |
| Freezing point | No data available |
| Boiling point (760 mmHg) | Not applicable |
| Flash point | Not applicable |
| Evaporation Rate (Butyl Acetate = 1) | Not applicable |
| Flammability (solid, gas) | Not classified as a flammability hazard |
| Lower explosion limit | No data available |
| Upper explosion limit | No data available |
| Vapor Pressure | Not applicable |
| Relative Vapor Density (air = 1) | No data available |
| Relative Density (water = 1) | 1.38 |
| Water solubility | No data available |
| Partition coefficient: n-octanol/water | No data available |
| Auto-ignition temperature | No data available |
| Decomposition temperature | No data available |
| Dynamic Viscosity | Not applicable |
| Kinematic Viscosity | Not applicable |
| Explosive properties | Not explosive |
| Oxidizing properties | The substance or mixture is not classified as oxidizing. |
| Molecular weight | No data available |
| Particle size | No data available |

NOTE: The physical data presented above are typical values and should not be construed as a specification.

SECTION 10: STABILITY AND REACTIVITY

Reactivity: Not classified as a reactivity hazard.

Chemical stability: Stable under normal conditions.

Possibility of hazardous reactions: Can react with strong oxidizing agents.

Conditions to avoid: Do not expose to temperatures above 212 °F/100 °C. Exposure to moisture

Incompatible materials: Oxidizing agents

Hazardous decomposition products:

Decomposition products can include and are not limited to: Formaldehyde. Methyl Ethyl Ketoxime.

SECTION 11: TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data is available.

Exposure routes

Eye contact, Skin contact, Ingestion.

Acute toxicity (represents short term exposures with immediate effects - no chronic/delayed effects known unless otherwise noted)

Acute oral toxicity

Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

As product: Single dose oral LD50 has not been determined.

Based on information for component(s):

LD50, > 5,000 mg/kg Estimated.

Information for components:

Calcium carbonate treated with stearic acid

Single dose oral LD50 has not been determined.

For similar material(s): LD50, Rat, > 2,000 mg/kg No deaths occurred at this concentration.

Silicon dioxide

LD50, Rat, > 5,000 mg/kg

2-Butanone, O,O',O''-(methylsilyldiyl)trioxime

LD50, Rat, male and female, 2,463 mg/kg OECD Test Guideline 401

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

LD50, Rat, male and female, 2,295 mg/kg OPPTS 870.1100

Vinyltri (methylethylketoxime) silane

LD50, Rat, > 2,000 mg/kg

Methyltri(ethylmethylketoxime)silane isomers and oligomers

Single dose oral LD50 has not been determined.

Quartz

Single dose oral LD50 has not been determined.

Bis(2-ethyl-2,5-dimethylhexanoyl)oxy(dimethyl)stannane

LD50, Rat, 894 mg/kg

Acute dermal toxicity

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

As product: The dermal LD50 has not been determined.

Based on information for component(s):

LD50, > 2,000 mg/kg Estimated.

Information for components:

Calcium carbonate treated with stearic acid

The dermal LD50 has not been determined.

Silicon dioxide

LD50, Rabbit, > 5,000 mg/kg

2-Butanone, O,O',O''-(methylsilyldiyl)trioxime

LD50, Rat, male and female, > 2,000 mg/kg OECD Test Guideline 402 No deaths occurred at this concentration.

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

LD50, Rabbit, > 2,000 mg/kg No deaths occurred at this concentration.

Vinyltri (methylethylketoxime) silane

LD50, Rat, > 2,000 mg/kg

Methyltri(ethylmethylketoxime)silane isomers and oligomers

The dermal LD50 has not been determined.

Quartz

The dermal LD50 has not been determined.

Bis(2-ethyl-2,5-dimethylhexanoyl)oxy(dimethyl)stannane

LD50, Rat, > 2,000 mg/kg

Acute inhalation toxicity

Brief exposure (minutes) is not likely to cause adverse effects. Vapor from heated material may cause respiratory irritation. Symptoms of excessive exposure may be anesthetic or narcotic effects; dizziness and drowsiness may be observed.

As product: The LC50 has not been determined.

