



SAFETY DATA SHEET

DOW CHEMICAL CANADA ULC

Product name: DOWSIL™ 87 Additive

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DOW CHEMICAL CANADA ULC 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.

1. IDENTIFICATION

Product name: DOWSIL™ 87 Additive

Other means of identification: No data available

Recommended use of the chemical and restrictions on use

Identified uses: Impregnation agents Additives

COMPANY IDENTIFICATION

DOW CHEMICAL CANADA ULC
#2400, 215 - 2ND STREET S.W.
CALGARY AB T2P 1M4
CANADA

Customer Information Number:

800-258-2436
SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact (transportation emergencies only): 1-800-424-9300

Local Emergency Contact (transportation emergencies only): 1-800-424-9300

24-Hour Emergency Contact: 1-989-636-4400

2. HAZARDS IDENTIFICATION

Hazard classification

This product is hazardous under the criteria of the Hazardous Products Regulation (HPR) as implemented under the Workplace Hazardous Materials Information System (WHMIS 2015).

Flammable liquids - Category 3

Skin irritation - Category 2

Reproductive toxicity - Category 2

Label elements

Hazard pictograms



Signal word: **WARNING!**

Hazards

H226	Flammable liquid and vapour.
H315	Causes skin irritation.
H361	Suspected of damaging fertility or the unborn child.

Precautionary statements**Prevention**

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P240	Ground and bond container and receiving equipment.
P241	Use explosion-proof electrical, ventilating and lighting equipment.
P242	Use non-sparking tools.
P243	Take action to prevent static discharges.
P261	Avoid breathing spray.
P264	Wash skin thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves, protective clothing, eye protection, face protection and hearing protection.

Response

P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P308 + P313	IF exposed or concerned: Get medical attention.
P332 + P313	If skin irritation occurs: Get medical attention.
P362 + P364	Take off contaminated clothing and wash it before reuse.
P370 + P378	In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide to extinguish.

Storage

P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.

Disposal

P501	Dispose of contents and container to an approved waste disposal plant.
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Other hazards

No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature: Silicone emulsion

This product is a mixture.

Chemical name	Common name and synonym	CASRN	Concentration (w/w)
Triethoxy(octyl)silane	triethoxyoctylsilane	2943-75-1	>= 11.0 - <= 19.0 %
Siloxanes and Silicones, di-Me, polymers with 3-[(2-aminoethyl)amino]propyl silsesquioxanes, hydroxy-terminated	Siloxanes and Silicones, di-Me, polymers with 3-[(2-aminoethyl)amino]propyl silsesquioxanes, hydroxy-terminated	68554-54-1	>= 1.0 - <= 1.4 %
Polyethylene oxide lauryl ether	Dodecan-1-ol, ethoxylated	9002-92-0	>= 0.9 - <= 1.1 %
Ethoxylated lauryl alcohol	Poly(oxy-1,2-ethanediyl), .alpha.-dodecyl-.omega.-hydroxy-	9002-92-0	>= 0.8 - <= 1.1 %
Propane-1,2-diol	propane-1,2-diol	57-55-6	>= 0.8 - <= 1.1 %
Alcohols, C12-13, ethoxylated	Alcohols, C12-13, ethoxylated	66455-14-9	<= 1.1 %
Hexamethyldisiloxane	hexamethyldisiloxane	107-46-0	>= 0.23 - <= 0.4 %
Octamethyl Cyclotetrasiloxane	octamethylcyclotetrasiloxane; D4	556-67-2	>= 0.07 - <= 0.11 %
Hexadecyltrimethyl ammonium chloride	cetrimonium chloride	112-02-7	>= 0.06 - <= 0.084 %
Hexadecyltrimethylammonium acetate	Hexadecyltrimethylammonium acetate	51374-75-5	>= 0.014 - <= 0.024 %
Hexadecyldimethylamine	hexadecyldimethylamine	112-69-6	>= 0.0057 - <= 0.0067 %
Mixture of: 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	5-Chloro-2-methyl-3(2H)isothiazolone mixt. with 2-Methyl-3(2H)isothiazolone	55965-84-9	>= 0.0012 - <= 0.0014 %

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; consult a physician.

Skin contact: Wash off with plenty of water. Suitable emergency safety shower facility should be available in work area.

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: Rinse mouth with water. No emergency medical treatment necessary.

Most important symptoms and effects, both acute and delayed:

Causes skin irritation. Suspected of damaging fertility or the unborn child.

Indication of any immediate medical attention and special treatment needed

Notes to physician: 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.

5. FIREFIGHTING MEASURES

Extinguishing media

Suitable extinguishing media: Alcohol-resistant foam. Carbon dioxide (CO₂). Dry sand.

Unsuitable extinguishing media: High volume water jet. Do not use direct water stream..

Special hazards arising from the substance or mixture

Hazardous combustion products: Carbon oxides. Silicon oxides. Nitrogen oxides (NO_x).

Unusual Fire and Explosion Hazards: Flash back possible over considerable distance.. Exposure to combustion products may be a hazard to health.. Flammable concentrations of vapor can accumulate at temperatures above flash point; see Section 9.. Flammable mixtures may exist within the vapor space of containers at room temperature.. Closed containers may rupture via pressure build-up when exposed to fire or extreme heat.. Vapours may form explosive mixtures with air..

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..

