



SAFETY DATA SHEET

THE DOW CHEMICAL COMPANY

Product name: DOWSIL™ EA-3838 Fast Adhesive Catalyst

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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.

1. IDENTIFICATION

Product name: DOWSIL™ EA-3838 Fast Adhesive Catalyst

Recommended use of the chemical and restrictions on use

Identified uses: Sealant

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

2. HAZARDS IDENTIFICATION

Hazard classification

GHS classification in accordance with 29 CFR 1910.1200

Eye irritation - Category 2A

Skin sensitisation - Category 1

Label elements

Hazard pictograms



Signal word: **WARNING!**

Hazards

May cause an allergic skin reaction.
Causes serious eye irritation.

Precautionary statements**Prevention**

Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
Wash skin thoroughly after handling.
Contaminated work clothing must not be allowed out of the workplace.
Wear protective gloves/ eye protection/ face protection.

Response

IF ON SKIN: Wash with plenty of soap and water.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If skin irritation or rash occurs: Get medical advice/ attention.
If eye irritation persists: Get medical advice and/or attention.
Wash contaminated clothing before reuse.

Disposal

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

Other hazards

No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature: Curing agent

This product is a mixture.

Component	CASRN	Concentration
Methyltrimethoxysilane	1185-55-3	>= 4.397 - <= 5.2 %
3-(Trimethoxysilyl)-1-propylamine	13822-56-5	>= 1.926 - <= 2.376 %
Aminopropyltrimethoxysilane Rxn with Glycidoxypropyltrimethoxysilane and Methyltrimethoxysilane	123127-06-0	>= 0.576 - <= 1.056 %
Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane	68928-76-7	>= 0.18 - <= 0.22 %
Methanol	67-56-1	<= 0.1809 %

4. FIRST AID MEASURES

Description of first aid measures

General advice:

First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air and keep comfortable for breathing; consult a physician.

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

Eye contact: Immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes, then continue flushing eyes for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist. Suitable emergency eye wash facility should be immediately available.

Ingestion: Rinse mouth with water. 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.

5. FIREFIGHTING MEASURES

Extinguishing media

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

Unsuitable extinguishing media: None known..

Special hazards arising from the substance or mixture

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

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

Advice for firefighters

Fire Fighting Procedures: Use water spray to cool unopened containers.. Evacuate area.. Collect contaminated fire extinguishing water separately. This must not be discharged into drains.. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations..

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Remove undamaged containers from fire area if it is safe to do so.

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

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Follow safe handling advice and personal protective equipment recommendations.

Environmental precautions: Discharge into the environment must be avoided. Prevent further leakage or spillage if safe to do so. Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.

Methods and materials for containment and cleaning up: Wipe up or scrape up and contain for salvage or disposal. Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable. For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container.

See sections: 7, 8, 11, 12 and 13.

7. HANDLING AND STORAGE

Precautions for safe handling: Do not get on skin or clothing. Do not swallow. Do not get in eyes. Take care to prevent spills, waste and minimize release to the environment. Handle in accordance with good industrial hygiene and safety practice. CONTAINERS MAY BE HAZARDOUS WHEN EMPTY. Since emptied containers retain product residue follow all (M)SDS and label warnings even after container is emptied.

Use only with adequate ventilation. See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

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

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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

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

Component	Regulation	Type of listing	Value
Methyltrimethoxysilane	Dow IHG	TWA	7.5 ppm
	Further information: Skin Sensitizer		
Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane	OSHA Z-1	TWA	0.1 mg/m ³ , Tin
	ACGIH	TWA	0.1 mg/m ³ , Tin
	Further information: A4: Not classifiable as a human carcinogen; Skin: Danger of		

	cutaneous absorption		
	ACGIH	STEL	0.2 mg/m ³ , Tin
	Further information: A4: Not classifiable as a human carcinogen; Skin: Danger of cutaneous absorption		
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/m ³ 200 ppm

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

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 chemical goggles.

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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	
Physical state	paste
Color	white
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)	No data available
Flash point	Not applicable
Evaporation Rate (Butyl Acetate = 1)	No data available
Flammability (solid, gas)	Not expected to form explosive dust-air mixtures. Not classified as a flammability hazard
Lower explosion limit	No data available
Upper explosion limit	No data available
Vapor Pressure	Not applicable
Relative Vapor Density (air = 1)	No data available
Relative Density (water = 1)	1.62
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	No data available
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.

