SAFETY DATA SHEET
THE DOW CHEMICAL COMPANY

Product name: CC-8036

Issue Date: 03/22/2022
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RESEARCH SAMPLE.

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: CC-8036

Recommended use of the chemical and restrictions on use
Identified uses: Research sample.

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 the OSHA Hazard Communication Standard (29 CFR 1910.1200)
Flammable liquids - Category 2
Eye irritation - Category 2A
Skin sensitisation - Category 1
Reproductive toxicity - Category 2

Label elements
Hazard pictograms

Signal word: **DANGER!**

Hazards
Highly flammable liquid and vapour.
May cause an allergic skin reaction.
Causes serious eye irritation.
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 IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF exposed or concerned: Get medical advice/ attention.
If skin irritation or rash occurs: Get medical advice/ attention.
If eye irritation persists: Get medical advice/ attention.
Wash contaminated clothing 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
No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

Component	CASRN	Concentration
Fumed silica	Trade secret	>= 5.0 - <= 28.0 %
Alkoxysilane	Trade secret	>= 0.5 - <= 6.0 %
Tetraethoxysilane	78-10-4	<= 4.0 %
Di-t-butyl-p-cresol	128-37-0	>= 0.03 - <= 2.0 %
Ketone	Trade secret	>= 0.1 - <= 2.0 %
Silane	Trade secret	<= 2.0 %
Dimethyl Cyclosiloxanes	69430-24-6	>= 0.082 - <= 1.0 %
metal catalyst	Trade secret	>= 0.02 - <= 1.0 %
Aryl phosphine oxide	Trade secret	<= 1.0 %
Methanol	67-56-1	>= 0.02 - <= 0.13 %
1,2-Bis (trimethoxysilyl) ethane	18406-41-2	<= 50.0 PPM

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.

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

5. FIREFIGHTING MEASURES

Extinguishing media

Suitable extinguishing media: Alcohol-resistant foam. 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: Silicon oxides. Sulphur oxides. Formaldehyde. Carbon oxides. Nitrogen oxides (NOx). Metal oxides. Oxides of phosphorus.

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..

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Remove all sources of ignition. Ventilate the area. Use personal protective equipment. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Ground and bond all containers and

handling equipment. Vapor explosion hazard. Keep out of sewers. Follow safe handling advice and personal protective equipment recommendations.

Environmental precautions: Do not release the product to the aquatic environment above defined regulatory levels Prevent further leakage or spillage if safe to do so. Prevent spreading over a wide area (e.g. by containment or oil barriers). Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.

Methods and materials for containment and cleaning up: Non-sparking tools should be used. Soak up with inert absorbent material. Suppress (knock down) gases/vapours/mists with a water spray jet. Clean up remaining materials from spill with suitable absorbant. Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable. For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container.
See sections: 7, 8, 11, 12 and 13.

7. HANDLING AND STORAGE

Precautions for safe handling: Do not get on skin or clothing. Avoid inhalation of vapour or mist. Do not swallow. Do not get in eyes. Keep container tightly closed. Keep away from heat and sources of ignition. Take precautionary measures against static discharges. Take care to prevent spills, waste and minimize release to the environment. Non-sparking tools should be used. Handle in accordance with good industrial hygiene and safety practice. CONTAINERS MAY BE HAZARDOUS WHEN EMPTY. Since emptied containers retain product residue follow all (M)SDS and label warnings even after container is emptied.
Use with local exhaust ventilation. Use only in an area equipped with explosion proof exhaust ventilation. 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
Fumed silica	Dow IHG	TWA Respirable fraction	0.1 mg/m3
Alkoxysilane	Dow IHG	TWA	7.5 ppm
	Further information: Skin Sensitizer		
Tetraethoxysilane	ACGIH	TWA	10 ppm
	OSHA Z-1	TWA	850 mg/m3 100 ppm

