SAFETY DATA SHEET
DOW CHEMICAL (AUSTRALIA) PTY LTD

Product name: DOWSIL™ 680 Sanitary Sealant Dark Beige **Issue Date:** 22.08.2023
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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™ 680 Sanitary Sealant Dark Beige

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 corrosion/irritation - Category 2
Serious eye damage/eye irritation - Category 2A
Skin sensitisation - Category 1
Reproductive toxicity - Category 1B
Short-term (acute) aquatic hazard - Category 3
Long-term (chronic) aquatic hazard - Category 3

GHS label elements
Hazard pictograms

Signal word: **DANGER!**

Hazard statements
Causes skin irritation.
May cause an allergic skin reaction.
Causes serious eye irritation.
May damage the unborn child.
Harmful to aquatic life with long lasting effects.

Precautionary statements

Prevention
Obtain special instructions before use.
Avoid breathing dust.
Wash skin thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Avoid release to the environment.
Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

Response
IF exposed or concerned: Get medical advice/ attention.
If skin irritation or rash occurs: Get medical advice/ attention.
If eye irritation persists: Get medical advice/ attention.
Take off contaminated clothing and wash it before reuse.

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
Silicon dioxide	7631-86-9	>= 6.0 - <= 10.0 %
2-Butanone, O,O',O''-(methylsilylidyne)trioxime	22984-54-9	>= 2.7 - <= 5.5 %
Distillates (petroleum),	64742-46-7	>= 2.5 - <= 5.0 %

hydrotreated middle		
Iron oxide (Fe2O3)	1309-37-1	<= 3.0 %
Carbon black	1333-86-4	<= 3.0 %
Chromium oxide (Cr2O3)	1308-38-9	<= 1.5 %
Titanium dioxide	13463-67-7	<= 1.5 %
Vinyltri (methylethylketoxime) silane	2224-33-1	<= 1.4 %
3-Aminopropyltriethoxysilane	919-30-2	>= 0.4 - <= 1.1 %
Methyltri(ethylmethylketoxime)silane isomers and oligomers	Not available	<= 0.53 %
Propiconazole	60207-90-1	>= 0.08 - <= 0.45 %
Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane	68928-76-7	>= 0.05 - <= 0.2 %

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. Suitable emergency safety shower facility should be available in work area.

Eye contact: Immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes, then continue flushing eyes for at least 15 minutes. Obtain medical attention without delay,

preferably from an ophthalmologist. Suitable emergency eye wash facility should be immediately available.

Ingestion: If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

Most important symptoms and effects, both acute and delayed:
Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. May damage the unborn child.

Indication of any immediate medical attention and special treatment needed
Notes to physician: Maintain adequate ventilation and oxygenation of the patient. If burn is present, treat as any thermal burn, after decontamination. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Skin contact may aggravate preexisting dermatitis.

SECTION 5: FIREFIGHTING MEASURES

Hazchem Code
None Allocated

Extinguishing media

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

Unsuitable extinguishing media: None known..

Special hazards arising from the substance or mixture

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

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

Advice for firefighters

Fire Fighting Procedures: Use water spray to cool unopened containers.. Evacuate area.. Collect contaminated fire extinguishing water separately. This must not be discharged into drains.. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage..
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Remove undamaged containers from fire area if it is safe to do so.

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: Do not release the product to the aquatic environment above defined regulatory levels 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. 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. Do not get in eyes. Keep container tightly closed. 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. CONTAINERS MAY BE HAZARDOUS WHEN EMPTY. Since emptied containers retain product residue follow all (M)SDS and label warnings even after container is emptied.
Use with local exhaust ventilation. See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

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

Do not store with the following product types: Strong oxidizing agents. Organic peroxides. Explosives. Gases.
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
Silicon dioxide	Dow IHG	TWA Respirable dust	2 mg/m3
	Dow IHG	TWA Total dust	6 mg/m3
	AU OEL	TWA Respirable dust	2 mg/m3
Distillates (petroleum), hydrotreated middle	AU OEL	TWA Mist	5 mg/m3
Iron oxide (Fe2O3)	AU OEL	TWA Fumes	5 mg/m3 , Iron

