



SAFETY DATA SHEET

DOW SILICONES CORPORATION

Product name: DOWSIL™ Z-6689 Water Repellent

Issue Date: 06/12/2025

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DOW SILICONES CORPORATION 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™ Z-6689 Water Repellent

Recommended use of the chemical and restrictions on use

Identified uses: Impregnation agents

COMPANY IDENTIFICATION

DOW SILICONES CORPORATION
2211 H.H. DOW WAY
MIDLAND MI 48674-0001
UNITED STATES

Customer Information Number:

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SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: 1 800 424 9300

Local Emergency Contact: 800-424-9300

2. HAZARDS IDENTIFICATION

Hazard classification

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids - Category 2

Eye irritation - Category 2A

Reproductive toxicity - Category 1B

Specific target organ toxicity - single exposure - Category 2

Label elements

Hazard pictograms



Signal word: **DANGER!**

Hazards

H225	Highly flammable liquid and vapour.
H319	Causes serious eye irritation.
H360	May damage fertility or the unborn child.
H371	May cause damage to organs (Eyes, Central nervous system).

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/ lighting equipment.
P242	Use non-sparking tools.
P243	Take action to prevent static discharges.
P260	Do not breathe spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

Response

P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P311	IF exposed or concerned: Call a POISON CENTER/ doctor.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
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/ container to an approved waste disposal plant.
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Other hazards

Static-accumulating flammable liquid.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature: Alkoxysilane

This product is a mixture.

Component	CASRN	Concentration
Methyltrimethoxysilane	1185-55-3	>= 8.0 - <= 11.0 %
Triethoxy(octyl)silane	2943-75-1	>= 4.4 - <= 5.7 %
Methanol	67-56-1	>= 1.7 - <= 4.5 %
Tetra n-Butyl titanate	5593-70-4	>= 1.8 - <= 2.1 %
Dimethyldimethoxysilane	1112-39-6	>= 0.08 - <= 0.13 %

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: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Obtain medical attention without delay. Wash clothing before reuse. Properly dispose of contaminated leather items, such as shoes, belts, and watchbands. Suitable emergency safety shower facility should be immediately available.

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: Do not induce vomiting. Seek medical attention immediately. If person is fully conscious give 1 cup or 8 ounces (240 ml) of water. If medical advice is delayed and if an adult has swallowed several ounces of chemical, then give 3-4 ounces (1/3-1/2 Cup) (90-120 ml) of hard liquor such as 80 proof whiskey. For children, give proportionally less liquor at a dose of 0.3 ounce (1 1/2 tsp.) (8 ml) liquor for each 10 pounds of body weight, or 2 ml per kg body weight [e.g., 1.2 ounce (2 1/3 tbsp.) for a 40 pound child or 36 ml for an 18 kg child].

Most important symptoms and effects, both acute and delayed:

Causes serious eye irritation. May damage fertility or the unborn child. May cause damage to organs.

Indication of any immediate medical attention and special treatment needed

Notes to physician: Maintain adequate ventilation and oxygenation of the patient. In cases where several ounces (60 - 100 ml) have been ingested, consider the use of ethanol and hemodialysis in the treatment. Consult standard literature for details of treatment. If ethanol is used, a therapeutically effective blood concentration in the range of 100 - 150 mg/dl may be achieved by a rapid loading dose followed by a continuous intravenous infusion. Consult standard literature for details of treatment. 4-Methyl pyrazole (Antizol®) is an effective blocker of alcohol dehydrogenase and should be used in the treatment of ethylene glycol (EG), di- or triethylene glycol (DEG, TEG), ethylene glycol butyl ether (EGBE), or methanol intoxication if available. Fomepizole protocol (Brent, J. et al., New England Journal of Medicine, Feb. 8, 2001, 344:6, p. 424-9): loading dose 15 mg/kg intravenously, follow by bolus dose of 10 mg/kg every 12 hours; after 48 hours, increase bolus dose to 15 mg/kg every 12 hours. Continue fomepizole until serum methanol, EG, DEG, TEG or EGBE are undetectable. The signs and symptoms of poisoning include anion gap metabolic acidosis, CNS depression, renal tubular injury, and possible late stage cranial nerve involvement. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. In severe poisoning, respiratory support with mechanical ventilation and positive end expiratory pressure may be required. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. 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. Metal oxides.

