



# SAFETY DATA SHEET

THE DOW CHEMICAL COMPANY

**Product name:** XIAMETER™ RTV-3203-U3 Catalyst

**Issue Date:** 11/08/2019

**Print Date:** 12/13/2019

THE DOW CHEMICAL COMPANY 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.

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## 1. IDENTIFICATION

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**Product name:** XIAMETER™ RTV-3203-U3 Catalyst

**Recommended use of the chemical and restrictions on use**

**Identified uses:** Vulcanising agents

### COMPANY IDENTIFICATION

THE DOW CHEMICAL COMPANY  
2030 DOW CENTER  
MIDLAND MI 48674-0000  
UNITED STATES

**Customer Information Number:**

800-258-2436  
SDSQuestion@dow.com

### EMERGENCY TELEPHONE NUMBER

**24-Hour Emergency Contact:** CHEMTREC +1 800-424-9300

**Local Emergency Contact:** 800-424-9300

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## 2. HAZARDS IDENTIFICATION

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### Hazard classification

GHS classification in accordance with 29 CFR 1910.1200

Flammable liquids - Category 3

Skin sensitisation - Category 1

Reproductive toxicity - Category 2

Specific target organ toxicity - repeated exposure - Category 1 - Oral

### Label elements

#### Hazard pictograms



Signal word: **DANGER!**

**Hazards**

Flammable liquid and vapour.

May cause an allergic skin reaction.

Suspected of damaging fertility or the unborn child.

Causes damage to organs (Central nervous system) through prolonged or repeated exposure if swallowed.

**Precautionary statements****Prevention**

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Keep away from heat, sparks, open flames and/or hot surfaces. No smoking.

Keep container tightly closed.

Ground and bond container and receiving equipment.

Use explosion-proof electrical, ventilating, and/or lighting equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge.

Do not breathe dust, fume, gas, mist, vapours and/or spray.

Wash skin thoroughly after handling.

Do not eat, drink or smoke when using this product.

Contaminated work clothing must not be allowed out of the workplace.

Wear protective gloves, protective clothing, eye protection and/or face protection.

**Response**

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF exposed or concerned: Get medical advice and/or attention.

If skin irritation or rash occurs: Get medical advice and/or attention.

Wash contaminated clothing before reuse.

In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

**Storage**

Store in a well-ventilated place. Keep cool.

Store locked up.

**Disposal**

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

**Other hazards**

No data available

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**3. COMPOSITION/INFORMATION ON INGREDIENTS**

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**Chemical nature:** Silicone elastomer

This product is a mixture.

Component	CASRN	Concentration
Methyltrimethoxysilane	1185-55-3	>= 5.0 - < 10.0 %

Tetraethoxysilane	78-10-4	>= 1.0 - < 5.0 %
Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane	68928-76-7	>= 1.0 - < 5.0 %
Methanol	67-56-1	>= 0.1 - < 1.0 %

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## 4. FIRST AID MEASURES

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### 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; if effects occur, consult a physician.

**Skin contact:** Remove material from skin immediately by washing with soap and plenty of water. Remove contaminated clothing and shoes while washing. Seek medical attention if irritation persists. Wash clothing before reuse. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands. Suitable emergency safety shower facility should be available in work area.

**Eye contact:** 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. Suitable emergency eye wash facility should be available in work area.

**Ingestion:** No emergency medical treatment necessary.

#### Most important symptoms and effects, both acute and delayed:

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

#### Indication of any immediate medical attention and special treatment needed

**Notes to physician:** No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Skin contact may aggravate preexisting dermatitis.

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## 5. FIREFIGHTING MEASURES

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### Extinguishing media

**Suitable extinguishing media:** Alcohol-resistant foam. Dry sand. Dry chemical.

**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 (NOx). Oxides of phosphorus. Metal oxides.

**Unusual Fire and Explosion Hazards:** Flash back possible over considerable distance.. Exposure to combustion products may be a hazard to health.. Vapours may form explosive mixtures with air..

#### Advice for firefighters

**Fire Fighting Procedures:** 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 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. Use water spray to cool unopened containers. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Remove undamaged containers from fire area if it is safe to do so. Evacuate area.

**Special protective equipment for firefighters:** In the event of fire, wear self-contained breathing apparatus.. Use personal protective equipment..

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## 6. ACCIDENTAL RELEASE MEASURES

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

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. Do not swallow. Avoid contact with 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.