Carbon black	ACGIH	TWA Inhalable particulate matter	3 mg/m3
	Further information: bronchitis: Bronchitis; A3: Confirmed animal carcinogen with unknown relevance to humans		
	AU OEL	TWA	3 mg/m3
Chromium oxide (Cr2O3)	ACGIH	TWA Inhalable fraction	0.003 mg/m3 , chromium
	Further information: URT irr: Upper Respiratory Tract irritation; skin irr: Skin irritation; A4: Not classifiable as a human carcinogen; varies: varies		
	AU OEL	TWA	0.5 mg/m3 , chromium
Titanium dioxide	Dow IHG	TWA	2.4 mg/m3
	ACGIH	TWA	2.5 mg/m3
	Further information: A3: Confirmed animal carcinogen with unknown relevance to humans		
	AU OEL	TWA	10 mg/m3
	Further information: a: This value is for inhalable dust containing no asbestos and < 1% crystalline silica		
3-Aminopropyltriethoxysilane	Dow IHG	TWA	0.5 mg/m3
Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane	ACGIH	TWA	0.1 mg/m3 , Tin
	Further information: A4: Not classifiable as a human carcinogen; Skin: Danger of cutaneous absorption		
	ACGIH	STEL	0.2 mg/m3 , Tin
	Further information: A4: Not classifiable as a human carcinogen; Skin: Danger of cutaneous absorption		
	AU OEL	TWA	0.1 mg/m3 , Tin
	Further information: Sk: Skin absorption		
	AU OEL	STEL	0.2 mg/m3 , Tin
	Further information: Sk: Skin absorption		
Methyl Ethyl Ketoxime	US WEEL	TWA	10 ppm
	Further information: DSEN: Dermal Sensitization Notation		
	Dow IHG	TWA	0.15 ppm
	Further information: Skin Sensitizer		
Ethanol	ACGIH	TWA	1,000 ppm
	Further information: URT irr: Upper Respiratory Tract irritation		
	ACGIH	STEL	1,000 ppm
	Further information: URT irr: Upper Respiratory Tract irritation		
	AU OEL	TWA	1,880 mg/m3 1,000 ppm

The following substance(s), which have Occupational Exposure Limit(s) (OEL), may be formed during handling or processing:
Methyl ethyl ketoxime
Ethanol
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 chemical goggles.

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. Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl chloride ("PVC" or "vinyl"). 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 discomfort is experienced, use an approved air-purifying respirator.
The following should be effective types of air-purifying respirators: Multi-gas cartridge.

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	in accordance with the product description
Odor	not significant
Odor Threshold	No data available
pH	Not applicable
Melting point/freezing point	

Melting point/range	No data available
Freezing point	No data available
Boiling point, initial boiling point and boiling range	
Boiling point (760 mmHg)	Not applicable
Flash point	Not applicable
Evaporation Rate (Butyl Acetate = 1)	Not applicable
Flammability	
Flammability (solid, gas)	Not classified as a flammability hazard
Flammability (liquids)	No data available
Upper/lower flammability or explosive limits	
Lower explosion limit	No data available
Upper explosion limit	No data available
Vapor Pressure	Not applicable
Relative vapour density	
Relative Vapor Density (air = 1)	No data available
Density and / or relative density	
Relative Density (water = 1)	0.985
Solubility(ies)	
Water solubility	No data available
Partition coefficient: n-octanol/water (log value)	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 characteristics	
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: Avoid contact with oxidizing materials.

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

SECTION 11: TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data are 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 Toxicity Endpoints:
Not classified based on available information.

Acute oral toxicity

Information for the Product:

Very low toxicity if swallowed. Swallowing may result in irritation of the mouth, throat, and gastrointestinal tract. May cause nausea and vomiting.

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

Based on information for component(s):
LD50, Rat, > 5,000 mg/kg Estimated.

Information for components:

Silicon dioxide
LD50, Rat, > 5,000 mg/kg

2-Butanone, O,O',O''-(methylsilylidyne)trioxime
LD50, Rat, male and female, 2,463 mg/kg OECD Test Guideline 401

Distillates (petroleum), hydrotreated middle
For similar material(s): LD50, Rat, male and female, > 5,000 mg/kg OECD 401 or equivalent

Iron oxide (Fe2O3)
LD50, Rat, > 10,000 mg/kg

Carbon black
LD50, Rat, > 8,000 mg/kg

Chromium oxide (Cr2O3)
LD50, Rat, male, > 15,000 mg/kg OECD Test Guideline 401

Titanium dioxide
LD50, Rat, > 10,000 mg/kg

Vinyltri (methylethylketoxime) silane
LD50, Rat, > 2,000 mg/kg

3-Aminopropyltriethoxysilane
LD50, Rat, female, 1,479 mg/kg

LD50, Rat, male, 2,665 mg/kg

Methyltri(ethylmethylketoxime)silane isomers and oligomers
For similar material(s): LD50, Rat, male and female, 2,463 mg/kg OECD Test Guideline 401

Propiconazole
LD50, Rat, female, 550 mg/kg OECD Test Guideline 425

Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane
LD50, Rat, male and female, 892 mg/kg OECD 401 or equivalent

Acute dermal toxicity

Information for the Product:

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, Rabbit, > 2,000 mg/kg Estimated.