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.. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed.. Do not use a solid water stream as it may scatter and spread fire..

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. Ventilate the area. 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: Discharge into the environment must be avoided. 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. Do not breathe vapours or spray mist. Do not swallow. Do not get in eyes. Keep container tightly closed. 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. Non-sparking tools should be used. 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. Use only in an area equipped with explosion proof exhaust ventilation. Ensure all equipment is electrically grounded before beginning transfer operations. This material can accumulate static charge due to its inherent physical properties and can therefore cause an electrical ignition source to vapors. In order to prevent a fire hazard, as bonding and grounding may be insufficient to remove static electricity, it is necessary to provide an inert gas purge before beginning transfer operations. Restrict flow velocity in order to reduce the accumulation of static electricity. Ground and bond container and receiving equipment.

Conditions for safe storage: Keep in properly labelled containers. Store locked up. Keep tightly closed. 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. Organic peroxides. Flammable solids. Pyrophoric liquids. Pyrophoric solids. Self-heating substances and mixtures. Substances and mixtures, which in contact with water, emit flammable gases. Explosives. Gases. 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.

Component	Regulation	Type of listing	Value
Methyltrimethoxysilane	Dow IHG	TWA	7.5 ppm
	US WEEL	TWA	10 ppm
	US WEEL	STEL	55 mg/m3
Methanol	ACGIH	TWA	200 ppm
	Further information: Skin: Danger of cutaneous absorption		
	ACGIH	STEL	250 ppm
	Further information: Skin: Danger of cutaneous absorption		
	OSHA Z-1	TWA	260 mg/m3 200 ppm
Dimethyldimethoxysilane	Dow IHG	TWA	2.4 ppm
Ethanol	ACGIH	STEL	1,000 ppm
	Further information: URT irr: Upper Respiratory Tract irritation		
	OSHA Z-1	TWA	1,900 mg/m3 1,000 ppm
Butanol	ACGIH	TWA	20 ppm
	OSHA Z-1	TWA	300 mg/m3 100 ppm

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

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
Methanol	67-56-1	Methanol	Urine	End of shift (As soon as possible after exposure ceases)	15 mg/l	ACGIH BEI

Exposure controls

Engineering controls: Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. Local exhaust ventilation may be necessary for some operations. Lethal concentrations may exist in areas with poor ventilation.

Individual protection measures

Eye/face protection: Use 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"). 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: Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required, use an approved self-contained breathing apparatus or positive pressure air line with auxiliary self-contained air supply. For emergency and other conditions where the exposure guideline may be exceeded, use an approved positive-pressure self-contained breathing apparatus or positive-pressure air line with auxiliary self-contained air supply. In confined or poorly ventilated areas, use an approved self-contained breathing apparatus or positive pressure air line with auxiliary self-contained air supply.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state	liquid
Color	Straw-coloured
Odor	strong
Odor Threshold	No data available
pH	Not applicable, substance/mixture is non-soluble (in water)
Melting point/ range	No data available
Freezing point	No data available
Boiling point (760 mmHg)	> 65 °C (> 149 °F)
Flash point	Seta closed cup 10 °C (50 °F)
Evaporation Rate (Butyl Acetate = 1)	No data available
Flammability (solid, gas)	Not applicable
Lower explosion limit	No data available
Upper explosion limit	No data available
Vapor Pressure	No data available
Relative Vapor Density (air = 1)	No data available
Relative Density (water = 1)	0.96
Water solubility	insoluble
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Kinematic Viscosity	35 mm ² /s at 25 °C (77 °F)
Explosive properties	Not explosive
Oxidizing properties	The substance or mixture is not classified as oxidizing.
Molecular weight	No data available
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. Highly flammable liquid and vapour.