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Remove all sources of ignition. Use personal protective equipment. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Ground and bond all containers and handling equipment. Vapor explosion hazard. Keep out of sewers. 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. Prevent spreading over a wide area (e.g. by containment or oil barriers). 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: Non-sparking tools should be used. Soak up with inert absorbent material. Suppress (knock down) gases/vapours/mists with a water spray jet. Clean up remaining materials from spill with suitable absorbant. 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.
See sections: 7, 8, 11, 12 and 13.

7. HANDLING AND STORAGE

Precautions for safe handling: Do not get on skin or clothing. Avoid inhalation of vapour or mist. Avoid contact with eyes. Do not swallow. Keep away from heat and sources of ignition. Take precautionary measures against static discharges. 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 only with adequate ventilation. Use only in an area equipped with explosion proof exhaust ventilation. Ground and bond container and receiving equipment.

Conditions for safe storage: Keep in properly labelled containers. Store locked up. Keep in a cool, well-ventilated place. Store in accordance with the particular national regulations. Keep away from heat and sources of ignition.

Do not store with the following product types: Strong oxidizing agents.
Unsuitable materials for containers: None known.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

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

Consult local authorities for recommended exposure limits.

Component	Regulation	Type of listing	Value
Propane-1,2-diol	US WEEL	TWA	10 mg/m3
	CA ON OEL	TWAEV Total	155 mg/m3 50 ppm
	CA ON OEL	TWAEV	10 mg/m3
	Further information: C: For assessing the visibility in a work environment where 1,2-propylene glycol aerosol is present.		
	CA ON OEL	TWA	155 mg/m3 50 ppm
	CA ON OEL	TWA	10 mg/m3
	Further information: (c): For assessing the visibility in a work environment where 1,2-propylene glycol aerosol is present		
	CA ON OEL	TWA Vapour and aerosols	155 mg/m3 50 ppm
	CA ON OEL	TWA aerosol	10 mg/m3
Hexamethyldisiloxane	Dow IHG	TWA	50 ppm
Octamethyl Cyclotetrasiloxane	US WEEL	TWA	10 ppm
Mixture of: 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	Dow IHG	TWA	0.075 mg/m3 , as 5-chloro-2-methyl-2H-isothiazol-3-one
	Dow IHG	STEL	0.23 mg/m3 , as 5-chloro-2-methyl-2H-isothiazol-3-one
	Dow IHG	TWA	1.5 mg/m3 , as 2-methyl-2H-isothiazol-3-one
	Dow IHG	STEL	4.5 mg/m3 , as 2-methyl-2H-isothiazol-3-one
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		
	CA AB OEL	TWA	1,880 mg/m3 1,000 ppm
	CA BC OEL	STEL	1,000 ppm
	CA QC OEL	STEV	1,000 ppm
	Further information: C3: Carcinogenic effect detected in animals. Results of studies relating to the carcinogenicity of these substances in animals are not necessarily applicable to humans.		

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

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). If there is a potential for exposure to particles which could cause eye discomfort, wear chemical goggles.

Skin protection

Hand protection: Use gloves chemically resistant to this material. 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"). Avoid gloves made of: Polyvinyl alcohol ("PVA"). 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 material is heated or sprayed, use an approved air-purifying respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state liquid

Color white

Odor not significant

Odor Threshold No data available

pH 4 - 5.5

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) > 35 °C

Flash point closed cup 45 °C

Evaporation Rate (Butyl Acetate = 1) No data available

Flammability

Flammability (solid, gas)	Not Applicable
Flammability (liquids)	Does not sustain combustion.
Upper/lower flammability or explosive limits	
Lower explosion limit	No data available
Upper explosion limit	No data available
Vapor Pressure	No data available
Relative vapour density	
Relative Vapor Density (air = 1)	No data available
Density and / or relative density	
Relative Density (water = 1)	1
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	50 mPa.s
Kinematic Viscosity	No data available
Explosive properties	Not explosive
Oxidizing properties	The substance or mixture is not classified as oxidizing.
Molecular weight	No data available
Particle characteristics	
Particle size	Not applicable

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

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. Vapours may form explosive mixture with air. Flammable liquid and vapour.

Conditions to avoid: Avoid static discharge.

Incompatible materials: Avoid contact with oxidizing materials.

Hazardous decomposition products:

Decomposition products can include and are not limited to: Ethanol. Formaldehyde.

11. TOXICOLOGICAL INFORMATION

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

Information on likely routes of exposure

Inhalation, 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. 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, Rat, > 5,000 mg/kg Estimated.

Information for components:**Triethoxy(octyl)silane**

LD50, Rat, male and female, 5,110 mg/kg OECD 401 or equivalent

Siloxanes and Silicones, di-Me, polymers with 3-[(2-aminoethyl)amino]propyl silsesquioxanes, hydroxy-terminated

Single dose oral LD50 has not been determined.

Polyethylene oxide lauryl ether

LD50, Rat, > 5,000 mg/kg

Ethoxylated lauryl alcohol

LD50, Rat, 9,060 mg/kg

Propane-1,2-diol

LD50, Rat, > 20,000 mg/kg

Alcohols, C12-13, ethoxylated

Single dose oral LD50 has not been determined.

For similar material(s): LD50, Rat, > 2,000 mg/kg

Hexamethyldisiloxane

LD50, Rat, > 5,000 mg/kg

Octamethyl Cyclotetrasiloxane

LD50, Rat, male, > 4,800 mg/kg No deaths occurred at this concentration.

Hexadecyltrimethyl ammonium chloride

LD50, Rat, 699 mg/kg

Hexadecyltrimethylammonium acetate

Based on data from similar materials LD50, Rat, 1,550 mg/kg

Hexadecyldimethylamine

For similar material(s): LD50, Rat, male and female, 1,015 mg/kg

Mixture of: 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)

LD50, Rat, 64 mg/kg

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, > 5,000 mg/kg Estimated.