Information for components:

Silicon dioxide
LD50, Rabbit, > 5,000 mg/kg

2-Butanone, O,O',O''-(methylsilylidyne)trioxime
LD50, Rat, male and female, > 2,000 mg/kg OECD Test Guideline 402 No deaths occurred at this concentration.

Distillates (petroleum), hydrotreated middle
For similar material(s): LD50, Rabbit, male and female, > 2,000 mg/kg OECD 402 or equivalent No deaths occurred at this concentration.

Iron oxide (Fe2O3)
The dermal LD50 has not been determined.

Carbon black
LD50, Rabbit, > 3,000 mg/kg No deaths occurred at this concentration.

Chromium oxide (Cr2O3)
The dermal LD50 has not been determined.

Titanium dioxide
LD50, Rabbit, 10,000 mg/kg

Vinyltri (methylethylketoxime) silane
LD50, Rat, > 2,000 mg/kg

3-Aminopropyltriethoxysilane
Based on product testing: LD50, Rabbit, male and female, 4,041 mg/kg

Methyltri(ethylmethylketoxime)silane isomers and oligomers
For similar material(s): LD50, Rat, male and female, > 2,000 mg/kg OECD Test Guideline 402 No deaths occurred at this concentration.

Propiconazole
LD50, Rat, male and female, > 5,000 mg/kg OECD 402 or equivalent No deaths occurred at this concentration.

Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane
LD50, Rat, > 2,000 mg/kg

Acute inhalation toxicity

Information for the Product:

At room temperature, exposure to vapor is minimal due to low volatility. Excessive exposure may cause irritation to upper respiratory tract (nose and throat). 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:

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''-(methylsilylidyne)trioxime
The LC50 has not been determined.

Distillates (petroleum), hydrotreated middle
LC50, Rat, 4 Hour, dust/mist, > 5.2 mg/l No deaths occurred at this concentration.

Iron oxide (Fe2O3)
Vapors are unlikely due to physical properties. Dust may cause irritation to upper respiratory tract (nose and throat).

As product: The LC50 has not been determined.

Carbon black
LC50, Rat, 1 Hour, dust/mist, 27 mg/l No deaths occurred at this concentration.

Chromium oxide (Cr2O3)
No adverse effects are anticipated from single exposure to dust. Excessive exposure may cause irritation to upper respiratory tract (nose and throat) and lungs.

LC50, Rat, male and female, 4 Hour, dust/mist, > 5.41 mg/l OECD Test Guideline 403

Titanium dioxide
LC50, Rat, male, 4 Hour, dust/mist, > 6.82 mg/l No deaths occurred at this concentration.

Vinyltri (methylethylketoxime) silane
The LC50 has not been determined.

3-Aminopropyltriethoxysilane
Based on product testing: LC50, Rat, male, 6 Hour, vapour, > 5 ppm No deaths occurred at this concentration.

Based on product testing: LC50, Rat, female, 6 Hour, vapour, > 16 ppm No deaths occurred at this concentration.

Based on product testing: LC50, Rat, male and female, 4 Hour, Aerosol, > 7.35 mg/l

Methyltri(ethylmethylketoxime)silane isomers and oligomers
The LC50 has not been determined.

Propiconazole
LC50, Rat, male and female, 4 Hour, dust/mist, > 5.8 mg/l OECD Test Guideline 403

Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane
As product: The LC50 has not been determined.

Skin corrosion/irritation

Causes skin irritation.

Information for the Product:

Based on information for component(s):
Brief contact may cause moderate skin irritation with local redness.
May cause more severe response if skin is abraded (scratched or cut).
May cause more severe response on covered skin (under clothing, gloves).
May cause drying and flaking of the skin.
May stain skin.

Information for components:

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''-(methylsilylidyne)trioxime
Brief contact may cause slight skin irritation with local redness.

Distillates (petroleum), hydrotreated middle
Prolonged contact may cause skin irritation with local redness.
May cause drying and flaking of the skin.

Iron oxide (Fe2O3)
Brief contact is essentially nonirritating to skin.
Prolonged contact may cause slight skin irritation with local redness.
Repeated contact may cause slight skin irritation with local redness.
May cause more severe response if skin is abraded (scratched or cut).
May cause more severe response on covered skin (under clothing, gloves).

Carbon black
Prolonged exposure not likely to cause significant skin irritation.

Chromium oxide (Cr2O3)
Brief contact is essentially nonirritating to skin.

Titanium dioxide
Essentially nonirritating to skin.

Vinyltri (methylethylketoxime) silane
Brief contact may cause slight skin irritation with local redness.

3-Aminopropyltriethoxysilane
Brief contact may cause severe skin burns. Symptoms may include pain, severe local redness and tissue damage.