Information for components:

Calcium carbonate treated with stearic acid

Dust may cause irritation to upper respiratory tract (nose and throat).

The LC50 has not been determined.

Silicon dioxide

Maximum attainable concentration. LC50, Rat, 4 Hour, dust/mist, > 2.08 mg/l No deaths occurred at this concentration.

2-Butanone, O,O',O''-(methylsilyldyne)trioxime

The LC50 has not been determined.

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

LC50, Rat, 4 Hour, dust/mist, 1.49 - 2.44 mg/l OECD Test Guideline 403

Vinyltri (methylethylketoxime) silane

The LC50 has not been determined.

Methyltri(ethylmethylketoxime)silane isomers and oligomers

The LC50 has not been determined.

Quartz

The LC50 has not been determined.

Bis[2-ethyl-2,5-dimethylhexanoyl]oxy(dimethyl)stannane

The LC50 has not been determined.

Skin corrosion/irritation

Based on information for component(s):

Brief contact is essentially nonirritating to skin.

Information for components:

Calcium carbonate treated with stearic acid

Essentially nonirritating to skin.

May cause drying and flaking of the skin.

Silicon dioxide

Brief contact is essentially nonirritating to skin.

May cause skin irritation due to mechanical abrasion.

May cause drying and flaking of the skin.

2-Butanone, O,O',O''-(methylsilyldyne)trioxime

Brief contact may cause slight skin irritation with local redness.

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

Brief contact may cause moderate skin irritation with local redness.

Vinyltri (methylethylketoxime) silane

Brief contact may cause slight skin irritation with local redness.

Methyltri(ethylmethylketoxime)silane isomers and oligomers

Brief contact may cause slight skin irritation with local redness.

Quartz

May cause skin irritation due to mechanical abrasion.

May cause drying and flaking of the skin.

Bis(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane

Brief contact may cause slight skin irritation with local redness.

Serious eye damage/eye irritation

Based on information for component(s):

May cause slight eye irritation.

May cause mild eye discomfort.

Information for components:

Calcium carbonate treated with stearic acid

May cause slight temporary eye irritation.

Dust may irritate eyes.

Silicon dioxide

Solid or dust may cause irritation or corneal injury due to mechanical action.

2-Butanone, O,O',O''-(methylsilyldi)trioxime

May cause moderate eye irritation.

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

May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Chemical burns may occur.

Vinyltri (methylethylketoxime) silane

May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Chemical burns may occur.

Methyltri(ethylmethylketoxime)silane isomers and oligomers

May cause slight eye irritation.

Quartz

Solid or dust may cause irritation or corneal injury due to mechanical action.

Bis(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane

May cause slight eye irritation.

May cause slight temporary corneal injury.

Sensitization

For skin sensitization:

Contains component(s) which have caused allergic skin sensitization in guinea pigs.

Contains component(s) which have demonstrated the potential for contact allergy in mice.

For respiratory sensitization:

No relevant data found.

Information for components:

Calcium carbonate treated with stearic acid

For skin sensitization:

No relevant data found.

For respiratory sensitization:
No relevant data found.

Silicon dioxide

Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

2-Butanone, O,O',O''-(methylsilyldiyl)trioxime

Has demonstrated the potential for contact allergy in mice.

For respiratory sensitization:
No relevant data found.

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

Has caused allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

Vinyltri (methylethylketoxime) silane

Has caused allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

Methyltri(ethylmethylketoxime)silane isomers and oligomers

Has caused allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

Quartz

For skin sensitization:
No relevant data found.

For respiratory sensitization:
No relevant data found.

Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane

For skin sensitization:
No relevant data found.

For respiratory sensitization:
No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Information for components:

Calcium carbonate treated with stearic acid

Available data are inadequate to determine single exposure specific target organ toxicity.

Silicon dioxide

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

2-Butanone, O,O',O''-(methylsilyldiyl)trioxime

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

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

Available data are inadequate to determine single exposure specific target organ toxicity.

Vinyltri (methylethylketoxime) silane

Available data are inadequate to determine single exposure specific target organ toxicity.

Methyltri(ethylmethylketoxime)silane isomers and oligomers

Available data are inadequate to determine single exposure specific target organ toxicity.