Di-t-butyl-p-cresol	ACGIH	TWA Inhalable fraction and vapor	2 mg/m3
	Further information: A4: Not classifiable as a human carcinogen		
Silane	Dow IHG	TWA	0.5 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
1,2-Bis (trimethoxysilyl) ethane	Dow IHG	TWA	0.15 Parts per billion
	Dow IHG	STEL	1 Parts per billion
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
Isopropanol	ACGIH	TWA	200 ppm
	Further information: A4: Not classifiable as a human carcinogen		
	ACGIH	STEL	400 ppm
	Further information: A4: Not classifiable as a human carcinogen		
	OSHA Z-1	TWA	980 mg/m3 400 ppm

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

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
Isopropanol	67-63-0	Acetone	Urine	End of shift at end of workweek	40 mg/l	ACGIH BEI

Exposure controls

Engineering controls: Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations.

Individual protection measures

Eye/face protection: Use chemical goggles. If exposure causes eye discomfort, use a full-face respirator.

Skin protection

Hand protection: Use gloves chemically resistant to this material.

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	Liquid.
Color	Translucent
Odor	Aromatic
Odor Threshold	No test 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	**closed cup** No data available **open cup** 68 °C (154 °F) at 760 mmHg *Estimated.*
Evaporation Rate (Butyl Acetate = 1)	Not available
Flammability (solid, gas)	Not Applicable
Flammability (liquids)	Not expected to be a static-accumulating flammable liquid.
Lower explosion limit	Liquid.
Upper explosion limit	Liquid.
Vapor Pressure	No data available
Relative Vapor Density (air = 1)	No data available
Relative Density (water = 1)	No data available
Water solubility	Not applicable
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	No data available
Oxidizing properties	No data available
Molecular weight	*Not reported*

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. Highly flammable liquid and vapour.

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

Incompatible materials: Avoid contact with oxidizing materials.

Hazardous decomposition products:
Decomposition products can include and are not limited to: Methanol. Formaldehyde. Isopropanol. Phosphorus oxides. Ethanol.

11. TOXICOLOGICAL INFORMATION

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. Harmful effects not anticipated from swallowing small amounts.
As product: Single dose oral LD50 has not been determined.

Information for components:

Fumed silica
Based on testing for product(s) in this family of materials: LD50, Rat, > 2,000 mg/kg OECD 401 or equivalent No deaths occurred at this concentration.

Alkoxysilane
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.

Di-t-butyl-p-cresol
LD50, Rat, > 6,000 mg/kg OECD Test Guideline 401

Ketone
LD50, Rat, male and female, 1,694 mg/kg OECD Test Guideline 401

Silane
LD50, Rat, male and female, 8,025 mg/kg OECD 401 or equivalent

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.

Dimethyl Cyclosiloxanes
LD50, Rat, > 20,000 mg/kg

metal catalyst
LD50, Rat, male, 23,020 mg/kg OECD 401 or equivalent

Aryl phosphine oxide
LD50, Rat, > 2,000 mg/kg 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.

1,2-Bis (trimethoxysilyl) ethane
LD50, Rat, 1,910 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

Information for components:

Fumed silica
For similar material(s): LD50, Rabbit, > 2,000 mg/kg No deaths occurred at this concentration.

The dermal LD50 has not been determined.

Alkoxysilane
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

Di-t-butyl-p-cresol
LD50, Rat, male and female, > 2,000 mg/kg OECD Test Guideline 402 No deaths occurred at this concentration.

Ketone
LD50, Rat, male and female, 6,929 mg/kg OECD Test Guideline 402

Silane
LD50, Rabbit, male, 4,250 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.

Dimethyl Cyclosiloxanes
The dermal LD50 has not been determined.

metal catalyst
For similar material(s): LD50, Rabbit, 12,870 mg/kg

Aryl phosphine oxide
LD50, Rat, male and female, > 2,000 mg/kg No deaths occurred at this concentration.

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

1,2-Bis (trimethoxysilyl) ethane
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:

At room temperature, exposure to vapor is minimal due to low volatility. Vapor may cause irritation of the upper respiratory tract (nose and throat) and lungs. Excessive exposure may cause: Central nervous system effects.

As product: The LC50 has not been determined.

Information for components:

Fumed silica
The LC50 has not been determined.