Methyltri(ethylmethylketoxime)silane isomers and oligomers
For similar material(s):
Brief contact may cause slight skin irritation with local redness.

Propiconazole
Brief contact may cause slight skin irritation with local redness.

Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane
Brief contact may cause skin irritation with local redness.

Serious eye damage/eye irritation

Causes serious eye irritation.

Information for the Product:

Based on information for component(s):
May cause moderate eye irritation which may be slow to heal.
May cause moderate corneal injury.

Information for components:

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

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

May cause slight eye irritation.
May cause slight corneal injury.

Distillates (petroleum), hydrotreated middle
May cause slight temporary eye irritation.
Corneal injury is unlikely.
Vapor may cause eye irritation experienced as mild discomfort and redness.

Iron oxide (Fe2O3)
Solid or dust may cause irritation or corneal injury due to mechanical action.

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

Chromium oxide (Cr2O3)
Essentially nonirritating to eyes.
Corneal injury is unlikely.

Titanium dioxide
Solid or dust may cause irritation due to mechanical action.

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

3-Aminopropyltriethoxysilane
May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Chemical burns may occur.
Vapor or mist may cause eye irritation.

Methyltri(ethylmethylketoxime)silane isomers and oligomers
For similar material(s):
May cause slight eye irritation.

Propiconazole
May cause slight eye irritation.
Corneal injury is unlikely.

Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane
May cause slight eye irritation.
May cause slight temporary corneal injury.

Sensitization

For skin sensitization:
May cause an allergic skin reaction.

For respiratory sensitization:
Not classified based on available information.

Information for the Product:

For skin sensitization:
A component in this mixture has been shown to be a skin sensitizer.

For respiratory sensitization:
No relevant information found.

Information for components:

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''-(methylsilylidyne)trioxime
Has caused allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

Distillates (petroleum), hydrotreated middle
For skin sensitization:
For similar material(s):
Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

Iron oxide (Fe2O3)
Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

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

For respiratory sensitization:
No relevant data found.

Chromium oxide (Cr2O3)
Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

Titanium dioxide
Did not demonstrate the potential for contact allergy in mice.
Did not cause 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.

3-Aminopropyltriethoxysilane
Has caused allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

Methyltri(ethylmethylketoxime)silane isomers and oligomers
For skin sensitization:
For similar material(s):
Has demonstrated the potential for contact allergy in mice.

For respiratory sensitization:
No relevant data found.

Propiconazole
For skin sensitization:
Has caused allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane
Has caused allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)

Not classified based on available information.

Information for the Product:

Product test data not available.

Information for components:

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

2-Butanone, O,O',O''-(methylsilylidyne)trioxime
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Distillates (petroleum), hydrotreated middle
Available data are inadequate to determine single exposure specific target organ toxicity.

Iron oxide (Fe2O3)
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

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

Chromium oxide (Cr2O3)
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

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

Vinyltri (methylethylketoxime) silane
Available data are inadequate to determine single exposure specific target organ toxicity.

3-Aminopropyltriethoxysilane
Material is corrosive. Material is not classified as a respiratory irritant; however, upper respiratory tract irritation or corrosivity may be expected.

Methyltri(ethylmethylketoxime)silane isomers and oligomers
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Propiconazole
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

Not classified based on available information.

Information for the Product:

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

Information for components:

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

2-Butanone, O,O',O''-(methylsilylidyne)trioxime
Based on physical properties, not likely to be an aspiration hazard.

Distillates (petroleum), hydrotreated middle
Aspiration into the lungs may occur during ingestion or vomiting, causing lung damage or even death due to chemical pneumonia.

Iron oxide (Fe2O3)
Based on physical properties, not likely to be an aspiration hazard.

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

Chromium oxide (Cr2O3)
Based on physical properties, not likely to be an aspiration hazard.

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

Vinyltri (methylethylketoxime) silane
Based on available information, aspiration hazard could not be determined.

3-Aminopropyltriethoxysilane
Aspiration into the respiratory system may occur during ingestion or vomiting. Due to corrosivity, tissue damage or lung injury may occur.

Methyltri(ethylmethylketoxime)silane isomers and oligomers
Based on available information, aspiration hazard could not be determined.

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

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)

Not classified based on available information.

Information for the Product:

Product test data not available.

Information for components:

Silicon dioxide
No relevant data found.

2-Butanone, O,O',O''-(methylsilylidyne)trioxime
For similar material(s):
In animals, effects have been reported on the following organs:
Blood

Distillates (petroleum), hydrotreated middle
For similar material(s):
Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

Iron oxide (Fe2O3)
Based on available data, repeated exposures are not anticipated to cause additional significant adverse effects.