Quartz

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane

Available data are inadequate to determine single exposure specific target organ toxicity.

Aspiration Hazard

Based on physical properties, not likely to be an aspiration hazard.

Information for components:

Calcium carbonate treated with stearic acid

Based on physical properties, not likely to be an aspiration hazard.

Silicon dioxide

Based on physical properties, not likely to be an aspiration hazard.

2-Butanone, O,O',O''-(methylsilyldiyl)trioxime

Based on available information, aspiration hazard could not be determined.

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

Based on available information, aspiration hazard could not be determined.

Vinyltri (methylethylketoxime) silane

Based on available information, aspiration hazard could not be determined.

Methyltri(ethylmethylketoxime)silane isomers and oligomers

Based on physical properties, not likely to be an aspiration hazard.

Quartz

Based on physical properties, not likely to be an aspiration hazard.

Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane

Based on physical properties, not likely to be an aspiration hazard.

Chronic toxicity (represents longer term exposures with repeated dose resulting in chronic/delayed effects - no immediate effects known unless otherwise noted)

Specific Target Organ Systemic Toxicity (Repeated Exposure)

Contains component(s) which have been reported to cause effects on the following organs in animals:
Blood.

Information for components:

Calcium carbonate treated with stearic acid

Repeated exposures to dusts of this material are not anticipated to result in systemic toxicity or permanent lung injury; however, excessive exposures may cause less severe respiratory effects.

Silicon dioxide

No relevant data found.

2-Butanone, O,O',O''-(methylsilyldyne)trioxime

For similar material(s):

In animals, effects have been reported on the following organs:
Blood

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

In animals, effects have been reported on the following organs:
Respiratory tract.

Vinyltri (methylethylketoxime) silane

In animals, effects have been reported on the following organs:
Blood.

Methyltri(ethylmethylketoxime)silane isomers and oligomers

For similar material(s):

In animals, effects have been reported on the following organs:
Blood

Quartz

In humans, effects have been reported on the following organs:
Kidney.

Repeated excessive exposure to crystalline silica may cause silicosis, a progressive and disabling disease of the lungs.

Due to the physical state of the material, this component is not expected to be bioavailable under normal handling and processing conditions.

Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane

For similar material(s):

In animals, effects have been reported on the following organs:
Central nervous system.

Thymus.

Carcinogenicity

Based on information for component(s): Has caused cancer in laboratory animals. 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. Did not

cause cancer in long-term animal studies which used routes of exposure considered relevant to industrial handling. Positive results have been reported in other studies using routes of exposure not relevant to industrial handling. Contains an additional component(s) that is not expected to be bioavailable due to the physical state of the material under normal handling and processing conditions.

Information for components:

Calcium carbonate treated with stearic acid

No relevant data found.

Silicon dioxide

No relevant data found.

2-Butanone, O,O',O''-(methylsilyldiyl)trioxime

No relevant data found.

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

No relevant data found.

Vinyltri (methylethylketoxime) silane

No relevant data found.

Methyltri(ethylmethylketoxime)silane isomers and oligomers

No relevant data found.

Quartz

Has caused cancer in humans. Has caused cancer in laboratory animals. Due to the physical state of the material, this component is not expected to be bioavailable under normal handling and processing conditions.

Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane

No relevant data found.

Teratogenicity

Contains component(s) which caused birth defects in laboratory animals only at doses toxic to the mother.

No relevant data found.

Information for components:

Calcium carbonate treated with stearic acid

For similar material(s): Did not cause birth defects or any other fetal effects in laboratory animals.

Silicon dioxide

No relevant data found.

2-Butanone, O,O',O''-(methylsilyldiyl)trioxime

Did not cause birth defects or other effects in the fetus even at doses which caused toxic effects in the mother.

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

Did not cause birth defects in laboratory animals.

Vinyltri (methylethylketoxime) silane

No relevant data found.

Methyltri(ethylmethylketoxime)silane isomers and oligomers

No relevant data found.

Quartz

For similar material(s): Did not cause birth defects or any other fetal effects in laboratory animals.

Bis(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane

For similar material(s): Has caused birth defects in laboratory animals only at doses toxic to the mother.