Information for components:**Triethoxy(octyl)silane**

LD50, Rabbit, female, 8,000 mg/kg OECD 402 or equivalent

LD50, Rabbit, male, 6,730 mg/kg OECD 402 or equivalent

Siloxanes and Silicones, di-Me, polymers with 3-[(2-aminoethyl)amino]propyl silsesquioxanes, hydroxy-terminated

The dermal LD50 has not been determined.

Polyethylene oxide lauryl ether

The dermal LD50 has not been determined.

Ethoxylated lauryl alcohol

Based on data from similar materials LD50, Rat, > 2,000 mg/kg

Propane-1,2-diol

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

Alcohols, C12-13, ethoxylated

The dermal LD50 has not been determined.

For similar material(s): LD50, Rat, > 2,000 mg/kg OECD Test Guideline 402

Hexamethyldisiloxane

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

Octamethyl Cyclotetrasiloxane

LD50, Rat, male and female, > 2,400 mg/kg No deaths occurred at this concentration.

Hexadecyltrimethyl ammonium chloride

Absorption has not been determined due to corrosivity.

Hexadecyltrimethylammonium acetate

Based on data from similar materials LD50, Rabbit, 528 mg/kg OECD Test Guideline 402

Hexadecyldimethylamine

The dermal LD50 has not been determined.

Mixture of: 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)

LD50, Rabbit, 87.12 mg/kg

Acute inhalation toxicity

Information for the Product:

Brief exposure (minutes) is not likely to cause adverse effects. Vapor from heated material or mist may cause respiratory irritation.

As product: The LC50 has not been determined.

Information for components:

Triethoxy(octyl)silane

LC50, Rat, male and female, 4 hrs, vapour, > 22 ppm OECD Test Guideline 403 No deaths occurred at this concentration.

Siloxanes and Silicones, di-Me, polymers with 3-[(2-aminoethyl)amino]propyl silsesquioxanes, hydroxy-terminated

The LC50 has not been determined.

Polyethylene oxide lauryl ether

The LC50 has not been determined.

Ethoxylated lauryl alcohol

Based on data from similar materials LC50, Rat, 4 Hour, dust/mist, > 1.6 mg/l

Propane-1,2-diol

LC50, Rabbit, 2 Hour, dust/mist, 317.042 mg/l No deaths occurred at this concentration.

Alcohols, C12-13, ethoxylated

The LC50 has not been determined.

For similar material(s): LC50, Rat, male, 4 Hour, dust/mist, > 1.6 mg/l

Hexamethyldisiloxane

LC50, Rat, male and female, 4 Hour, vapour, 106 mg/l OECD Test Guideline 403

Octamethyl Cyclotetrasiloxane

LC50, Rat, male and female, 4 Hour, dust/mist, 36 mg/l OECD Test Guideline 403

Hexadecyltrimethyl ammonium chloride

The LC50 has not been determined.

Hexadecyltrimethylammonium acetate

Prolonged excessive exposure may cause adverse effects. May cause respiratory tract irritation.

The LC50 has not been determined.

Hexadecyldimethylamine

The LC50 has not been determined.

Mixture of: 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)

LC50, Rat, 4 Hour, dust/mist, 0.33 mg/l

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.

Repeated contact may cause flaking and softening of skin.

Information for components:

Triethoxy(octyl)silane

Brief contact may cause moderate skin irritation with local redness.

Prolonged contact may cause moderate skin irritation with local redness.

Siloxanes and Silicones, di-Me, polymers with 3-[(2-aminoethyl)amino]propyl silsesquioxanes, hydroxy-terminated

For similar material(s):

Brief contact may cause skin irritation with local redness.

Polyethylene oxide lauryl ether

Brief contact may cause skin irritation with local redness.

Ethoxylated lauryl alcohol

Brief contact may cause skin irritation with local redness.

Propane-1,2-diol

Prolonged contact is essentially nonirritating to skin.

Repeated contact may cause flaking and softening of skin.

Alcohols, C12-13, ethoxylated

Prolonged contact may cause slight skin irritation with local redness.

Hexamethyldisiloxane

Brief contact is essentially nonirritating to skin.

Prolonged contact may cause skin irritation with local redness.

May cause more severe response on covered skin (under clothing, gloves).

Octamethyl Cyclotetrasiloxane

Brief contact is essentially nonirritating to skin.

Hexadecyltrimethyl ammonium chloride

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

Hexadecyltrimethylammonium acetate

For similar material(s):

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

Hexadecyldimethylamine

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

Mixture of: 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)

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

Serious eye damage/eye irritation

Not classified based on available information.

Information for the Product:

Based on information for component(s):

May cause slight eye irritation.

May cause mild eye discomfort.

Mist may cause eye irritation.

Information for components:**Triethoxy(octyl)silane**

May cause slight eye irritation.

Corneal injury is unlikely.

Siloxanes and Silicones, di-Me, polymers with 3-[(2-aminoethyl)amino]propyl silsesquioxanes, hydroxy-terminated

For similar material(s):

May cause eye irritation.

May cause corneal injury.

Polyethylene oxide lauryl ether

May cause slight eye irritation.

Ethoxylated lauryl alcohol

May cause eye irritation.

Propane-1,2-diol

May cause slight temporary eye irritation.

Corneal injury is unlikely.

Mist may cause eye irritation.

Alcohols, C12-13, ethoxylated

May cause moderate eye irritation.