Carbon black
Dust may cause irritation of the upper respiratory tract (nose and throat) and lungs.
Repeated exposures to very fine dusts may cause lung injury.
Due to the physical state of the material, this component is not expected to be bioavailable under normal handling and processing conditions.

Chromium oxide (Cr2O3)

Based on animal data, breathing high concentrations of dust may produce inflammation in the lungs.
Due to the physical state of the material, this component is not expected to be bioavailable under normal handling and processing conditions.

Titanium dioxide
Repeated excessive inhalation exposures to dusts may cause respiratory effects.
In animals, effects have been reported on the following organs:
Lung.
Due to the physical state of the material, this component is not expected to be bioavailable under normal handling and processing conditions.

Vinyltri (methylethylketoxime) silane
In animals, effects have been reported on the following organs:
Blood.

3-Aminopropyltriethoxysilane
In animals, effects have been reported on the following organs:
Liver.

Methyltri(ethylmethylketoxime)silane isomers and oligomers
For similar material(s):
In animals, effects have been reported on the following organs:
Blood

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

Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane
In animals, effects have been reported on the following organs:
Blood
Kidney
Liver
Immune system.

Carcinogenicity

Not classified based on available information.

Information for the Product:

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.

Information for components:

Silicon dioxide
No relevant data found.

2-Butanone, O,O',O''-(methylsilylidyne)trioxime
No relevant data found.

Distillates (petroleum), hydrotreated middle
For similar material(s): Did not cause cancer in laboratory animals.

Iron oxide (Fe2O3)
Did not cause cancer in laboratory animals. Excessive exposure to dust may cause siderosis, a benign accumulation of iron in the lungs. Due to the physical state of the material, this component is not expected to be bioavailable under normal handling and processing conditions.

Carbon black
Lung fibrosis and tumors have been observed in rats exposed to high concentrations of very fine carbon black particles for their lifetime. Effects are believed to be due to overloading of the normal respiratory clearance mechanisms caused by the extreme study conditions. Rats may be particularly susceptible to particle clearance overload, resulting in lung injury and tumors. No increases in tumors were observed in male or female mice exposed under the same conditions. Due to the physical state of the material, this component is not expected to be bioavailable under normal handling and processing conditions.

Chromium oxide (Cr2O3)
Did not cause cancer in laboratory animals.

Titanium dioxide
Lung fibrosis and tumors have been observed in rats exposed to titanium dioxide in two lifetime inhalation studies. Effects are believed to be due to overloading of the normal respiratory clearance mechanisms caused by the extreme study conditions. Workers exposed to titanium dioxide in the workplace have not shown an unusual incidence of chronic respiratory disease or lung cancer. Titaniumdioxide was not carcinogenic in laboratory animals in lifetime feeding studies. Due to the physical state of the material, this component is not expected to be bioavailable under normal handling and processing conditions.

Vinyltri (methylethylketoxime) silane
No relevant data found.

3-Aminopropyltriethoxysilane
Did not cause cancer in laboratory animals.

Methyltri(ethylmethylketoxime)silane isomers and oligomers
No relevant data found.

Propiconazole
Has caused cancer in some laboratory animals. However, the relevance of this to humans is unknown.

Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane
No relevant data found.

Teratogenicity

May damage the unborn child.

Information for the Product:

Product test data not available.

Information for components:

Silicon dioxide
No relevant data found.

2-Butanone, O,O',O''-(methylsilylidyne)trioxime
For similar material(s): Did not cause birth defects or any other fetal effects in laboratory animals.

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

Iron oxide (Fe2O3)
No relevant data found.

Carbon black
No relevant data found.

Chromium oxide (Cr2O3)
For similar material(s): Did not cause birth defects or any other fetal effects in laboratory animals.

Titanium dioxide
No relevant data found.

Vinyltri (methylethylketoxime) silane
No relevant data found.

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

Methyltri(ethylmethylketoxime)silane isomers and oligomers
For similar material(s): Did not cause birth defects or other effects in the fetus even at doses which caused toxic effects in the mother.

Propiconazole
Has been toxic to the fetus in laboratory animal tests. Has caused birth defects in laboratory animals.

Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane
No relevant data found.

Reproductive toxicity

May damage the unborn child.

Information for the Product:

Product test data not available.

Information for components:

Silicon dioxide
No relevant data found.

2-Butanone, O,O',O''-(methylsilylidyne)trioxime
For similar material(s): In animal studies, did not interfere with reproduction.

Distillates (petroleum), hydrotreated middle
For similar material(s): In animal studies, did not interfere with reproduction.

Iron oxide (Fe2O3)
No relevant data found.

Carbon black
No relevant data found.

Chromium oxide (Cr2O3)
In animal studies, did not interfere with fertility.

Titanium dioxide
No relevant data found.

Vinyltri (methylethylketoxime) silane
No relevant data found.

