



# SAFETY DATA SHEET

THE DOW CHEMICAL COMPANY

**Product name:** SILASTIC™ RTV-3081-VF Mould-Making Curing Agent

**Issue Date:** 06/22/2022

**Print Date:** 06/23/2022

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:** SILASTIC™ RTV-3081-VF Mould-Making Curing Agent

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

**Identified uses:** Vulcanising agents Polymer

**COMPANY IDENTIFICATION**

THE DOW CHEMICAL COMPANY  
2211 H.H. DOW WAY  
MIDLAND MI 48674  
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 the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids - Category 3

Skin irritation - Category 2

Skin sensitisation - Category 1

Reproductive toxicity - Category 2

**Label elements**

**Hazard pictograms**



Signal word: **WARNING!**

#### **Hazards**

Flammable liquid and vapour.  
Causes skin irritation.  
May cause an allergic skin reaction.  
Suspected of damaging fertility or the unborn child.

#### **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/ hot surfaces. No smoking.  
Keep container tightly closed.  
Ground/bond container and receiving equipment.  
Use explosion-proof electrical/ ventilating/ lighting equipment.  
Use only non-sparking tools.  
Take precautionary measures against static discharge.  
Avoid breathing mist or vapours.  
Wash skin thoroughly after handling.  
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/ attention.  
If skin irritation or rash occurs: Get medical advice/ attention.  
Take off contaminated clothing and wash before reuse.  
In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide 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**

Static-accumulating flammable liquid.

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### **3. COMPOSITION/INFORMATION ON INGREDIENTS**

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**Chemical nature:** Organotin compound  
This product is a mixture.

<b>Component</b>	<b>CASRN</b>	<b>Concentration</b>
Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane	68928-76-7	>= 12.0 - <= 17.0 %
Methyltrimethoxysilane	1185-55-3	>= 8.0 - <= 11.0 %
Tetraethoxysilane	78-10-4	>= 2.2 - <= 4.2 %
Methanol	67-56-1	>= 0.15 - <= 0.26 %
Dimethyldimethoxysilane	1112-39-6	>= 0.08 - <= 0.14 %

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

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

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

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

Causes skin irritation. May cause an allergic skin reaction. Suspected of damaging fertility or the unborn child.

#### **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. Carbon dioxide (CO<sub>2</sub>). Dry chemical. 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<sub>x</sub>). 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.. 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 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..

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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, store recovered material in appropriate container. See sections: 7, 8, 11, 12 and 13.

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## 7. HANDLING AND STORAGE

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**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 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.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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### 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
Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane	OSHA Z-1	TWA	0.1 mg/m <sup>3</sup> , Tin
	ACGIH	TWA	0.1 mg/m <sup>3</sup> , Tin
Further information: A4: Not classifiable as a human carcinogen; Skin: Danger of cutaneous absorption			

	ACGIH	STEL	0.2 mg/m3 , Tin
	Further information: A4: Not classifiable as a human carcinogen; Skin: Danger of cutaneous absorption		
Methyltrimethoxysilane	Dow IHG	TWA	7.5 ppm
	Further information: Skin Sensitizer		
Tetraethoxysilane	ACGIH	TWA	10 ppm
	OSHA Z-1	TWA	850 mg/m3 100 ppm
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
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

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 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. 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:** 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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<b>Appearance</b>	
<b>Physical state</b>	liquid
<b>Color</b>	Clear to slightly hazy, colourless
<b>Odor</b>	not significant
<b>Odor Threshold</b>	No data available
<b>pH</b>	Not applicable, substance/mixture is non-soluble (in water)
<b>Melting point/range</b>	No data available
<b>Freezing point</b>	No data available
<b>Boiling point (760 mmHg)</b>	> 65 °C ( > 149 °F)
<b>Flash point</b>	<b>Seta closed cup</b> 25 °C ( 77 °F)
<b>Evaporation Rate (Butyl Acetate = 1)</b>	No data available
<b>Flammability (solid, gas)</b>	Not applicable
<b>Lower explosion limit</b>	No data available
<b>Upper explosion limit</b>	No data available
<b>Vapor Pressure</b>	No data available
<b>Relative Vapor Density (air = 1)</b>	No data available
<b>Relative Density (water = 1)</b>	1.004
<b>Water solubility</b>	insoluble
<b>Partition coefficient: n-octanol/water</b>	No data available
<b>Auto-ignition temperature</b>	No data available
<b>Decomposition temperature</b>	No data available
<b>Dynamic Viscosity</b>	30 mPa.s
<b>Kinematic Viscosity</b>	No data available
<b>Explosive properties</b>	Not explosive
<b>Oxidizing properties</b>	The substance or mixture is not classified as oxidizing.
<b>Molecular weight</b>	No data available
<b>Particle size</b>	Not applicable