Use with local exhaust 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 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
	Further information: Skin Sensitizer		
Tetraethoxysilane	ACGIH	TWA	10 ppm
	Further information: URT irr: Upper Respiratory Tract irritation; eye irr: Eye irritation; kidney dam: Kidney damage		
	OSHA Z-1	TWA	850 mg/m3 100 ppm
	Further information: (b): The value in mg/m3 is approximate.		
	CAL PEL	PEL	85 mg/m3 10 ppm
Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane	OSHA Z-1	TWA	0.1 mg/m3 , Tin
	ACGIH	TWA	0.1 mg/m3 , Tin
	Further information: Central nervous system; immune eff: Immune effects; URT irr: Upper Respiratory Tract irritation; headache: Headache; eye irr: Eye irritation; nausea: Nausea; A4: Not classifiable as a human carcinogen; Skin: Danger of cutaneous absorption; varies: varies		
	ACGIH	STEL	0.2 mg/m3 , Tin
	Further information: Central nervous system; immune eff: Immune effects; URT irr: Upper Respiratory Tract irritation; headache: Headache; eye irr: Eye irritation; nausea: Nausea; A4: Not classifiable as a human carcinogen; Skin: Danger of cutaneous absorption; varies: varies		
	OSHA P0	TWA	0.1 mg/m3 , Tin
	Further information: X: Skin notation		
	NIOSH REL	TWA	0.1 mg/m3 , Tin
	Further information: Also see specific listing for Cyhexatin.; skin: Potential for dermal absorption		
Methanol	ACGIH	TWA	200 ppm
	Further information: headache: Headache; nausea: Nausea; dizziness: Dizziness; eye dam: Eye damage; BEI: Substances for which there is a Biological Exposure		

	Index or Indices (see BEI® section); Skin: Danger of cutaneous absorption		
	ACGIH	STEL	250 ppm
	Further information: headache: Headache; nausea: Nausea; dizziness: Dizziness; eye dam: Eye damage; BEI: Substances for which there is a Biological Exposure Index or Indices (see BEI® section); Skin: Danger of cutaneous absorption		
	OSHA Z-1	TWA	260 mg/m3 200 ppm
	Further information: (b): The value in mg/m3 is approximate.		
	OSHA P0	STEL	325 mg/m3 250 ppm
	Further information: X: Skin notation		
	OSHA P0	TWA	260 mg/m3 200 ppm
	Further information: X: Skin notation		
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		
	OSHA Z-1	TWA	1,900 mg/m3 1,000 ppm
	Further information: (b): The value in mg/m3 is approximate.		
	CAL PEL	PEL	1,900 mg/m3 1,000 ppm
	OSHA P0	TWA	1,900 mg/m3 1,000 ppm

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

Methanol.

Ethanol

#### 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 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. If exposure causes eye discomfort, use a full-face respirator.

#### Skin protection

**Hand protection:** Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Butyl rubber. Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl alcohol ("PVA"). Polyvinyl chloride ("PVC" or "vinyl"). Viton. Examples of acceptable glove

barrier materials include: Natural rubber ("latex"). 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, use an approved respirator. When respiratory protection is required, use an approved positive-pressure self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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### Appearance

Physical state	liquid
Color	pink
Odor	alcohol-like
Odor Threshold	No data available
pH	No data available
Melting point/range	No data available
Freezing point	No data available
Boiling point (760 mmHg)	>65 °C ( 149 °F)
Flash point	<b>closed cup</b> 40 °C ( 104 °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)	0.954
Water solubility	No data available
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Kinematic Viscosity	50 cSt
Explosive properties	Not explosive
Oxidizing properties	The substance or mixture is not classified as oxidizing.
Molecular weight	No data available

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

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## 10. STABILITY AND REACTIVITY

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**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:** Heat, flames and sparks.

**Incompatible materials:** Oxidizing agents

**Hazardous decomposition products:**

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

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## 11. TOXICOLOGICAL INFORMATION

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*Toxicological information appears in this section when such data is 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 oral toxicity

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

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

Based on information for component(s):

LD50, Rat, > 5,000 mg/kg Estimated.

#### Information for components:

##### Methyltrimethoxysilane

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

##### Tetraethoxysilane

LD50, Rat, male and female, > 2,500 mg/kg OECD Test Guideline 425 No deaths occurred at this concentration.

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

LD50, Rat, 894 mg/kg

##### 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

Lethal Dose, Humans, 340 mg/kg Estimated.

Lethal Dose, Humans, 29 - 237 ml Estimated.

**Acute dermal toxicity**

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

As product: The dermal LD50 has not been determined.

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

**Information for components:****Methyltrimethoxysilane**

LD50, Rabbit, male and female, > 9,500 mg/kg

**Tetraethoxysilane**

LD50, Rabbit, 5,878 mg/kg

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

LD50, Rat, > 2,000 mg/kg

**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

**Acute inhalation toxicity**

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:****Methyltrimethoxysilane**

LC50, Rat, male and female, 4 Hour, vapour, 51.6 mg/l

**Tetraethoxysilane**

Prolonged excessive exposure may cause adverse effects. Vapor may cause irritation of the upper respiratory tract (nose and throat) and lungs.