Conditions to avoid: Avoid static discharge. Heat, flames and sparks.

Incompatible materials: Avoid contact with oxidizing materials.

Hazardous decomposition products:

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

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. Methanol is highly toxic to humans and may cause central nervous system effects, visual disturbances up to blindness, metabolic acidosis, and degenerative damage to other organs including liver, kidney, and heart. Effects may be delayed.

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

Information for components:

Methyltrimethoxysilane

LD50, Rat, male and female, 11,685 mg/kg

This substance may hydrolyze to release Methanol. Methanol is highly toxic to humans and may cause central nervous system effects, visual disturbances up to

blindness, metabolic acidosis, and degenerative damage to other organs including liver, kidney, and heart.

Triethoxy(octyl)silane

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

Methanol

Methanol is highly toxic to humans and may cause central nervous system effects, visual disturbances up to blindness, metabolic acidosis, and degenerative damage to other organs including liver, kidney, and heart. Effects may be delayed. LD50, Rat, > 5,000 mg/kg

ALD - Approximate Lethal Dose, Humans, 340 mg/kg Estimated.

ALD - Approximate Lethal Dose, Humans, 29 - 237 ml Estimated.

Tetra n-Butyl titanate

LD50, Rat, male, 4,220 mg/kg

Dimethyldimethoxysilane

LD50, Rat, > 2,000 - 5,000 mg/kg

This substance may hydrolyze to release Methanol. Methanol is highly toxic to humans and may cause central nervous system effects, visual disturbances up to blindness, metabolic acidosis, and degenerative damage to other organs including liver, kidney, and heart.

Acute dermal toxicity

Information for the Product:

Prolonged skin contact is unlikely to result in absorption of harmful amounts. Effects of methanol are the same as observed via oral and inhalation exposure and include central nervous system (CNS) depression, visual impairment up to blindness, metabolic acidosis, with effects on organ systems such as liver, kidneys and heart, even death. As product: The dermal LD50 has not been determined.

Information for components:

Methyltrimethoxysilane

LD50, Rabbit, male and female, > 9,500 mg/kg OECD 402 or equivalent

This substance may hydrolyze to release Methanol. Effects of methanol are the same as observed via oral and inhalation exposure and include central nervous system (CNS) depression, visual impairment up to blindness, metabolic acidosis, with effects on organ systems such as liver, kidneys and heart, even death.

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

Methanol

Effects of methanol are the same as observed via oral and inhalation exposure and include central nervous system (CNS) depression, visual impairment up to blindness, metabolic acidosis, with effects on organ systems such as liver, kidneys and heart, even death. LD50, Rabbit, 15,800 mg/kg

Tetra n-Butyl titanate

LD50, Rabbit, 5,300 mg/kg

Dimethyldimethoxysilane

The dermal LD50 has not been determined.

This substance may hydrolyze to release Methanol. Effects of methanol are the same as observed via oral and inhalation exposure and include central nervous system (CNS) depression, visual impairment up to blindness, metabolic acidosis, with effects on organ systems such as liver, kidneys and heart, even death.

Acute inhalation toxicity

Information for the Product:

Brief exposure (minutes) is not likely to cause adverse effects. At lower concentrations: Excessive exposure may cause: Respiratory irritation Central nervous system depression Symptoms may include headache, dizziness and drowsiness, progressing to incoordination and unconsciousness. Inhalation of methanol may cause effects ranging from headache, narcosis and visual impairment to metabolic acidosis, blindness, and even death. Effects may be delayed.

As product: The LC50 has not been determined.

Information for components:

Methyltrimethoxysilane

LC50, Rat, male and female, 6 Hour, vapour, > 7605 ppm OECD Test Guideline 403

This substance may hydrolyze to release Methanol. Inhalation of methanol may cause effects ranging from headache, narcosis and visual impairment to metabolic acidosis, blindness, and even death.