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:** 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.

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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 Toxicity Endpoints:**

Not classified based on available information.

**Acute oral toxicity**

**Information for the Product:**

Very low toxicity if swallowed. Swallowing may result in gastrointestinal irritation. May cause nausea and vomiting.

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

Based on information for component(s):

LD50, > 5,000 mg/kg Estimated.

**Information for components:**

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

LD50, Rat, male and female, 892 mg/kg OECD 401 or equivalent

**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.

**Tetraethoxysilane**

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

**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.

**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.

As product: The dermal LD50 has not been determined.

Based on information for component(s):  
LD50, > 2,000 mg/kg Estimated.

**Information for components:**

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

LD50, Rat, > 2,000 mg/kg

**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.

**Tetraethoxysilane**

LD50, Rabbit, 5,878 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

**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. Vapor from heated material or mist may cause respiratory irritation. Excessive exposure may cause: Headache. May cause dizziness and drowsiness.

As product: The LC50 has not been determined.

**Information for components:**

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

As product: The LC50 has not been determined.

**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.

**Tetraethoxysilane**

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

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

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

LC50, Rat, 4 Hour, vapour, 17 mg/l

**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

**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**

Causes skin irritation.

**Information for the Product:**

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:**

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

Brief contact may cause skin irritation with local redness.

**Methyltrimethoxysilane**

Brief contact may cause slight skin irritation with local redness.

**Tetraethoxysilane**

Brief contact may cause moderate skin irritation with local redness.  
May cause drying and flaking of the skin.

**Methanol**

Prolonged contact may cause slight skin irritation with local redness.

**Dimethyldimethoxysilane**

Brief contact is essentially nonirritating to skin.

**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 slight temporary corneal injury.  
Vapor may cause eye irritation experienced as mild discomfort and redness.

**Information for components:**

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

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

**Methyltrimethoxysilane**

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

**Tetraethoxysilane**

Based on product testing:  
Essentially nonirritating to eyes.  
Corneal injury is unlikely.  
In humans, symptoms may include:  
Vapor may cause eye irritation experienced as mild discomfort and redness.

**Methanol**

May cause eye irritation.

**Dimethyldimethoxysilane**

Essentially nonirritating to eyes.

**Sensitization**

**For skin sensitization:**

May cause an allergic skin reaction.

**For respiratory sensitization:**

Not classified based on available information.

**Information for the Product:**

For skin sensitization:

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

For respiratory sensitization:

No relevant data found.

**Information for components:**

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

Has caused allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:

No relevant data found.

**Methyltrimethoxysilane**

For skin sensitization:

Did not demonstrate the potential for contact allergy in mice.

For respiratory sensitization:

No relevant data found.

**Tetraethoxysilane**

For skin sensitization:  
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.

**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)**

Not classified based on available information.

**Information for the Product:**

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

**Information for components:**

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

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

**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

**Methanol**

Causes damage to organs.  
Route of Exposure: Ingestion  
Target Organs: Eyes, Central 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:**

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

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

**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.

**Tetraethoxysilane**

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

**Methanol**

May be harmful if swallowed and enters airways.

**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:**

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

Kidney.

Blood

Liver

Immune system.

Respiratory tract.

**Information for components:**

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

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

Blood

Kidney

Liver

Immune system.

**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.

**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.

**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:**

Contains a component(s) which did not cause cancer in long-term animal studies which used routes of exposure considered relevant to industrial handling.