Reproductive toxicity

Contains component(s) which have been shown to interfere with reproduction in animal studies.

Information for components:

Calcium carbonate treated with stearic acid

For similar material(s): In animal studies, did not interfere with fertility. In animal studies, did not interfere with reproduction.

Silicon dioxide

No relevant data found.

2-Butanone, O,O',O''-(methylsilyldyne)trioxime

In animal studies, did not interfere with fertility. In animal studies, did not interfere with reproduction.

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

In animal studies, did not interfere with reproduction.

Vinyltri (methylethylketoxime) silane

No relevant data found.

Methyltri(ethylmethylketoxime)silane isomers and oligomers

No relevant data found.

Quartz

No relevant data found.

Bis(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane

For this family of materials: In animal studies, has been shown to interfere with reproduction.

Mutagenicity

Contains a component(s) which were negative in in vitro genetic toxicity studies. Contains component(s) which were negative in animal genetic toxicity studies.

Information for components:

Calcium carbonate treated with stearic acid

For similar material(s): In vitro genetic toxicity studies were negative.

Silicon dioxide

In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

2-Butanone, O,O',O''-(methylsilyldiyl)trioxime

In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

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

In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

Vinyltri (methylethylketoxime) silane

In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

Methyltri(ethylmethylketoxime)silane isomers and oligomers

No relevant data found.

Quartz

In vitro genetic toxicity studies were negative in some cases and positive in other cases.

Bis[2-ethyl-2,5-dimethylhexanoyl]oxy(dimethyl)stannane

In vitro genetic toxicity studies were negative in some cases and positive in other cases.
Animal genetic toxicity studies were negative.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicological information appears in this section when such data is available.

Ecotoxicity

Calcium carbonate treated with stearic acid

Acute toxicity to fish

No relevant data found.

Silicon dioxide

Acute toxicity to fish

Material is practically non-toxic to aquatic organisms on an acute basis
(LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).
LC50, Danio rerio (zebra fish), 96 Hour, 5,000 - 10,000 mg/l

Acute toxicity to aquatic invertebrates

EC50, Daphnia magna (Water flea), 24 Hour, > 1,000 mg/l

Acute toxicity to algae/aquatic plants

EC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, Biomass, 440 mg/l

2-Butanone, O,O',O''-(methylsilyldiyl)trioxime

Acute toxicity to fish

Material is practically non-toxic to aquatic organisms on an acute basis
(LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

For the hydrolysis product(s)
LC50, Oncorhynchus mykiss (rainbow trout), Static, 96 Hour, > 120 mg/l, OECD Test Guideline 203

Acute toxicity to aquatic invertebrates

For the hydrolysis product(s)
EC50, Daphnia magna (Water flea), static test, 48 Hour, > 120 mg/l, OECD Test Guideline 202

Acute toxicity to algae/aquatic plants

For the hydrolysis product(s)
EC50, Selenastrum capricornutum (green algae), Static, 72 Hour, Growth rate, 94 mg/l, OECD Test Guideline 201

For the hydrolysis product(s)
NOEC, Selenastrum capricornutum (green algae), Static, 72 Hour, Growth rate, 30 mg/l, OECD Test Guideline 201

Chronic toxicity to fish

NOEC, Oryzias latipes (Orange-red killifish), flow-through test, 14 d, 50 mg/l

Chronic toxicity to aquatic invertebrates

NOEC, Daphnia magna, semi-static test, 21 d, > 100 mg/l

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

Acute toxicity to fish

Material is toxic to aquatic organisms (LC50/EC50/IC50 between 1 and 10 mg/L in the most sensitive species).