Hexamethyldisiloxane

May cause slight temporary eye irritation.

Corneal injury is unlikely.

Vapor or mist may cause eye irritation.

Octamethyl Cyclotetrasiloxane

Essentially nonirritating to eyes.

Hexadecyltrimethyl ammonium chloride

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

Hexadecyltrimethylammonium acetate

For similar material(s):

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

Hexadecyldimethylamine

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

Mixture of: 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)

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

Sensitization

For skin sensitization:

Not classified based on available information.

For respiratory sensitization:

Not classified based on available information.

Information for the Product:

For skin sensitization:

Contains component(s) which did not cause allergic skin sensitization in guinea pigs.

For respiratory sensitization:

No relevant data found.

Information for components:

Triethoxy(octyl)silane

For similar material(s):

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

For respiratory sensitization:

No relevant data found.

Siloxanes and Silicones, di-Me, polymers with 3-[(2-aminoethyl)amino]propyl silsesquioxanes, hydroxy-terminated

For skin sensitization:
No relevant data found.

For respiratory sensitization:
No relevant data found.

Polyethylene oxide lauryl ether

For skin sensitization:
No relevant data found.

For respiratory sensitization:
No relevant data found.

Ethoxylated lauryl alcohol

For similar material(s):
Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

Propane-1,2-diol

Did not cause allergic skin reactions when tested in humans.

For respiratory sensitization:
No relevant data found.

Alcohols, C12-13, ethoxylated

For similar material(s):
Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

Hexamethyldisiloxane

For skin sensitization:
Did not cause allergic skin reactions when tested in humans.
Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

Octamethyl Cyclotetrasiloxane

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

For respiratory sensitization:
No relevant data found.

Hexadecyltrimethyl ammonium chloride

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

For respiratory sensitization:
No relevant data found.

Hexadecyltrimethylammonium acetate

For similar material(s):
Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

Hexadecyldimethylamine

For skin sensitization:
No relevant data found.

For respiratory sensitization:
No relevant data found.

Mixture of: 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)

For skin sensitization:
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:

Triethoxy(octyl)silane

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

Siloxanes and Silicones, di-Me, polymers with 3-[(2-aminoethyl)amino]propyl silsesquioxanes, hydroxy-terminated

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

Polyethylene oxide lauryl ether

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

Ethoxylated lauryl alcohol

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

Propane-1,2-diol

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

Alcohols, C12-13, ethoxylated

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

Hexamethyldisiloxane

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

Octamethyl Cyclotetrasiloxane

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

Hexadecyltrimethyl ammonium chloride

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

Hexadecyldimethylamine

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

Mixture of: 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)

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

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:**Triethoxy(octyl)silane**

Material is not classified as an aspiration hazard based on insufficient data, however materials with low viscosity may be aspirated into the lungs during ingestion or vomiting.

Siloxanes and Silicones, di-Me, polymers with 3-[(2-aminoethyl)amino]propyl silsesquioxanes, hydroxy-terminated

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

Polyethylene oxide lauryl ether

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

Ethoxylated lauryl alcohol

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

Propane-1,2-diol

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

Alcohols, C12-13, ethoxylated

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

Hexamethyldisiloxane

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

Octamethyl Cyclotetrasiloxane

Material is not classified as an aspiration hazard based on insufficient data, however materials with low viscosity may be aspirated into the lungs during ingestion or vomiting.

Hexadecyltrimethyl ammonium chloride

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

Hexadecyldimethylamine

Aspiration into the lungs may occur during ingestion or vomiting, causing lung damage or even death due to chemical pneumonia.

Mixture of: 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)

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

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:**Triethoxy(octyl)silane**

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

Urinary tract.

Findings from a combined repeated-dose toxicity study with reproductive/developmental screening endpoints on n-octyltriethoxysilane have shown neurological effects in rats at high doses (1000 mg/kg). Paralysis and paresis of the limbs, and demyelination of the brain, spinal cord, sciatic and tibial nerves was noted in some animals.

Siloxanes and Silicones, di-Me, polymers with 3-[(2-aminoethyl)amino]propyl silsesquioxanes, hydroxy-terminated

No relevant data found.

Polyethylene oxide lauryl ether

No relevant data found.

Ethoxylated lauryl alcohol

For similar material(s):

Based on available data, repeated exposures are not anticipated to cause additional significant adverse effects.

Propane-1,2-diol

In rare cases, repeated excessive exposure to propylene glycol may cause central nervous system effects.

Alcohols, C12-13, ethoxylated

No relevant data found.

Hexamethyldisiloxane

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

Liver.

Testes.

Kidney.

However, the effects are species specific and are not relevant to humans.

This material contains hexamethyldisiloxane (HMDS). Repeated inhalation exposure in rats to HMDS resulted in protoporphyrin accumulation in the liver. Without knowledge of the specific mechanism leading to the protoporphyrin accumulation the relevance of this finding to humans is unknown.

Octamethyl Cyclotetrasiloxane

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

Kidney.

Liver.

Respiratory tract.

Female reproductive organs.

Hexadecyltrimethyl ammonium chloride

Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

Hexadecyldimethylamine

Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

Mixture of: 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)

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

Carcinogenicity

Not classified based on available information.

Information for the Product:

Product test data not available.

Information for components:

Triethoxy(octyl)silane

No relevant data found.

Siloxanes and Silicones, di-Me, polymers with 3-[(2-aminoethyl)amino]propyl silsesquioxanes, hydroxy-terminated

No relevant data found.

Polyethylene oxide lauryl ether

No relevant data found.