**Information for components:**

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

No relevant data found.

**Methyltrimethoxysilane**

No relevant data found.

**Tetraethoxysilane**

No relevant data found.

**Methanol**

Did not cause cancer in laboratory animals.

**Dimethyldimethoxysilane**

No relevant data found.

**Teratogenicity**

Suspected of damaging fertility or the unborn child.

**Information for the Product:**

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

**Information for components:**

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

No relevant data found.

**Methyltrimethoxysilane**

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

**Tetraethoxysilane**

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

**Dimethyldimethoxysilane**

Has caused birth defects in laboratory animals.

**Reproductive toxicity**

Suspected of damaging fertility or the unborn child.

**Information for the Product:**

Contains component(s) which have interfered with fertility in animal studies.

**Information for components:**

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

No relevant data found.

**Methyltrimethoxysilane**

In animal studies, did not interfere with reproduction.

**Tetraethoxysilane**

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

**Methanol**

In animal studies, did not interfere with reproduction.

**Dimethyldimethoxysilane**

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

**Mutagenicity**

Not classified based on available information.

**Information for the Product:**

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:**

**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.

**Methyltrimethoxysilane**

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

**Tetraethoxysilane**

In vitro genetic toxicity studies were predominantly negative.

**Methanol**

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

**Dimethyldimethoxysilane**

In vitro genetic toxicity studies were negative.

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## 12. ECOLOGICAL INFORMATION

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

### Toxicity

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

**Acute toxicity to fish**

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

For similar material(s):

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

**Acute toxicity to aquatic invertebrates**

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

**Acute toxicity to algae/aquatic plants**

ErC50, Algae (Scenedesmus subspicatus), Growth rate, 72 Hour, Growth rate, 7.6 mg/l, OECD Test Guideline 201 or Equivalent

For similar material(s):

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

**Toxicity to bacteria**

For similar material(s):

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

**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**

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

**Toxicity to bacteria**

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

**Chronic toxicity to aquatic invertebrates**

NOEC, Daphnia magna (Water flea), 28 d, number of offspring, >= 10 mg/l

**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, Directive 67/548/EEC, Annex V, C.1.

**Acute toxicity to aquatic invertebrates**

EC50, Daphnia magna (Water flea), 48 Hour, > 75 mg/l, OECD Test Guideline 202

**Acute toxicity to algae/aquatic plants**

ErC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, Growth rate inhibition, > 100 mg/l, OECD Test Guideline 201  
NOEC, Pseudokirchneriella subcapitata (green algae), 72 Hour, Growth rate inhibition, > 100 mg/l, OECD Test Guideline 201

**Toxicity to bacteria**

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

**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

**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**

**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

**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

**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

**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.

**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**

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

**Bioaccumulation:** No relevant data found.

**Methyltrimethoxysilane**

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

**Partition coefficient: n-octanol/water(log Pow):** -0.82 Estimated.

**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)

**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

**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**

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

No relevant data found.

**Methyltrimethoxysilane**

No relevant data found.

**Tetraethoxysilane**

No relevant data found.

**Methanol**

Partition coefficient (Koc): 0.44 Estimated.

**Dimethyldimethoxysilane**

Partition coefficient (Koc): 168.6 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**

**Proper shipping name** Flammable liquids, n.o.s.(Methyltrimethoxysilane,

	Tetraethoxysilane)
<b>UN number</b>	UN 1993
<b>Class</b>	3
<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>	Ethyl polysilicate
<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)  
Hazard not otherwise classified (physical hazards)  
Respiratory or skin sensitisation  
Reproductive toxicity  
Skin corrosion or irritation

**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.

**Pennsylvania Right To Know**

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

Components	CASRN
Siloxanes and silicones, dimethyl	63148-62-9
Ethyl polysilicate	11099-06-2
Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane	68928-76-7
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**

Health	Flammability	Instability
2	3	0

**HMIS**

Health	Flammability	Physical Hazard
2*	3	0

\* = Chronic Effects (See Hazards Identification)

**Revision**

Identification Number: 4107688 / A001 / Issue Date: 06/22/2022 / 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)
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

**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; TECl - 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.

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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