10. STABILITY AND REACTIVITY

Reactivity: Not classified as a reactivity hazard.

Chemical stability: Stable under normal conditions.

Possibility of hazardous reactions: Can react with strong oxidizing agents.

Conditions to avoid: None known.

Incompatible materials: Oxidizing agents

Hazardous decomposition products:

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

11. TOXICOLOGICAL INFORMATION

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

Information on likely routes of exposure

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. Swallowing may result in irritation of the mouth, throat, and gastrointestinal tract. May cause abdominal discomfort or diarrhea.

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:**Methyltrimethoxysilane**

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

3-(Trimethoxysilyl)-1-propylamine

LD50, Rat, male, 3,029 mg/kg OECD 401 or equivalent

Aminopropyltrimethoxysilane Rxn with Glycidoxypropyltrimethoxysilane and Methyltrimethoxysilane

LD50, Rat, > 2,000 mg/kg OECD 401 or equivalent

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

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

Methanol

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

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, > 2,000 mg/kg Estimated.

Information for components:

Methyltrimethoxysilane

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

3-(Trimethoxysilyl)-1-propylamine

LD50, Rabbit, male, > 2,000 mg/kg OECD 402 or equivalent

Aminopropyltrimethoxysilane Rxn with Glycidoxypropyltrimethoxysilane and Methyltrimethoxysilane

LD50, Rabbit, > 2,000 mg/kg OECD 402 or equivalent

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

No adverse effects are anticipated from inhalation. Vapor from heated material may cause respiratory irritation.

As product: The LC50 has not been determined.

Information for components:

Methyltrimethoxysilane

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

3-(Trimethoxysilyl)-1-propylamine

The LC50 has not been determined.

Aminopropyltrimethoxysilane Rxn with Glycidoxypropyltrimethoxysilane and Methyltrimethoxysilane

The LC50 has not been determined.

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

As product: 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 slight skin irritation with local redness.
May cause drying and flaking of the skin.

Information for components:

Methyltrimethoxysilane

Brief contact may cause slight skin irritation with local redness.

3-(Trimethoxysilyl)-1-propylamine

Brief contact may cause moderate skin irritation with local redness.

Aminopropyltrimethoxysilane Rxn with Glycidoxypropyltrimethoxysilane and Methyltrimethoxysilane

Brief contact is essentially nonirritating to skin.

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

Brief contact may cause 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 moderate eye irritation.
May cause moderate corneal injury.

Information for components:

Methyltrimethoxysilane

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

3-(Trimethoxysilyl)-1-propylamine

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

Aminopropyltrimethoxysilane Rxn with Glycidoxypropyltrimethoxysilane and Methyltrimethoxysilane

May cause severe eye irritation.
May cause moderate corneal injury.

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

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

For respiratory sensitization:
No relevant data found.

3-(Trimethoxysilyl)-1-propylamine

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

For respiratory sensitization:
No relevant data found.

Aminopropyltrimethoxysilane Rxn with Glycidoxypropyltrimethoxysilane and Methyltrimethoxysilane

For skin sensitization:
No relevant data found.

For respiratory sensitization:
No relevant data found.

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

Has caused allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

Methanol

For skin sensitization:
No relevant data found.

For respiratory sensitization:
No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)

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

Information for components:

Methyltrimethoxysilane

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

3-(Trimethoxysilyl)-1-propylamine

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

Aminopropyltrimethoxysilane Rxn with Glycidoxypropyltrimethoxysilane and Methyltrimethoxysilane

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

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

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

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

May be harmful if swallowed and enters airways.

3-(Trimethoxysilyl)-1-propylamine

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

Aminopropyltrimethoxysilane Rxn with Glycidoxypropyltrimethoxysilane and Methyltrimethoxysilane

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:
Liver

Contains an additional component(s) that is not expected to be bioavailable due to the physical state of the material under normal handling and processing conditions.

Information for components:

Methyltrimethoxysilane

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

3-(Trimethoxysilyl)-1-propylamine

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

Aminopropyltrimethoxysilane Rxn with Glycidoxypropyltrimethoxysilane and Methyltrimethoxysilane

No relevant data found.

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

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

Blood
Kidney
Liver
Immune system.

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

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:

Methyltrimethoxysilane

No relevant data found.

3-(Trimethoxysilyl)-1-propylamine

No relevant data found.