3-Aminopropyltriethoxysilane
In animal studies, did not interfere with fertility.

Methyltri(ethylmethylketoxime)silane isomers and oligomers
For similar material(s): In animal studies, did not interfere with fertility. In animal studies, did not interfere with reproduction.

Propiconazole
In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.

Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane
No relevant data found.

Mutagenicity

Not classified based on available information.

Information for the Product:

Product test data not available.

Information for components:

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

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

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

Distillates (petroleum), hydrotreated middle
In vitro genetic toxicity studies were negative. For similar material(s): Animal genetic toxicity studies were negative.

Iron oxide (Fe2O3)
For similar material(s): In vitro genetic toxicity studies were negative.

Carbon black
Animal genetic toxicity studies were negative in some cases and positive in other cases. Positive findings were observed only at doses which produced significant inflammation. Due to the physical state of the material, this component is not expected to be bioavailable under normal handling and processing conditions.

Chromium oxide (Cr2O3)
For similar material(s): In vitro genetic toxicity studies were predominantly negative.

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

Vinyltri (methylethylketoxime) silane
In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

3-Aminopropyltriethoxysilane
In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

Methyltri(ethylmethylketoxime)silane isomers and oligomers
For similar material(s): In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

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

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 are available.

Ecotoxicity

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''-(methylsilylidyne)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 similar material(s):
LC50, Fathead minnow (Pimephales promelas), Static, 96 Hour, 843 mg/l, OECD Test Guideline 203
For similar material(s):
LC50, Oryzias latipes (Japanese medaka), Static, 96 Hour, > 100 mg/l, OECD Test Guideline 203

Acute toxicity to aquatic invertebrates
For similar material(s):
EC50, Daphnia magna (Water flea), static test, 48 Hour, 201 mg/l, OECD Test Guideline 202

Acute toxicity to algae/aquatic plants
For similar material(s):
EC50, Selenastrum capricornutum (green algae), Static, 72 Hour, Growth rate, 16 mg/l, OECD Test Guideline 201
For similar material(s):
NOEC, Selenastrum capricornutum (green algae), Static, 72 Hour, Growth rate, 2.6 mg/l, OECD Test Guideline 201

Toxicity to bacteria
For similar material(s):
EC50, activated sludge, 3 Hour, Respiration rates., > 390.45 mg/l, OECD Test Guideline 209

Chronic toxicity to fish
For similar material(s):
NOEC, Oryzias latipes (Orange-red killifish), flow-through test, 14 d, mortality, 50 mg/l

Chronic toxicity to aquatic invertebrates
For similar material(s):
NOEC, Daphnia magna, semi-static test, 21 d, number of offspring, > 100 mg/l

Distillates (petroleum), hydrotreated middle

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 similar material(s):
LC50, Rainbow trout (Oncorhynchus mykiss), semi-static test, 96 Hour, 21 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates
For similar material(s):
EC50, Daphnia magna (Water flea), Static, 48 Hour, 68 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants
For similar material(s):
EL50, Pseudokirchneriella subcapitata (algae), Static, 72 Hour, Growth rate, 22 mg/l, OECD Test Guideline 201 or Equivalent
For similar material(s):
NOEL, Pseudokirchneriella subcapitata (algae), Static, 72 Hour, Growth rate, <1 mg/l, OECD Test Guideline 201 or Equivalent

Iron oxide (Fe2O3)

Acute toxicity to fish
Material is practically non-toxic to fish on an acute basis (LC50 > 100 mg/L).
LC50, Danio rerio (zebra fish), static test, 96 Hour, > 50,000 mg/l

Acute toxicity to aquatic invertebrates
EC50, Daphnia magna (Water flea), static test, 48 Hour, > 100 mg/l, OECD Test Guideline 202

Toxicity to bacteria
EC50, Pseudomonas fluorescens, 24 Hour, >5,000 mg/l
EC50, activated sludge, static test, 3 Hour, Respiration rates., > 10,000 mg/l, ISO 8192

Carbon black

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, Leuciscus idus (Golden orfe), static test, 96 Hour, > 1,000 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates
EC50, Daphnia magna (Water flea), 24 Hour, > 5,600 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants
NOEC, Desmodesmus subspicatus (green algae), 72 Hour, 10,000 mg/l, OECD Test Guideline 201

Chromium oxide (Cr2O3)

Acute toxicity to fish
Not expected to be acutely toxic to aquatic organisms.
LC50, Danio rerio (zebra fish), static test, 96 Hour, > 10,000 mg/l, ISO 7346/1

Acute toxicity to algae/aquatic plants
EC50, Desmodesmus subspicatus (green algae), 72 Hour, > 848.6 mg/l, OECD Test Guideline 201