Alkoxysilane
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

Di-t-butyl-p-cresol
The LC50 has not been determined.

Ketone
Prolonged excessive exposure may cause adverse effects.

Silane
LC50, Rat, 4 Hour, dust/mist, > 5.3 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.

Dimethyl Cyclosiloxanes
The LC50 has not been determined.

metal catalyst

For similar material(s): LC50, Rat, male and female, 4 Hour, vapour, > 198.65 mg/l
No deaths occurred at this concentration.

Aryl phosphine oxide
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

1,2-Bis (trimethoxysilyl) ethane
LC50, Rat, 4 Hour, vapour, 0.03 mg/l

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

Skin corrosion/irritation

Not classified based on available information.

Information for the Product:

Based on information for component(s):
Brief contact may cause slight skin irritation with local redness.
May cause drying and flaking of the skin.

Information for components:

Fumed silica
Based on testing for product(s) in this family of materials:
Brief contact is essentially nonirritating to skin.

Alkoxysilane
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.

Di-t-butyl-p-cresol
Brief contact is essentially nonirritating to skin.
Prolonged contact may cause slight skin irritation with local redness.

Ketone
Brief contact may cause slight skin irritation with local redness.

Silane

Brief contact may cause slight skin irritation with local redness.
Prolonged contact may cause moderate skin irritation with local redness.

Dimethyl Cyclosiloxanes
Brief contact may cause slight skin irritation with local redness.

metal catalyst
Brief contact is essentially nonirritating to skin.

Aryl phosphine oxide
Brief contact may cause slight skin irritation with local redness.

Methanol
Prolonged contact may cause slight skin irritation with local redness.

1,2-Bis (trimethoxysilyl) ethane
Prolonged contact may cause skin burns. Symptoms may include pain, severe local redness, swelling, and tissue damage.

Serious eye damage/eye irritation

Causes serious eye irritation.

Information for the Product:

Based on information for component(s):
May cause moderate eye irritation.
May cause corneal injury.
Vapor may cause eye irritation experienced as mild discomfort and redness.

Information for components:

Fumed silica
Based on testing for product(s) in this family of materials:
May cause irritation or corneal injury due to mechanical action.

Alkoxysilane
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.

Di-t-butyl-p-cresol
May cause slight eye irritation.
May cause slight temporary corneal injury.

Ketone
May cause slight temporary eye irritation.

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

Dimethyl Cyclosiloxanes
May cause slight eye irritation.

metal catalyst
May cause moderate eye irritation.
May cause corneal injury.

Aryl phosphine oxide
May cause slight temporary eye irritation.

Methanol
May cause eye irritation.

1,2-Bis (trimethoxysilyl) ethane
May cause severe eye irritation.

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:
Based on information for component(s):
Skin contact may cause an allergic skin reaction in a small proportion of individuals.

For respiratory sensitization:
No relevant data found.

Information for components:

Fumed silica
For skin sensitization:
Based on testing for product(s) in this family of materials:
Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

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

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.

Di-t-butyl-p-cresol
Skin contact may cause an allergic skin reaction in a small proportion of individuals.

For respiratory sensitization:
No relevant data found.

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

For respiratory sensitization:
No relevant data found.

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

For respiratory sensitization:
No relevant data found.

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

For respiratory sensitization:
No relevant data found.

metal catalyst
For similar material(s):
Did not demonstrate the potential for contact allergy in mice.

For respiratory sensitization:
No relevant data found.

Aryl phosphine oxide
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.

1,2-Bis (trimethoxysilyl) ethane
For skin sensitization:

No relevant data found.

For respiratory sensitization:
No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)

Not classified based on available information.

Information for the Product:

Product test data not available.

Information for components:

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

Alkoxysilane
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

Di-t-butyl-p-cresol
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

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

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

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

metal catalyst
May cause drowsiness or dizziness.
Route of Exposure: Inhalation
Target Organs: Central nervous system

Aryl phosphine oxide
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

1,2-Bis (trimethoxysilyl) ethane
Available data are inadequate to determine single exposure specific target organ toxicity.