Ethoxylated lauryl alcohol

No relevant data found.

Propane-1,2-diol

Did not cause cancer in laboratory animals.

Alcohols, C12-13, ethoxylated

No relevant data found.

Hexamethyldisiloxane

Kidney effects and/or tumors have been observed in male rats. These effects are believed to be species specific and unlikely to occur in humans. Early onset of testicular cell tumors has been observed that are spontaneous and common in rats. These effects are believed to be species specific and unlikely to occur in humans.

Octamethyl Cyclotetrasiloxane

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

Hexadecyltrimethyl ammonium chloride

No relevant data found.

Hexadecyldimethylamine

For similar material(s): Did not cause cancer in laboratory animals.

Mixture of: 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)

Did not cause cancer in laboratory animals.

Teratogenicity

Suspected of damaging fertility or the unborn child.

Information for the Product:

Product test data not available.

Information for components:**Triethoxy(octyl)silane**

Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Dose levels producing these effects were many times higher than any dose levels expected from exposure due to use.

Siloxanes and Silicones, di-Me, polymers with 3-[(2-aminoethyl)amino]propyl silsesquioxanes, hydroxy-terminated

No relevant data found.

Polyethylene oxide lauryl ether

No relevant data found.

Ethoxylated lauryl alcohol

No relevant data found.

Propane-1,2-diol

Did not cause birth defects or any other fetal effects in laboratory animals.

Alcohols, C12-13, ethoxylated

No relevant data found.

Hexamethyldisiloxane

Did not cause birth defects or any other fetal effects in laboratory animals.

Octamethyl Cyclotetrasiloxane

Did not cause birth defects or any other fetal effects in laboratory animals.

Hexadecyltrimethyl ammonium chloride

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

Hexadecyldimethylamine

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

Mixture of: 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)

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

Reproductive toxicity

Suspected of damaging fertility or the unborn child.

Information for the Product:

Product test data not available.

Information for components:**Triethoxy(octyl)silane**

In animal studies, did not interfere with reproduction.

Siloxanes and Silicones, di-Me, polymers with 3-[(2-aminoethyl)amino]propyl silsesquioxanes, hydroxy-terminated

No relevant data found.

Polyethylene oxide lauryl ether

No relevant data found.

Ethoxylated lauryl alcohol

No relevant data found.

Propane-1,2-diol

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

Alcohols, C12-13, ethoxylated

No relevant data found.

Hexamethyldisiloxane

In animal studies, did not interfere with reproduction.

Octamethyl Cyclotetrasiloxane

In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals. In animal studies, has been shown to interfere with fertility.

Hexadecyltrimethyl ammonium chloride

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

Hexadecyldimethylamine

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

Mixture of: 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)

In animal studies, did not interfere with reproduction.

Mutagenicity

Not classified based on available information.

Information for the Product:

Product test data not available.

Information for components:

Triethoxy(octyl)silane

In vitro genetic toxicity studies were negative.

Siloxanes and Silicones, di-Me, polymers with 3-[(2-aminoethyl)amino]propyl silsesquioxanes, hydroxy-terminated

No relevant data found.

Polyethylene oxide lauryl ether

No relevant data found.

Ethoxylated lauryl alcohol

In vitro genetic toxicity studies were negative.

Propane-1,2-diol

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

Alcohols, C12-13, ethoxylated

No relevant data found.

Hexamethyldisiloxane

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

Octamethyl Cyclotetrasiloxane

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

Hexadecyltrimethyl ammonium chloride

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

Hexadecyldimethylamine

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

Mixture of: 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)

In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects

12. ECOLOGICAL INFORMATION

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

Toxicity

Triethoxy(octyl)silane**Acute toxicity to fish**

Not expected to be acutely toxic to aquatic organisms.

No toxicity at the limit of solubility

LC50, Oncorhynchus mykiss (rainbow trout), flow-through, 96 hrs, > 0.055 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates

No toxicity at the limit of solubility

EC50, Daphnia magna (Water flea), flow-through test, 48 hrs, > 0.049 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants

No toxicity at the limit of solubility

ErC50, Pseudokirchneriella subcapitata (green algae), static test, 72 hrs, Growth rate inhibition, > 0.13 mg/l, OECD Test Guideline 201 or Equivalent

No toxicity at the limit of solubility

NOEC, Pseudokirchneriella subcapitata (green algae), static test, 72 hrs, Growth rate inhibition, > 0.13 mg/l, OECD Test Guideline 201 or Equivalent

Toxicity to bacteria

EC50, activated sludge, 3 Hour, Respiration rates., > 1,000 mg/l, activated sludge test (OECD 209)

Chronic toxicity to fish

No toxicity at the limit of solubility

NOEC, Fathead minnow (Pimephales promelas), 32 d, mortality, > 0.036 mg/l

Chronic toxicity to aquatic invertebrates

No toxicity at the limit of solubility

NOEC, Daphnia magna (Water flea), 21 d, number of offspring, >= 0.199 mg/l

Siloxanes and Silicones, di-Me, polymers with 3-[(2-aminoethyl)amino]propyl silsesquioxanes, hydroxy-terminated**Acute toxicity to fish**

No relevant data found.

Polyethylene oxide lauryl ether**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).

Based on data from similar materials

LC50, Carassius auratus (goldfish), 96 Hour, 60 - 70 mg/l

Ethoxylated lauryl alcohol**Acute toxicity to fish**

Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested).