Toxicity to bacteria
EC50, 3 Hour, > 10,000 mg/l

Chronic toxicity to fish
NOEC, Danio rerio (zebra fish), 30 d, 1,000 mg/l

Chronic toxicity to aquatic invertebrates
No toxicity at the limit of solubility
NOEC, Daphnia magna (Water flea), 21 d, > 0.02 mg/l

Titanium 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).
NOEC, Leuciscus idus (Golden orfe), static test, 48 Hour, > 1,000 mg/l

Acute toxicity to aquatic invertebrates
EC50, Daphnia magna (Water flea), static test, 48 Hour, > 1,000 mg/l

Acute toxicity to algae/aquatic plants
EC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, > 100 mg/l, OECD Test Guideline 201

Toxicity to bacteria
EC50, 3 Hour, > 1,000 mg/l, OECD Test Guideline 209

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

3-Aminopropyltriethoxysilane

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), semi-static test, 96 Hour, > 934 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates
EC50, Daphnia magna (Water flea), static test, 48 Hour, 331 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants
ErC50, Desmodesmus subspicatus (green algae), static test, 72 Hour, Growth rate inhibition, > 1,000 mg/l
NOEC, Desmodesmus subspicatus (green algae), static test, 72 Hour, Growth rate inhibition, 1.3 mg/l

Toxicity to bacteria
EC50, Pseudomonas putida, 5.75 Hour, Respiration rates., 43 mg/l

Methyltri(ethylmethylketoxime)silane isomers and oligomers

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
For similar material(s):
NOEC, Oryzias latipes (Orange-red killifish), flow-through test, 14 d, 50 mg/l

Chronic toxicity to aquatic invertebrates
For similar material(s):
NOEC, Daphnia magna, semi-static test, 21 d, > 100 mg/l

Propiconazole

Acute toxicity to fish
Material is highly toxic to aquatic organisms on an acute basis (LC50/EC50 between 0.1 and 1 mg/L in the most sensitive species tested).
LC50, Leuciscus idus (Golden orfe), 96 Hour, 5.1 mg/l
LC50, Oncorhynchus mykiss (rainbow trout), 96 Hour, 4.3 mg/l
LC50, Cyprinus carpio (Carp), 96 Hour, 5.7 - 46 mg/l

Acute toxicity to aquatic invertebrates
LC50, saltwater mysid Mysidopsis bahia, 96 Hour, 0.51 mg/l
LC50, scud Gammarus sp., flow-through test, 96 Hour, 1.3 mg/l
EC50, Daphnia magna (Water flea), 48 Hour, 10.2 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants
ErC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, Growth rate, 9 mg/l, OECD Test Guideline 201 or Equivalent
NOEC, Pseudokirchneriella subcapitata (green algae), 72 Hour, Growth rate, 0.46 mg/l, OECD Test Guideline 201 or Equivalent
EC50, diatom Navicula sp., 11 d, 0.093 mg/l

Toxicity to bacteria
EC50, activated sludge, 3 Hour, Respiration rates., > 100 mg/l, OECD Test Guideline 209

Chronic toxicity to fish
NOEC, Cyprinodon variegatus (sheepshead minnow), 100 d, number of offspring, 0.068 mg/l
NOEC, Fathead minnow (Pimephales promelas), 256 d, number of offspring, 0.188 mg/l

Chronic toxicity to aquatic invertebrates
NOEC, Daphnia magna (Water flea), 21 d, growth, 0.37 mg/l

Toxicity to Above Ground Organisms
Material is slightly toxic to birds on an acute basis (LD50 between 501 and 2000 mg/kg).
Material is practically non-toxic to birds on a dietary basis (LC50 > 5000 ppm).
oral LD50, Coturnix japonica (Japanese quail), 1,777 - 2,223 mg/kg

dietary LC50, Anas platyrhynchos (Mallard duck), 8 d, > 5,620 ppm
contact LD50, Apis mellifera (bees), 48 Hour, > 100micrograms/bee
oral LD50, Apis mellifera (bees), 48 Hour, > 100micrograms/bee

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
EC50, Daphnia magna, static test, 48 Hour, 39 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants
ErC50, Algae (Scenedesmus subspicatus), Growth rate, 72 Hour, Growth rate, 7.6 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

Silicon dioxide
Biodegradability: Biodegradation is not applicable.

2-Butanone, O,O',O''-(methylsilylidyne)trioxime
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: 20 - 28 %
Exposure time: 28 d
Method: OECD Test Guideline 301C or Equivalent

Distillates (petroleum), hydrotreated middle
Biodegradability: For similar material(s): Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.
10-day Window: Not applicable
Biodegradation: 60 %
Exposure time: 28 d
Method: OECD Test Guideline 301F or Equivalent

Iron oxide (Fe2O3)
Biodegradability: Biodegradation is not applicable.