For the hydrolysis product(s)
LC50, zebra fish (Brachydanio rerio), 96 Hour, 597 mg/l

Acute toxicity to aquatic invertebrates

For the hydrolysis product(s)
EC50, Daphnia magna (Water flea), 48 Hour, 81 mg/l

Acute toxicity to algae/aquatic plants

For the hydrolysis product(s)
ErC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, Growth rate inhibition, 8.8 mg/l

For the hydrolysis product(s)
NOEC, Pseudokirchneriella subcapitata (green algae), 72 Hour, Growth rate inhibition, 3.1 mg/l

Toxicity to bacteria

For the hydrolysis product(s)
EC50, Pseudomonas putida, 16 Hour, Growth inhibition, 67 mg/l

Chronic toxicity to aquatic invertebrates

For the hydrolysis product(s)
NOEC, Daphnia magna (Water flea), semi-static test, 21 d, number of offspring, > 1 mg/l

Toxicity to Above Ground Organisms

Material is moderately toxic to birds on an acute basis (LD50 between 51 and 500 mg/kg).

Toxicity to soil-dwelling organisms

NOEC, Eisenia fetida (earthworms), 14 d, >= 1,000 mg/kg

Vinyltri (methylethylketoxime) silane

Acute toxicity to fish

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

LC50, Oncorhynchus mykiss (rainbow trout), 96 Hour, > 120 mg/l, OECD Test Guideline 203

LC50, Oryzias latipes (Orange-red killifish), 96 Hour, > 100 mg/l, OECD Test Guideline 203

Methyltri(ethylmethylketoxime)silane isomers and oligomers

Acute toxicity to fish

No relevant data found.

Quartz

Acute toxicity to fish

Not expected to be acutely toxic to aquatic organisms.

Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane

Acute toxicity to fish

Material is slightly toxic to aquatic organisms on an acute basis (LC50/EC50 between 10 and 100 mg/L in the most sensitive species tested).

For similar material(s):

LC50, Zebra fish (Danio/Brachydanio rerio), semi-static test, 96 Hour, > 100 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates

For similar material(s):

EC50, Daphnia magna, static test, 48 Hour, 17 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants

For similar material(s):

ErC50, Algae (Scenedesmus subspicatus), Growth rate, 72 Hour, Growth rate, 37 mg/l, OECD Test Guideline 201 or Equivalent

For similar material(s):

NOEC, Algae (Scenedesmus subspicatus), Growth rate, 72 Hour, Growth rate, 1.1 mg/l, OECD Test Guideline 201 or Equivalent

Toxicity to bacteria

For similar material(s):

EC50, Bacteria, 3 Hour, Respiration rates., 14 mg/l

Persistence and degradability

Calcium carbonate treated with stearic acid

Biodegradability: No relevant data found.

Silicon dioxide

Biodegradability: Biodegradation is not applicable.

2-Butanone, O,O',O''-(methylsilylidyne)trioxime

Biodegradability: Based on information for a similar material: This material rapidly hydrolyzes to products that are either readily or ultimately biodegradable.

10-day Window: Fail
Biodegradation: 0 %
Exposure time: 28 d
Method: OECD Test Guideline 301A

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

Biodegradability: Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.

10-day Window: Fail
Biodegradation: 39 %
Exposure time: 28 d
Method: OECD Test Guideline 301A or Equivalent

Theoretical Oxygen Demand: 2.39 mg/mg Estimated.

Chemical Oxygen Demand: 1.76 mg/mg Estimated.

Biological oxygen demand (BOD)

| Incubation Time | BOD |
|-----------------|------|
| 5 d | 23 % |
| 10 d | 30 % |
| 20 d | 29 % |

Stability in Water (1/2-life)
Hydrolysis, half-life, 0.025 Hour, pH 7

Photodegradation
Test Type: Half-life (indirect photolysis)
Sensitization: OH radicals
Atmospheric half-life: 0.088 d
Method: Estimated.

Vinyltri (methylethylketoxime) silane

Biodegradability: Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.

10-day Window: Fail
Biodegradation: 0 %
Exposure time: 28 d
Method: OECD Test Guideline 301A

Stability in Water (1/2-life)
Hydrolysis, DT50, < 1 min, Half-life Temperature 2 °C, OECD Test Guideline 111

Methyltri(ethylmethylketoxime)silane isomers and oligomers

Biodegradability: No relevant data found.

Quartz

Biodegradability: Biodegradation is not applicable.

Bis(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane

Biodegradability: For similar material(s): Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.