LC50, Oncorhynchus mykiss (rainbow trout), semi-static test, 96 Hour, 3.3 mg/l

Acute toxicity to aquatic invertebrates

Based on data from similar materials

EC50, Daphnia magna (Water flea), 48 Hour, > 1 - 10 mg/l

Acute toxicity to algae/aquatic plants

Based on data from similar materials

EC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, > 0.1 - 1 mg/l

Based on data from similar materials

NOEC, Pseudokirchneriella subcapitata (green algae), 72 Hour, > 0.1 - 1 mg/l

Chronic toxicity to fish

Based on data from similar materials

NOEC, Lepomis macrochirus (Bluegill sunfish), 30 d, > 0.1 - 1 mg/l

Chronic toxicity to aquatic invertebrates

Based on data from similar materials

NOEC, Daphnia magna (Water flea), 21 d, > 0.1 - 1 mg/l

Propane-1,2-diol**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), static test, 96 Hour, 40,613 mg/l, OECD Test Guideline 203

Acute toxicity to aquatic invertebrates

LC50, Ceriodaphnia dubia (water flea), static test, 48 Hour, 18,340 mg/l, OECD Test Guideline 202

Acute toxicity to algae/aquatic plants

ErC50, Pseudokirchneriella subcapitata (green algae), 96 Hour, Growth rate inhibition, 19,000 mg/l, OECD Test Guideline 201

Toxicity to bacteria

NOEC, Pseudomonas putida, 18 Hour, > 20,000 mg/l

Chronic toxicity to aquatic invertebrates

NOEC, Ceriodaphnia dubia (water flea), semi-static test, 7 d, number of offspring, 13,020 mg/l

Alcohols, C12-13, ethoxylated

Acute toxicity to fish

No relevant data found.

Hexamethyldisiloxane**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, Oncorhynchus mykiss (rainbow trout), flow-through test, 96 Hour, 0.46 mg/l

Acute toxicity to algae/aquatic plants

No toxicity at the limit of solubility

ErC50, Selenastrum capricornutum (green algae), 72 Hour, Growth rate, > 0.55 mg/l, OECD Test Guideline 201

Chronic toxicity to fish

NOEC, Fathead minnow (Pimephales promelas), flow-through, 32 d, growth, 0.029 mg/l

Chronic toxicity to aquatic invertebrates

NOEC, Daphnia magna (Water flea), semi-static test, 21 d, number of offspring, 0.08 mg/l

Octamethyl Cyclotetrasiloxane**Acute toxicity to fish**

Not expected to be acutely toxic to aquatic organisms.

No toxicity at the limit of solubility

LC50, Oncorhynchus mykiss (rainbow trout), flow-through, 96 Hour, > 0.022 mg/l

No toxicity at the limit of solubility

LC50, Cyprinodon variegatus (sheepshead minnow), flow-through, 14 d, > 0.0063 mg/l

Acute toxicity to aquatic invertebrates

No toxicity at the limit of solubility

EC50, Mysidopsis bahia (opossum shrimp), flow-through test, 96 Hour, > 0.0091 mg/l

No toxicity at the limit of solubility

EC50, Daphnia magna (Water flea), flow-through test, 48 Hour, > 0.015 mg/l

Acute toxicity to algae/aquatic plants

No toxicity at the limit of solubility

ErC50, Pseudokirchneriella subcapitata (green algae), 96 Hour, Growth rate, > 0.022 mg/l

No toxicity at the limit of solubility

EC10, Pseudokirchneriella subcapitata (green algae), 96 Hour, Growth rate, >= 0.022 mg/l

Chronic toxicity to fish

No toxicity at the limit of solubility

NOEC, Oncorhynchus mykiss (rainbow trout), 93 d, growth, >= 0.0044 mg/l

Chronic toxicity to aquatic invertebrates

NOEC, Daphnia magna (Water flea), 21 d, survival, 0.0079 mg/l

Hexadecyltrimethyl ammonium chloride**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, Danio rerio (zebra fish), 96 Hour, 0.19 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates

EC50, Daphnia magna (Water flea), 48 Hour, 0.012 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants

ErC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, Growth rate, 0.113 mg/l, OECD Test Guideline 201 or Equivalent

NOEC, Pseudokirchneriella subcapitata (green algae), 72 Hour, Growth rate, 0.068 mg/l, OECD Test Guideline 201 or Equivalent

Toxicity to bacteria

EC50, Pseudomonas putida, 16 Hour, Growth inhibition, 0.96 mg/l, DIN 38 412 Part 8

Chronic toxicity to fish

Based on data from similar materials

NOEC, Pimephales promelas (fathead minnow), 28 d, mortality, 0.0322 mg/l

Chronic toxicity to aquatic invertebrates

Based on data from similar materials

NOEC, Daphnia magna (Water flea), 21 d, number of offspring, 0.00415 mg/l

Hexadecyltrimethylammonium acetate**Acute toxicity to fish**

Material is very highly toxic to aquatic organisms on an acute basis (LC50/EC50 <0.1 mg/L in the most sensitive species).

Based on data from similar materials

LC50, Danio rerio (zebra fish), 96 Hour, 0.19 mg/l, OECD Test Guideline 203

Acute toxicity to aquatic invertebrates

Based on data from similar materials

EC50, Daphnia magna (Water flea), 48 Hour, 0.28 mg/l, OECD Test Guideline 202

Acute toxicity to algae/aquatic plants

Based on data from similar materials

ErC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, 0.08 mg/l, OECD Test Guideline 201

Based on data from similar materials

NOEC, Pseudokirchneriella subcapitata (green algae), 72 Hour, 0.04 mg/l, OECD Test Guideline 201

Chronic toxicity to fish

Based on data from similar materials

NOEC, Pimephales promelas (fathead minnow), 28 d, 0.032 mg/l

Chronic toxicity to aquatic invertebrates

Based on data from similar materials

NOEC, Daphnia magna (Water flea), 21 d, > 0.001 - < 0.01 mg/l

Hexadecyldimethylamine**Acute toxicity to fish**

Material is very highly toxic to aquatic organisms on an acute basis (LC50/EC50 <0.1 mg/L in the most sensitive species).