Carbon black
Biodegradability: Biodegradation is not applicable.

Chromium oxide (Cr2O3)

Biodegradability: Biodegradation is not applicable.

Titanium dioxide

Biodegradability: Biodegradation is not applicable.

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

3-Aminopropyltriethoxysilane

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: 67 %
Exposure time: 28 d
Method: OECD Test Guideline 301A or Equivalent

Stability in Water (1/2-life)
Hydrolysis, half-life, 8.5 Hour, pH 7, Half-life Temperature 24.7 °C

Methyltri(ethylmethylketoxime)silane isomers and oligomers

Biodegradability: For similar material(s): 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

Propiconazole

Biodegradability: Material is not readily biodegradable according to OECD/EEC guidelines.

Biodegradation: 0 %
Exposure time: 28 d
Method: OECD Test Guideline 301B or Equivalent

Theoretical Oxygen Demand: 2.01 mg/mg

Photodegradation
Test Type: Half-life (indirect photolysis)
Sensitization: OH radicals
Atmospheric half-life: 5.533 Hour
Method: Estimated.

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

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''-(methylsilylidyne)trioxime
Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): 1.69 Estimated by Structure-Activity Relationship (SAR).

Distillates (petroleum), hydrotreated middle
Bioaccumulation: No relevant data found.

Iron oxide (Fe2O3)
Bioaccumulation: Partitioning from water to n-octanol is not applicable.

Carbon black
Bioaccumulation: No relevant data found.

Chromium oxide (Cr2O3)
Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): 2.97 Estimated.
Bioconcentration factor (BCF): 39 Fish Estimated.

Vinyltri (methylethylketoxime) silane
Bioaccumulation: No relevant data found.

3-Aminopropyltriethoxysilane
Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): 1.7 at 20 °C Calculated.
Bioconcentration factor (BCF): 3.4 Cyprinus carpio (Carp) 56 d

Methyltri(ethylmethylketoxime)silane isomers and oligomers
Bioaccumulation: For similar material(s): Bioconcentration potential is low (BCF less than 100 or log Pow greater than 7).
Partition coefficient: n-octanol/water(log Pow): 11.2

Propiconazole
Bioaccumulation: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).
Partition coefficient: n-octanol/water(log Pow): 3.72 Measured
Bioconcentration factor (BCF): 180 Lepomis macrochirus (Bluegill sunfish) 28 d OECD Test Guideline 305 or Equivalent

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

Bioaccumulation: No relevant data found.

Mobility in Soil

Silicon dioxide
Partition coefficient (Koc): 21.73

2-Butanone, O,O',O''-(methylsilylidyne)trioxime
No relevant data found.

Distillates (petroleum), hydrotreated middle
No relevant data found.

Iron oxide (Fe2O3)
No relevant data found.

Carbon black
No relevant data found.

Chromium oxide (Cr2O3)
Partition coefficient (Koc): 80 Estimated.

Vinyltri (methylethylketoxime) silane
No relevant data found.

3-Aminopropyltriethoxysilane
No relevant data found.

Methyltri(ethylmethylketoxime)silane isomers and oligomers
No relevant data found.

Propiconazole
Partition coefficient (Koc): 382 - 1789 Measured

Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane
No relevant data found.

Results of PBT and vPvB assessment

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).

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

Iron oxide (Fe2O3)
This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Carbon black

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

Chromium oxide (Cr2O3)
This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

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

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

3-Aminopropyltriethoxysilane
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).

Methyltri(ethylmethylketoxime)silane isomers and oligomers
This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Propiconazole
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).

Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane
This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Other adverse effects

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.

Distillates (petroleum), hydrotreated middle
This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Iron oxide (Fe2O3)
This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

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

Chromium oxide (Cr2O3)
This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Titanium dioxide
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.

3-Aminopropyltriethoxysilane
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.

Propiconazole

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 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 SDS SECTION 1: Identified Uses. 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 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 IBC or IGC Code	Consult IMO regulations before transporting ocean bulk

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
S5
Product repackaged for public consumer use should be labelled in accordance with the current Standard for the Uniform Scheduling of Medicines and Poisons.

Australian Inventory of Industrial Chemicals (AIIC)
All substances contained in this product are listed on the Australian Inventory of Industrial Chemicals, or are not required to be listed.

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
US WEEL	USA. Workplace Environmental Exposure Levels (WEEL)

Full text of other abbreviations
AIIC - Australian Inventory of Industrial Chemicals; 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; 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; TECI - Thailand Existing Chemicals Inventory; 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

DOW CHEMICAL (AUSTRALIA) PTY LTD urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.
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