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:

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

Alkoxysilane
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.

Di-t-butyl-p-cresol
Based on physical properties, not likely to be an aspiration hazard.

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

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

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

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

Aryl phosphine oxide
No aspiration toxicity classification

Methanol
May be harmful if swallowed and enters airways.

1,2-Bis (trimethoxysilyl) ethane
Based on available information, aspiration hazard could not be determined.

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

Specific Target Organ Systemic Toxicity (Repeated Exposure)

Not classified based on available information.

Information for the Product:

Product test data not available.

Information for components:

Fumed silica
No relevant data found.

Alkoxysilane
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.

Di-t-butyl-p-cresol
BHT is toxic only at concentrations much higher than normally consumed in man, causing organ changes (liver, lung, brain, thyroid, kidney) and anti-clotting effects; however, it may enhance or inhibit the effects of other substances.

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

Silane
For similar material(s):
Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

Dimethyl Cyclosiloxanes
No relevant data found.

metal catalyst
For similar material(s):
Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

Aryl phosphine oxide
In animals, effects have been reported on the following organs:
Blood.

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.

1,2-Bis (trimethoxysilyl) ethane
In animals, effects have been reported on the following organs:
Nasal Cavity
Respiratory tract.
Eye.

Carcinogenicity

Not classified based on available information.

Information for the Product:

Product test data not available.

Information for components:

Fumed silica
No relevant data found.

Alkoxysilane
No relevant data found.

Tetraethoxysilane
No relevant data found.

Di-t-butyl-p-cresol
It is generally recognized that at high doses BHT may act as a promoter or inhibitor of certain tumor formation in laboratory animals; at the maximum acceptable daily intake for man it is not believed to cause cancer.

Ketone
No relevant data found.

Silane
Did not cause cancer in laboratory animals.

Dimethyl Cyclosiloxanes
No relevant data found.

metal catalyst
No relevant data found.

Aryl phosphine oxide
No relevant data found.

Methanol
Did not cause cancer in laboratory animals.

1,2-Bis (trimethoxysilyl) ethane
No relevant data found.

Teratogenicity

Suspected of damaging fertility or the unborn child.

Information for the Product:

Product test data not available.

Information for components:

Fumed silica

Based on testing for product(s) in this family of materials: Did not cause birth defects or any other fetal effects in laboratory animals.

Alkoxysilane
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.

Di-t-butyl-p-cresol
Did not cause birth defects in laboratory animals.

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

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

Dimethyl Cyclosiloxanes
No relevant data found.

metal catalyst
For similar material(s): Did not cause birth defects or other effects in the fetus even at doses which caused toxic effects in the mother.

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

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

1,2-Bis (trimethoxysilyl) ethane
No relevant data found.

Reproductive toxicity

Suspected of damaging fertility or the unborn child.

Information for the Product:

Product test data not available.

Information for components:

Fumed silica
Based on testing for product(s) in this family of materials: In animal studies, did not interfere with reproduction.

Alkoxysilane
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.

Di-t-butyl-p-cresol
Available data are inadequate to determine effects on reproduction.

Ketone
No relevant data found.

Silane
In animal studies, did not interfere with reproduction.

Dimethyl Cyclosiloxanes
For similar material(s): In animal studies, has been shown to interfere with fertility.

metal catalyst
No relevant data found.

Aryl phosphine oxide
No relevant data found.

Methanol
In animal studies, did not interfere with reproduction.

1,2-Bis (trimethoxysilyl) ethane
No relevant data found.

Mutagenicity

Not classified based on available information.

Information for the Product:

Product test data not available.

Information for components:

Fumed silica
Based on testing for product(s) in this family of materials: In vitro genetic toxicity studies were negative.

Alkoxysilane
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.

Di-t-butyl-p-cresol
In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were predominantly negative.

Ketone
In vitro genetic toxicity studies were negative.

Silane
Glycidoxypropyltrimethoxysilane was found to be genetically active in Ames reverse mutation assays, In Vitro sister chromatid exchange assays, and an In Vivo mouse micronucleus assay. This ingredient was not genetically active in an In Vivo cytogenetic assay (mice) or in an In Vivo sister chromatid exchange assay (rabbits, rats). The potential relevance of these data to humans is not known.