For similar material(s):

LC50, Rainbow trout (Oncorhynchus mykiss), 96 Hour, 0.18 mg/l

Acute toxicity to aquatic invertebrates

Based on data from similar materials

EC50, Daphnia magna (Water flea), 48 Hour, 66.5 µg/l, OECD Test Guideline 202

Acute toxicity to algae/aquatic plants

For similar material(s):

ErC50, Desmodesmus subspicatus (green algae), 72 Hour, Growth rate, 9.9 µg/l, OECD Test Guideline 201

For similar material(s):

NOEC, Desmodesmus subspicatus (green algae), 72 Hour, Growth rate, 0.5 µg/l, OECD Test Guideline 201

Toxicity to bacteria

For similar material(s):

EC50, activated sludge, 3 Hour, Respiration rates., 13 mg/l, Activated Sludge, Respiration Inhibition

Chronic toxicity to aquatic invertebrates

For similar material(s):

NOEC, Daphnia magna (Water flea), 21 d, number of offspring, 0.036 mg/l

Mixture of: 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)**Acute toxicity to fish**

Material is very highly toxic to aquatic organisms on an acute basis (LC50/EC50 <0.1 mg/L in the most sensitive species).

LC50, Oncorhynchus mykiss (rainbow trout), flow-through test, 96 Hour, 0.19 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates

LC50, Daphnia magna (Water flea), flow-through test, 48 Hour, 0.16 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants

NOEC, Skeletonema costatum (marine diatom), Static, 48 Hour, 0.00049 mg/l, OECD Test Guideline 201

ErC50, Skeletonema costatum (marine diatom), Static, 48 Hour, 0.0052 mg/l, OECD Test Guideline 201

Chronic toxicity to fish

NOEC, Rainbow trout (Oncorhynchus mykiss), flow-through, 14 d, 0.05 mg/l

Chronic toxicity to aquatic invertebrates

NOEC, Daphnia magna, flow-through test, 21 d, 0.1 mg/l

Persistence and degradability**Triethoxy(octyl)silane**

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: 31.5 %

Exposure time: 28 d

Method: OECD Test Guideline 301D or Equivalent

Stability in Water (1/2-life)

, 30 Hour, pH 7, Half-life Temperature 20 °C, Estimated.

Siloxanes and Silicones, di-Me, polymers with 3-[(2-aminoethyl)amino]propyl silsesquioxanes, hydroxy-terminated

Biodegradability: No relevant data found.

Polyethylene oxide lauryl ether

Biodegradability: Material is expected to be readily biodegradable.

10-day Window: Pass Based on data from similar materials

Biodegradation: 89 %

Exposure time: 28 d

Method: OECD Test Guideline 301B

Ethoxylated lauryl alcohol

Biodegradability: Based on data from similar materials Material is expected to be readily biodegradable.

Propane-1,2-diol

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Biodegradation may occur under anaerobic conditions (in the absence of oxygen).

10-day Window: Pass

Biodegradation: 81 %

Exposure time: 28 d

Method: OECD Test Guideline 301F or Equivalent

10-day Window: Not applicable

Biodegradation: 96 %

Exposure time: 64 d

Method: OECD Test Guideline 306 or Equivalent

Theoretical Oxygen Demand: 1.68 mg/mg

Chemical Oxygen Demand: 1.53 mg/mg

Biological oxygen demand (BOD)

Incubation Time	BOD
5 d	69.000 %
10 d	70.000 %
20 d	86.000 %

Photodegradation

Atmospheric half-life: 10 Hour

Method: Estimated.

Alcohols, C12-13, ethoxylated

Biodegradability: No relevant data found.

Hexamethyldisiloxane

Biodegradability: Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability. This material rapidly hydrolyzes to products that are either readily or ultimately biodegradable.

10-day Window: Not applicable

Biodegradation: 2 %

Exposure time: 28 d

Method: OECD Test Guideline 301C

Stability in Water (1/2-life)

Hydrolyses on contact with water.

Photodegradation

Test Type: Half-life (indirect photolysis)

Sensitization: OH radicals

Atmospheric half-life: 11.9 d

Method: Estimated.

Octamethyl Cyclotetrasiloxane

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

10-day Window: Not applicable

Biodegradation: 3.7 %

Exposure time: 28 d

Method: OECD Test Guideline 310

Stability in Water (1/2-life)

Hydrolysis, DT50, 3.9 d, pH 7, Half-life Temperature 25 °C, OECD Test Guideline 111

Hydrolysis, DT50, 16.7 d, pH 7, Half-life Temperature 12 °C, OECD Test Guideline 111

Hydrolysis, DT50, 0.075 d, pH 4, Half-life Temperature 25 °C, OECD Test Guideline 111

Photodegradation

Atmospheric half-life: 16 d

Method: Estimated.