Triethoxy(octyl)silane

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

Methanol

Easily attainable vapor concentrations may cause serious adverse effects, even death. At lower concentrations: May cause respiratory irritation and central nervous system depression. Symptoms may include headache, dizziness and drowsiness, progressing to incoordination and unconsciousness. Inhalation of methanol may cause effects ranging from headache, narcosis and visual impairment to metabolic acidosis, blindness, and even death. Effects may be delayed.

LC50, Rat, 4 Hour, vapour, 3 mg/l

Tetra n-Butyl titanate

LC50, Rat, 4 Hour, dust/mist, 11 mg/l

Dimethyldimethoxysilane

LC50, Rat, 4 Hour, vapour, > 4.7 mg/l

This substance may hydrolyze to release Methanol. Inhalation of methanol may cause effects ranging from headache, narcosis and visual impairment to metabolic acidosis, blindness, and even death.

Skin corrosion/irritation

Not classified based on available information.

Information for the Product:

Based on information for component(s):

Brief contact may cause slight skin irritation with local redness.

Prolonged contact may cause moderate skin irritation with local redness.

Information for components:

Methyltrimethoxysilane

Brief contact may cause slight skin irritation with local redness.

Triethoxy(octyl)silane

Brief contact may cause moderate skin irritation with local redness.

Prolonged contact may cause moderate skin irritation with local redness.

Methanol

Prolonged contact may cause slight skin irritation with local redness.

Tetra n-Butyl titanate

Prolonged contact may cause moderate skin irritation with local redness.

Dimethyldimethoxysilane

Brief contact is essentially nonirritating to skin.

Serious eye damage/eye irritation

Causes serious eye irritation.

Information for the Product:

Based on information for component(s):

May cause eye irritation.

May cause corneal injury.

Information for components:

Methyltrimethoxysilane

May cause slight temporary eye irritation.

Corneal injury is unlikely.

Triethoxy(octyl)silane

May cause slight eye irritation.

Corneal injury is unlikely.

Methanol

May cause eye irritation.

Tetra n-Butyl titanate

May cause moderate eye irritation.

May cause severe corneal injury.

May cause permanent impairment of vision.

Dimethyldimethoxysilane

Essentially nonirritating to eyes.

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:

Methyltrimethoxysilane

For skin sensitization:

Did not demonstrate the potential for contact allergy in mice.

For respiratory sensitization:

No relevant data found.

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.

Methanol

For skin sensitization:

No relevant data found.

For respiratory sensitization:

No relevant data found.

Tetra n-Butyl titanate

Did not demonstrate the potential for contact allergy in mice.

For respiratory sensitization:
No relevant data found.

Dimethyldimethoxysilane

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

For respiratory sensitization:
No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)

May cause damage to organs (Eyes, Central nervous system).

Information for the Product:

Product test data not available.

Information for components:

Methyltrimethoxysilane

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

Triethoxy(octyl)silane

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

Methanol

Causes damage to organs.
Target Organs: Eyes, Central nervous system

Tetra n-Butyl titanate

May cause respiratory irritation.
Route of Exposure: Inhalation
Target Organs: Respiratory Tract
May cause drowsiness or dizziness.
Route of Exposure: Inhalation
Target Organs: Nervous system

Dimethyldimethoxysilane

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:

Methyltrimethoxysilane

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.

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.

Methanol

May be harmful if swallowed and enters airways.

Tetra n-Butyl titanate

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

Dimethyldimethoxysilane

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:

Methyltrimethoxysilane

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

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.

Methanol

Methanol is highly toxic to humans and may cause central nervous system effects, visual disturbances up to blindness, metabolic acidosis, and degenerative damage to other organs including liver, kidney, and heart.

Tetra n-Butyl titanate

No relevant data found.

Dimethyldimethoxysilane

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

Liver

Male reproductive organs.

This material contains dimethyldimethoxysilane. Repeated exposure in rats to dimethyldimethoxysilane 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.

Carcinogenicity

Not classified based on available information.

Information for the Product:

Product test data not available.