Dimethyl Cyclosiloxanes
No relevant data found.

metal catalyst
In vitro genetic toxicity studies were negative.

Aryl phosphine oxide
In vitro mutagenicity 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.

1,2-Bis (trimethoxysilyl) ethane
No relevant data found.

12. ECOLOGICAL INFORMATION

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

Toxicity

Fumed silica

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 testing for product(s) in this family of materials:
LC50, Danio rerio (zebra fish), 96 Hour, > 1,000 mg/l, OECD Test Guideline 203

Acute toxicity to aquatic invertebrates
Based on testing for product(s) in this family of materials:
EC50, Daphnia magna (Water flea), 48 Hour, > 100 mg/l, OECD Test Guideline 202

Acute toxicity to algae/aquatic plants
Based on testing for product(s) in this family of materials:
ErC50, Scenedesmus quadricauda (Green algae), 72 Hour, Growth rate, > 10,000 mg/l, OECD Test Guideline 201

Toxicity to bacteria
Based on testing for product(s) in this family of materials:
EC50, activated sludge, 3 Hour, Respiration rates., > 1,000 mg/l, OECD Test Guideline 209

Alkoxysilane

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

Di-t-butyl-p-cresol

Acute toxicity to fish
Material is highly toxic to aquatic organisms on an acute basis (LC50/EC50 between 0.1 and 1 mg/L in the most sensitive species tested).
LC50, Danio rerio (zebra fish), 96 Hour, > 0.57 mg/l

Acute toxicity to aquatic invertebrates
EC50, Daphnia magna (Water flea), static test, 48 Hour, 0.48 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants

EC10, Desmodesmus subspicatus (green algae), 72 Hour, 0.4 mg/l, Directive 67/548/EEC, Annex V, C.3.
EC50, Desmodesmus subspicatus (green algae), 72 Hour, > 0.4 mg/l, Directive 67/548/EEC, Annex V, C.3.

Toxicity to bacteria
EC50, 3 Hour, > 10,000 mg/l

Chronic toxicity to aquatic invertebrates
NOEC, Daphnia magna (Water flea), semi-static test, 21 d, number of offspring, 0.07 mg/l

Ketone

Acute toxicity to fish
Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested).
LC50, Leuciscus idus (Golden orfe), 48 Hour, 160 mg/l, DIN 38412

Acute toxicity to aquatic invertebrates
EC50, Daphnia magna, Static, 48 Hour, > 119 mg/l, OECD Test Guideline 202

Acute toxicity to algae/aquatic plants
EC50, Desmodesmus subspicatus (green algae), Static, 72 Hour, Growth rate, 1.95 mg/l, OECD Test Guideline 201
NOEC, Desmodesmus subspicatus (green algae), Static, 72 Hour, Growth rate, 0.194 mg/l, OECD Test Guideline 201

Toxicity to bacteria
EC50, 3 Hour, > 1,000 mg/l, OECD Test Guideline 209

Silane

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).
LC50, Carp (Cyprinus carpio), semi-static test, 96 Hour, 55 mg/l, Directive 67/548/EEC, Annex V, C.1.

Acute toxicity to aquatic invertebrates
LC50, Daphnia magna (Water flea), static test, 48 Hour, 324 mg/l

Acute toxicity to algae/aquatic plants
ErC50, Pseudokirchneriella subcapitata (algae), static test, 96 Hour, Growth rate, 350 mg/l, OECD Test Guideline 201 or Equivalent
NOEC, Pseudokirchneriella subcapitata (algae), static test, 96 Hour, Growth rate, 130 mg/l, OECD Test Guideline 201 or Equivalent

Toxicity to bacteria
EC50, activated sludge, Static, 3 Hour, Respiration rates., > 100 mg/l, OECD 209 Test

Chronic toxicity to aquatic invertebrates
NOEC, Daphnia magna (Water flea), semi-static test, 21 d, number of offspring, 100 mg/l