For similar material(s): 10-day Window: Fail

Biodegradation: 3 %

Exposure time: 28 d

Method: OECD Test Guideline 301F or Equivalent

Bioaccumulative potential

Calcium carbonate treated with stearic acid

Bioaccumulation: No relevant data found.

Silicon dioxide

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient: n-octanol/water(log Pow): 0.53

Bioconcentration factor (BCF): 3.16

2-Butanone, O,O',O''-(methylsilyldi)trioxime

Bioaccumulation: Bioconcentration potential is low (BCF less than 100 or log Pow greater than 7).

Partition coefficient: n-octanol/water(log Pow): 11.2

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

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient: n-octanol/water(log Pow): < 3 estimated

Vinyltri (methylethylketoxime) silane

Bioaccumulation: No relevant data found.

Methyltri(ethylmethylketoxime)silane isomers and oligomers

Bioaccumulation: No relevant data found.

Quartz

Bioaccumulation: Partitioning from water to n-octanol is not applicable.

Bis(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane

Bioaccumulation: No relevant data found.

Mobility in Soil

Calcium carbonate treated with stearic acid

No relevant data found.

Silicon dioxide

Potential for mobility in soil is very high (Koc between 0 and 50).

Partition coefficient (Koc): 21.73

2-Butanone, O,O',O''-(methylsilyldi)trioxime

No relevant data found.

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

Expected to be relatively immobile in soil (Koc > 5000).

Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

Partition coefficient (Koc): > 5000 Estimated.

Vinyltri (methylethylketoxime) silane

No relevant data found.

Methyltri(ethylmethylketoxime)silane isomers and oligomers

No relevant data found.

Quartz

No relevant data found.

Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane

No relevant data found.

Results of PBT and vPvB assessment

Calcium carbonate treated with stearic acid

This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Silicon dioxide

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

2-Butanone, O,O',O''-(methylsilylidyne)trioxime

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

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

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Vinyltri (methylethylketoxime) silane

This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Methyltri(ethylmethylketoxime)silane isomers and oligomers

This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Quartz

This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane

This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Other adverse effects

Calcium carbonate treated with stearic acid

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Silicon dioxide

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

2-Butanone, O,O',O''-(methylsilylidyne)trioxime

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

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

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Vinyltri (methylethylketoxime) silane

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Methyltri(ethylmethylketoxime)silane isomers and oligomers

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Quartz

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Bis(2-ethyl-2,5-dimethylhexanoyl)oxy(dimethyl)stannane

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

SECTION 13: DISPOSAL CONSIDERATIONS

Disposal methods: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Recycler. Reclaimer. Incinerator or other thermal destruction device. For additional information, refer to: Handling & Storage Information, MSDS Section 7 Stability & Reactivity Information, MSDS Section 10 Regulatory Information, MSDS Section 15

Treatment and disposal methods of used packaging: Empty containers should be recycled or otherwise disposed of by an approved waste management facility. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. Do not re-use containers for any purpose.

SECTION 14: TRANSPORT INFORMATION

ADG

Not regulated for transport

Classification for SEA transport (IMO-IMDG):

Not regulated for transport

**Transport in bulk
according to Annex I or II
of MARPOL 73/78 and the**

Consult IMO regulations before transporting ocean bulk

IBC or IGC Code

Classification for AIR transport (IATA/ICAO):

Not regulated for transport

Hazchem Code

None Allocated

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

SECTION 15: REGULATORY INFORMATION

Poison Schedule

Not Scheduled

Australia Inventory of Chemical Substances (AICS)

All ingredients in this preparation are listed in the Australian Inventory of Chemical Substances, AICS, or are exempt.

Prohibition/Licensing Requirements : Refer to model WHS Act and Regulations for prohibition, authorisation and restricted use.

SECTION 16: ANY OTHER RELEVANT INFORMATION

Revision

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Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

| | |
|---------|--|
| ACGIH | USA. ACGIH Threshold Limit Values (TLV) |
| AU OEL | Australia. Workplace Exposure Standards for Airborne Contaminants. |
| Dow IHG | Dow Industrial Hygiene Guideline |
| STEL | Exposure standard - short term exposure limit |
| TWA | Time weighted average |

Full text of other abbreviations

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; 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; IECS - 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

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