Information for components:**Methyltrimethoxysilane**

No relevant data found.

Triethoxy(octyl)silane

No relevant data found.

Methanol

Did not cause cancer in laboratory animals.

Tetra n-Butyl titanate

No relevant data found.

Dimethyldimethoxysilane

No relevant data found.

Teratogenicity

May damage fertility or the unborn child.

Information for the Product:

Product test data not available.

Information for components:**Methyltrimethoxysilane**

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

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.

Methanol

Methanol has caused birth defects in mice at doses nontoxic to the mother as well as slight behavioral effects in offspring of rats.

Tetra n-Butyl titanate

No relevant data found.

Dimethyldimethoxysilane

Has caused birth defects in laboratory animals.

Reproductive toxicity

May damage fertility or the unborn child.

Information for the Product:

Product test data not available.

Information for components:

Methyltrimethoxysilane

In animal studies, did not interfere with reproduction.

Triethoxy(octyl)silane

In animal studies, did not interfere with reproduction.

Methanol

In animal studies, did not interfere with reproduction.

Tetra n-Butyl titanate

No relevant data found.

Dimethyldimethoxysilane

In animal studies, has been shown to interfere with fertility.

Mutagenicity

Not classified based on available information.

Information for the Product:

Product test data not available.

Information for components:

Methyltrimethoxysilane

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

Triethoxy(octyl)silane

In vitro genetic toxicity studies were negative.

Methanol

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

Tetra n-Butyl titanate

No relevant data found.

Dimethyldimethoxysilane

In vitro genetic toxicity studies were negative.

12. ECOLOGICAL INFORMATION

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

Toxicity

Methyltrimethoxysilane

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), flow-through, 96 Hour, > 110 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates

EC50, Daphnia magna (Water flea), flow-through test, 48 Hour, > 122 mg/l, OECD Test Guideline 202

Acute toxicity to algae/aquatic plants

No toxicity at the limit of solubility
ErC50, Pseudokirchneriella subcapitata (green algae), Static, 72 Hour, Growth rate inhibition, > 3.6 mg/l, OECD Test Guideline 201
No toxicity at the limit of solubility
NOEC, Pseudokirchneriella subcapitata (green algae), Static, 72 Hour, Growth rate inhibition, >= 3.6 mg/l, OECD Test Guideline 201

Toxicity to bacteria

EC10, activated sludge, Static, 3 Hour, Respiration rates., > 100 mg/l, OECD Test Guideline 209

Chronic toxicity to aquatic invertebrates

NOEC, Daphnia magna (Water flea), semi-static test, 21 d, number of offspring, >= 10 mg/l

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

Methanol**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, Bluegill sunfish (Lepomis macrochirus), flow-through test, 96 Hour, 15,400 mg/l

Acute toxicity to aquatic invertebrates

LC50, Daphnia magna (Water flea), 48 Hour, > 10,000 mg/l

Acute toxicity to algae/aquatic plants

ErC50, Pseudokirchneriella subcapitata (green algae), 96 Hour, Growth rate, 22,000 mg/l, OECD Test Guideline 201 or Equivalent

Toxicity to bacteria

IC50, activated sludge, 3 Hour, Respiration rates., > 1,000 mg/l, OECD Test Guideline 209

Chronic toxicity to fish

NOEC, Oryzias latipes (Orange-red killifish), 200 Hour, 15,800 mg/l

Tetra n-Butyl titanate**Acute toxicity to fish**

No relevant data found.

Dimethyldimethoxysilane**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).

Based on data from similar materials

LC50, Oncorhynchus mykiss (rainbow trout), 96 Hour, > 126 mg/l, OECD Test Guideline 203

Acute toxicity to aquatic invertebrates

EC50, Daphnia magna (Water flea), 48 Hour, > 119 mg/l, OECD Test Guideline 202

Acute toxicity to algae/aquatic plants

Based on data from similar materials

EC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, > 118 mg/l, OECD Test Guideline 201

Toxicity to bacteria

Based on data from similar materials
EC50, 3 Hour, > 100 mg/l, OECD Test Guideline 209

Persistence and degradability

Methyltrimethoxysilane

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.