LC50, Rat, male, 4 Hour, dust/mist, 10 mg/l OECD Test Guideline 403

LC50, Rat, female, 4 Hour, dust/mist, > 16.8 mg/l OECD Test Guideline 403

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

The LC50 has not been determined.

**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

**Skin corrosion/irritation**

Based on information for component(s):

Brief contact may cause skin irritation with local redness.

May cause drying and flaking of the skin.

**Information for components:****Methyltrimethoxysilane**

Brief contact is essentially nonirritating to skin.

**Tetraethoxysilane**

Brief contact may cause moderate skin irritation with local redness.

May cause drying and flaking of the skin.

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

Brief contact may cause slight skin irritation with local redness.

**Methanol**

Prolonged contact may cause slight skin irritation with local redness.

**Serious eye damage/eye irritation**

Based on information for component(s):

May cause eye irritation.

May cause slight temporary corneal injury.

May cause mild eye discomfort.

Vapor or mist may cause eye irritation.

**Information for components:****Methyltrimethoxysilane**

Essentially nonirritating to eyes.

Corneal injury is unlikely.

**Tetraethoxysilane**

For liquid:

Essentially nonirritating to eyes.

Corneal injury is unlikely.

Vapor may cause severe eye irritation.

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

May cause slight eye irritation.

May cause slight temporary corneal injury.

**Methanol**

May cause eye irritation.

**Sensitization**

For skin sensitization:

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

For respiratory sensitization:

No relevant data found.

**Information for components:****Methyltrimethoxysilane**

Has caused allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:

No relevant data found.

**Tetraethoxysilane**

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

For respiratory sensitization:

No relevant data found.

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

For skin sensitization:

No relevant data found.

For respiratory sensitization:

No relevant data found.

**Methanol**

For skin sensitization:

No relevant data found.

For respiratory sensitization:

No relevant data found.

**Specific Target Organ Systemic Toxicity (Single Exposure)**

Contains component(s) which are classified as specific target organ toxicant, single exposure, category 3.

**Information for components:****Methyltrimethoxysilane**

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

**Tetraethoxysilane**

May cause respiratory irritation.

Route of Exposure: Inhalation

Target Organs: Respiratory Tract

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

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

**Methanol**

Causes damage to organs.

Route of Exposure: Oral

Target Organs: Eyes, Central nervous system

**Aspiration Hazard**

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

**Information for components:**

**Methyltrimethoxysilane**

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

**Tetraethoxysilane**

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

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

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

**Methanol**

May be harmful if swallowed and enters airways.

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

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**

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

Kidney.

Central nervous system.

Thymus.

Liver.

Respiratory tract.

Lung.

**Information for components:**

**Methyltrimethoxysilane**

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

**Tetraethoxysilane**

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

Kidney.

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

For similar material(s):

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

Central nervous system.

Thymus.

**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.

**Carcinogenicity**

Based on information for component(s): Did not cause cancer in long-term animal studies which used routes of exposure considered relevant to industrial handling.

**Information for components:****Methyltrimethoxysilane**

No relevant data found.

**Tetraethoxysilane**

No relevant data found.

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

No relevant data found.

**Methanol**

Did not cause cancer in laboratory animals.

**Teratogenicity**

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

**Information for components:****Methyltrimethoxysilane**

No relevant data found.

**Tetraethoxysilane**

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

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

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

**Methanol**

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

**Reproductive toxicity**

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

**Information for components:****Methyltrimethoxysilane**

No relevant data found.

**Tetraethoxysilane**

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

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

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

**Methanol**

In animal studies, did not interfere with reproduction.

**Mutagenicity**

Contains component(s) which were negative in some in vitro genetic toxicity studies and positive in others. Genetic toxicity studies in animals were negative for component(s) tested.

**Information for components:****Methyltrimethoxysilane**

No relevant data found.

**Tetraethoxysilane**

In vitro genetic toxicity studies were predominantly negative.

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

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

Animal genetic toxicity studies were negative.

**Methanol**

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

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## 12. ECOLOGICAL INFORMATION

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*Ecotoxicological information appears in this section when such data is 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), 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**

ErC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, Growth rate inhibition, > 120 mg/l, OECD Test Guideline 201  
NOEC, Pseudokirchneriella subcapitata (green algae), 72 Hour, Growth rate inhibition, 120 mg/l, OECD Test Guideline 201

**Tetraethoxysilane****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, zebra fish (Brachydanio rerio), 96 Hour, > 245 mg/l

**Acute toxicity to aquatic invertebrates**

No toxicity at the limit of solubility

EC50, Daphnia magna (Water flea), 48 Hour, > 75 mg/l

**Acute toxicity to algae/aquatic plants**

ErC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, Growth rate inhibition, > 100 mg/l