Hexadecyltrimethyl ammonium chloride

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

10-day Window: Fail

Biodegradation: > 60 %

Exposure time: 28 d

Method: OECD Test Guideline 301D or Equivalent

Hexadecyltrimethylammonium acetate

Biodegradability: Based on data from similar materials

Biodegradation: 60 %

Exposure time: 28 d

Method: OECD Test Guideline 301D

Hexadecyldimethylamine

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

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

Biodegradation: > 60 %

Exposure time: 28 d

Method: OECD Test Guideline 301B or Equivalent

Mixture of: 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)

Biodegradability: Considered to be rapidly degradable. Material is not readily biodegradable according to OECD/EEC guidelines.

Biodegradation: < 50 %

Exposure time: 10 d

Photodegradation

Atmospheric half-life: 0.38 - 1.3 d

Bioaccumulative potential

Triethoxy(octyl)silane

Bioaccumulation: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).

Partition coefficient: n-octanol/water(log Pow): 6.41 OECD Test Guideline 117 or Equivalent

Bioconcentration factor (BCF): 1,890 Carp (Cyprinus carpio) 56 d OECD Test Guideline 305 or Equivalent

Siloxanes and Silicones, di-Me, polymers with 3-[(2-aminoethyl)amino]propyl silsesquioxanes, hydroxy-terminated

Bioaccumulation: No relevant data found.

Polyethylene oxide lauryl ether

Bioaccumulation: No relevant data found.

Ethoxylated lauryl alcohol

Bioaccumulation: Based on data from similar materials Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).

Bioconcentration factor (BCF): < 500

Propane-1,2-diol

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

Partition coefficient: n-octanol/water(log Pow): -1.07 Measured

Bioconcentration factor (BCF): 0.09 Fish Estimated.

Alcohols, C12-13, ethoxylated

Bioaccumulation: No relevant data found.

Hexamethyldisiloxane

Bioaccumulation: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5). Reacts with water.

Partition coefficient: n-octanol/water(log Pow): 5.06 Measured

Bioconcentration factor (BCF): 1,971 Carp (Cyprinus carpio) OECD Test Guideline 305C

Octamethyl Cyclotetrasiloxane

Bioaccumulation: Bioconcentration potential is high (BCF > 3000 or Log Pow between 5 and 7).

Partition coefficient: n-octanol/water(log Pow): 6.49 Measured

Bioconcentration factor (BCF): 12,400 Pimephales promelas (fathead minnow) Measured

Hexadecyltrimethyl ammonium chloride

Bioaccumulation: Based on data from similar materials Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).

Partition coefficient: n-octanol/water(log Pow): 3.08 Estimated by Structure-Activity Relationship (SAR).

Bioconcentration factor (BCF): 33 - 160 *Lepomis macrochirus* (Bluegill sunfish)

Hexadecyltrimethylammonium acetate

Bioaccumulation: Based on data from similar materials

Partition coefficient: n-octanol/water(log Pow): > 6.91

Hexadecyldimethylamine

Bioaccumulation: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5). For similar material(s):

Partition coefficient: n-octanol/water(log Pow): 4.6 Estimated.

Mixture of: 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3). 2-Methyl-4-isothiazolin-3-one(MIT): 5-Chloro-2-methyl-4-isothiazolin-3-one (CMIT):

Partition coefficient: n-octanol/water(log Pow): -0.486 Measured **Partition coefficient: n-octanol/water(log Pow):** 0.401 Measured

Mobility in soil**Triethoxy(octyl)silane**

Partition coefficient (Koc): > 5000 Estimated.

Siloxanes and Silicones, di-Me, polymers with 3-[(2-aminoethyl)amino]propyl silsesquioxanes, hydroxy-terminated

No relevant data found.

Polyethylene oxide lauryl ether

No relevant data found.

Ethoxylated lauryl alcohol

No relevant data found.

Propane-1,2-diol

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): < 1 Estimated.

Alcohols, C12-13, ethoxylated

No relevant data found.

Hexamethyldisiloxane

Partition coefficient (Koc): 390 - 4600 Estimated.

Octamethyl Cyclotetrasiloxane

Partition coefficient (Koc): 16596 OECD Test Guideline 106

Hexadecyltrimethyl ammonium chloride

No relevant data found.

Hexadecyldimethylamine

No relevant data found.

Mixture of: 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)

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): 28 Estimated.

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: 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.

14. TRANSPORT INFORMATION

TDG

Not regulated for transport

Classification for SEA transport (IMO-IMDG):

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

Not regulated for transport

Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Not regulated for transport

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.

15. REGULATORY INFORMATION

Canadian Domestic Substances List (DSL)

All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

16. OTHER INFORMATION

Revision

Identification Number: 4112671 / A208 / Issue Date: 01/06/2025 / Version: 14.0

In case this version of the SDS contains significant changes from the previous version, they are listed below or noted by bold, double bars in the left-hand margin throughout this document.

Changes encompass identification, hazards, tox/eco-tox information and the addition/removal of the ingredients, and regulatory information, hazard information, uses, risk management measures and other key regulatory changes of the product. Detailed explanation of the changes can be obtained upon request.

Legend

ACGIH	USA. ACGIH Threshold Limit Values (TLV)
CA AB OEL	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
CA BC OEL	Canada. British Columbia OEL
CA ON OEL	Canada. Ontario OELs
CA QC OEL	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
Dow IHG	Dow Industrial Hygiene Guideline
STEL	Short term exposure limit
STEV	Short-term exposure value
TWA	Time weighted average
TWAEV	time-weighted average exposure value
US WEEL	USA. Workplace Environmental Exposure Levels (WEEL)

Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; 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; HMIS - Hazardous Materials Identification System; 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; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; 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; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; 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

Information Source and References

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

DOW CHEMICAL CANADA ULC 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.

CA