Aminopropyltrimethoxysilane Rxn with Glycidoxypropyltrimethoxysilane and Methyltrimethoxysilane

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.

Information for components:

Methyltrimethoxysilane

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

3-(Trimethoxysilyl)-1-propylamine

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

Aminopropyltrimethoxysilane Rxn with Glycidoxypropyltrimethoxysilane and Methyltrimethoxysilane

No relevant data found.

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

No relevant data found.

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 did not interfere with fertility in animal studies. Contains component(s) which did not interfere with reproduction in animal studies.

Information for components:

Methyltrimethoxysilane

In animal studies, did not interfere with reproduction.

3-(Trimethoxysilyl)-1-propylamine

For similar material(s): Limited data in laboratory animals suggest that the material does not affect reproduction.

Aminopropyltrimethoxysilane Rxn with Glycidoxypropyltrimethoxysilane and Methyltrimethoxysilane

No relevant data found.

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

No relevant data found.

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

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

3-(Trimethoxysilyl)-1-propylamine

In vitro genetic toxicity studies were negative.

Aminopropyltrimethoxysilane Rxn with Glycidoxypropyltrimethoxysilane and Methyltrimethoxysilane

In vitro genetic toxicity studies were negative.

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

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

Methanol

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

12. ECOLOGICAL INFORMATION

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, > 3.6 mg/l, OECD Test Guideline 201
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

3-(Trimethoxysilyl)-1-propylamine

Acute toxicity to fish

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).
For similar material(s):
LC50, zebra fish (Brachydanio rerio), 96 Hour, > 100 mg/l

Acute toxicity to aquatic invertebrates

For similar material(s):
EC50, Daphnia magna (Water flea), 48 Hour, > 100 mg/l

Acute toxicity to algae/aquatic plants

For similar material(s):
NOEC, Pseudokirchneriella subcapitata (green algae), 72 Hour, Growth rate inhibition, 1.3 mg/l
For similar material(s):
ErC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, Growth rate inhibition, > 100 mg/l

Toxicity to bacteria

For similar material(s):
EC50, Pseudomonas putida, Static, 5.75 Hour, Respiration rates., 43 mg/l

Chronic toxicity to aquatic invertebrates

For similar material(s):
NOEC, Daphnia magna (Water flea), 21 d, number of offspring, > 1 mg/l

Aminopropyltrimethoxysilane Rxn with Glycidoxypropyltrimethoxysilane and 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, > 100 mg/l, OECD Test Guideline 203

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

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: 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

3-(Trimethoxysilyl)-1-propylamine

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

10-day Window: Not applicable

Biodegradation: 76 %

Exposure time: 28 d

Method: OECD Test Guideline 306

Stability in Water (1/2-life)

Hydrolysis, DT50, 4.2 Hour, pH 7

Aminopropyltrimethoxysilane Rxn with Glycidoxypropyltrimethoxysilane and 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: 48.1 %

Exposure time: 28 d

Method: OECD Test Guideline 301B

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): -0.82 Estimated.

3-(Trimethoxysilyl)-1-propylamine

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): -2.8 Estimated by Structure-Activity Relationship (SAR).

Aminopropyltrimethoxysilane Rxn with Glycidoxypropyltrimethoxysilane and Methyltrimethoxysilane

Bioaccumulation: No relevant data found.

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.

3-(Trimethoxysilyl)-1-propylamine

No relevant data found.

Aminopropyltrimethoxysilane Rxn with Glycidoxypropyltrimethoxysilane and Methyltrimethoxysilane

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.

13. DISPOSAL CONSIDERATIONS

Disposal methods: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and

compliance with applicable laws are the responsibility 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.

14. TRANSPORT INFORMATION

DOT

Not regulated for transport

Classification for SEA transport (IMO-IMDG):

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

Not regulated for transport
Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Not regulated for transport

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

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

Respiratory or skin sensitisation
Serious eye damage or eye irritation

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

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

Calcium carbonate treated with stearic acid
Siloxanes and silicones, dimethyl
Methyltrimethoxysilane

CASRN

Not available
63148-62-9
1185-55-3

California Prop. 65

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

United States TSCA Inventory (TSCA)

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

16. OTHER INFORMATION

Hazard Rating System**NFPA**

Health	Flammability	Instability
2	1	0

HMIS

Health	Flammability	Physical Hazard
2/	1	0

Revision

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

Legend

ACGIH	USA. ACGIH Threshold Limit Values (TLV)
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

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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