**Toxicity to bacteria**

EC50, 3 Hour, > 100 mg/l, OECD Test Guideline 209

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

**Acute toxicity to fish**

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

For similar material(s):

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

**Acute toxicity to aquatic invertebrates**

For similar material(s):

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

**Acute toxicity to algae/aquatic plants**

For similar material(s):

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

For similar material(s):

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

**Toxicity to bacteria**

For similar material(s):

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

**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

### Persistence and degradability

#### Methyltrimethoxysilane

**Biodegradability:** No relevant data found.

#### Tetraethoxysilane

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

10-day Window: Pass

**Biodegradation:** 98 %

**Exposure time:** 28 d

**Method:** OECD Test Guideline 301A or Equivalent

#### **Stability in Water (1/2-life)**

Hydrolysis, DT50, 4.4 Hour, pH 7, Half-life Temperature 25 °C, OECD Test Guideline 111

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

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

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

**Biodegradation:** 3 %

**Exposure time:** 28 d

**Method:** OECD Test Guideline 301F or Equivalent

#### 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 Dichromate

#### **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.

### Bioaccumulative potential

#### Methyltrimethoxysilane

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

**Partition coefficient: n-octanol/water(log Pow):** -2.36



**Tetraethoxysilane**

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

**Partition coefficient: n-octanol/water(log Pow):** 3.18 EU Method A.8 (Partition Coefficient)

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

**Bioaccumulation:** No relevant data found.

**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

**Mobility in soil****Methyltrimethoxysilane**

No relevant data found.

**Tetraethoxysilane**

No relevant data found.

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

No relevant data found.

**Methanol**

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

**Partition coefficient (Koc):** 0.44 Estimated.

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## 13. DISPOSAL CONSIDERATIONS

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

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

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## 14. TRANSPORT INFORMATION

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DOT

<b>Proper shipping name</b>	Combustible liquid, n.o.s.(Methyltrimethoxysilane, Tetraethoxysilane)
<b>UN number</b>	NA 1993
<b>Class</b>	CBL
<b>Packing group</b>	III

**Classification for SEA transport (IMO-IMDG):**

<b>Proper shipping name</b>	FLAMMABLE LIQUID, N.O.S.(Methyltrimethoxysilane, Tetraethoxysilane)
<b>UN number</b>	UN 1993
<b>Class</b>	3
<b>Packing group</b>	III
<b>Marine pollutant</b>	No
<b>Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code</b>	Consult IMO regulations before transporting ocean bulk

**Classification for AIR transport (IATA/ICAO):**

<b>Proper shipping name</b>	Flammable liquid, n.o.s.(Methyltrimethoxysilane, Tetraethoxysilane)
<b>UN number</b>	UN 1993
<b>Class</b>	3
<b>Packing group</b>	III

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.

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## 15. REGULATORY INFORMATION

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**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)  
Respiratory or skin sensitisation  
Reproductive toxicity  
Specific target organ toxicity (single or repeated exposure)

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

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA)  
Section 103**

Calculated RQ exceeds reasonably attainable upper limit.

<b>Components</b>	<b>CASRN</b>	<b>RQ (RCRA Code)</b>
Methanol	67-56-1	5000 lbs RQ
Methanol	67-56-1	100 lbs RQ (F003)
Methanol	67-56-1	5000 lbs RQ
Methanol	67-56-1	100 lbs RQ (F003)

**Pennsylvania Right To Know**

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

<b>Components</b>	<b>CASRN</b>
Siloxanes and silicones, dimethyl	63148-62-9
Ethyl polysilicate	11099-06-2
Methyltrimethoxysilane	1185-55-3
Tetraethoxysilane	78-10-4

**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](http://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.

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**16. OTHER INFORMATION**

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**Hazard Rating System****NFPA**

<b>Health</b>	<b>Flammability</b>	<b>Instability</b>
2	2	0

**HMIS**

<b>Health</b>	<b>Flammability</b>	<b>Physical Hazard</b>
3*	2	0

\* = Chronic Effects (See Hazards Identification)

**Revision**

Identification Number: 4107675 / A001 / Issue Date: 11/08/2019 / Version: 7.0

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

**Legend**

ACGIH	USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI	ACGIH - Biological Exposure Indices (BEI)
CAL PEL	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
Dow IHG	Dow Industrial Hygiene Guideline
NIOSH REL	USA. NIOSH Recommended Exposure Limits

OSHA P0	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
OSHA Z-1	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
PEL	Permissible exposure limit
STEL	Short-term exposure limit
TWA	Time weighted average

#### Full text of other abbreviations

AICS - Australian Inventory of Chemical Substances; 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; 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.

THE DOW CHEMICAL COMPANY 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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