Biodegradation: 54 %

Exposure time: 28 d

Method: Regulation (EC) No. 440/2008, Annex, C.4-A

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.

Methanol

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

Theoretical Oxygen Demand: 1.50 mg/mg

Chemical Oxygen Demand: 1.49 mg/mg Dichromates

Biological oxygen demand (BOD)

Incubation Time	BOD
5 d	72 %
20 d	79 %

Photodegradation

Test Type: Half-life (indirect photolysis)

Sensitization: OH radicals

Atmospheric half-life: 8 - 18 d

Method: Estimated.

Tetra n-Butyl titanate

Biodegradability: No relevant data found.

Dimethyldimethoxysilane

Biodegradability: For similar material(s): Material is not readily biodegradable according to OECD/EEC guidelines.

10-day Window: Fail
Biodegradation: 0 %
Exposure time: 28 d

Stability in Water (1/2-life)
Hydrolysis, DT50, < 0.6 Hour, pH 7

Bioaccumulative potential

Methyltrimethoxysilane

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): -0.82 Estimated.

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

Methanol

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): -0.77 Measured
Bioconcentration factor (BCF): < 10 Leuciscus idus (Golden orfe) Measured

Tetra n-Butyl titanate

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): 0.88 Estimated.

Dimethyldimethoxysilane

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): Pow: 2 estimated
Bioconcentration factor (BCF): 3.16 Estimated.

Mobility in soil

Methyltrimethoxysilane

No relevant data found.

Triethoxy(octyl)silane

Partition coefficient (Koc): > 5000 Estimated.

Methanol

Partition coefficient (Koc): 0.44 Estimated.

Tetra n-Butyl titanate

No relevant data found.

Dimethyldimethoxysilane

Partition coefficient (Koc): 168.6 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

DOT

Proper shipping name	Flammable liquids, n.o.s.(Methyltrimethoxysilane, Organo titanate)
UN number	UN 1993
Class	3
Packing group	II

Classification for SEA transport (IMO-IMDG):

Proper shipping name	FLAMMABLE LIQUID, N.O.S.(Methyltrimethoxysilane, Organo titanate)
UN number	UN 1993
Class	3
Packing group	II
Marine pollutant	No
Special precautions for user	EmS: F-E, S-E
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):

Proper shipping name	Flammable liquid, n.o.s.(Methyltrimethoxysilane, Organo titanate)
UN number	UN 1993
Class	3
Packing group	II

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

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Flammable (gases, aerosols, liquids, or solids)
Hazard not otherwise classified (physical hazards)
Reproductive toxicity
Specific target organ toxicity (single or repeated exposure)
Serious eye damage or eye irritation

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

The following components are subject to reporting levels established by SARA Title III, Section 313:

Components	CASRN
Methanol	67-56-1

Pennsylvania Worker and Community Right-To-Know Act:

The following chemicals are listed because of the additional requirements of Pennsylvania law:

Components	CASRN
Polydimethylsiloxane hydroxy-terminated	70131-67-8
Methyltrimethoxysilane	1185-55-3
Triethoxy(octyl)silane	2943-75-1

California Prop. 65

WARNING: This product can expose you to chemicals including Methanol, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

United States TSCA Inventory (TSCA)

All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

16. OTHER INFORMATION

Hazard Rating System

NFPA

Health	Flammability	Instability
2	3	0

HMIS

Health	Flammability	Physical Hazard
3*	3	0

* = Chronic Effects (See Hazards Identification)

Revision

Identification Number: 4026477 / A713 / Issue Date: 06/12/2025 / Version: 12.0

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)
ACGIH BEI	ACGIH - Biological Exposure Indices (BEI)
Dow IHG	Dow Industrial Hygiene Guideline
OSHA Z-1	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
STEL	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; 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 SILICONES CORPORATION 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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