Dimethyl Cyclosiloxanes

Acute toxicity to algae/aquatic plants
For similar material(s):

No toxicity at the limit of solubility

metal catalyst

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, Rasbora heteromorpha (Harlequin fish), static test, 96 Hour, 4,200 mg/l

Acute toxicity to aquatic invertebrates
LC50, Daphnia magna (Water flea), static test, 48 Hour, > 100 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants
ErC50, Pseudokirchneriella subcapitata (green algae), static test, 72 Hour, Growth rate inhibition, > 100 mg/l, OECD Test Guideline 201 or Equivalent
NOEC, Pseudokirchneriella subcapitata (green algae), static test, 72 Hour, Growth rate inhibition, 100 mg/l, OECD Test Guideline 201 or Equivalent

Aryl phosphine oxide

Acute toxicity to fish
Not expected to be acutely toxic to aquatic organisms.
No toxicity at the limit of solubility
LC50, Danio rerio (zebra fish), semi-static test, 96 Hour, >0.09 mg/l

Acute toxicity to aquatic invertebrates
No toxicity at the limit of solubility
EC50, Daphnia magna, Static, 48 Hour, >1.175 mg/l

Acute toxicity to algae/aquatic plants
No toxicity at the limit of solubility
EC50, Algae (Desmodesmus subspicatus), Static, 72 Hour, Growth rate, >0.260 mg/l

Toxicity to bacteria
EC50, activated sludge, Static, 3 Hour, Respiration rates., >100 mg/l

Chronic toxicity to aquatic invertebrates
NOEC, Daphnia magna, semi-static test, 21 d, number of offspring, >0.081 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

1,2-Bis (trimethoxysilyl) ethane

Acute toxicity to aquatic invertebrates
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).
Material is harmful to aquatic organisms (LC50/EC50/IC50 between 10 and 100 mg/L in the most sensitive species).
For similar material(s):
EL50, Daphnia magna (Water flea), 48 Hour, 92.2 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants
For similar material(s):
EL50, Pseudokirchneriella subcapitata (green algae), 72 Hour, Growth rate, 671 mg/l, OECD Test Guideline 201 or Equivalent

Persistence and degradability

Fumed silica
Biodegradability: Biodegradation is not applicable.

Alkoxysilane
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

Di-t-butyl-p-cresol
Biodegradability: Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.
10-day Window: Fail
Biodegradation: 4.5 %
Exposure time: 28 d
Method: OECD Test Guideline 301C or Equivalent

Theoretical Oxygen Demand: 2.98 mg/mg

Chemical Oxygen Demand: 2.25 - 2.27 mg/mg

Ketone

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

Biodegradation: 90 - 100 %
Exposure time: 28 d
Method: OECD Test Guideline 301B

Silane

Biodegradability: Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.
10-day Window: Fail
Biodegradation: 37 %
Exposure time: 28 d
Method: Regulation (EC) No. 440/2008, Annex, C.4-A

Stability in Water (1/2-life)
Hydrolysis, DT50, 6.5 Hour, pH 7, Half-life Temperature 24.5 °C, OECD Test Guideline 111
Hydrolysis, DT50, 0.15 Hour, pH 5, Half-life Temperature 24.5 °C, OECD Test Guideline 111
Hydrolysis, DT50, 0.002 Hour, pH 9, Half-life Temperature 24.5 °C, OECD Test Guideline 111

Dimethyl Cyclosiloxanes

Biodegradability: Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.
10-day Window: Not applicable
Biodegradation: 56.5 %
Exposure time: 28 d
Method: OECD Test Guideline 310

metal catalyst

Biodegradability: For similar material(s): Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.
10-day Window: Pass
Biodegradation: 66 %
Exposure time: 28 d
Method: OECD Test Guideline 301D

Aryl phosphine oxide

Biodegradability: According to the results of tests of biodegradability this product is not readily biodegradable.
Biodegradation: 1 %
Exposure time: 28 d
Method: OECD Test Guideline 301B 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.

1,2-Bis (trimethoxysilyl) ethane
Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

Biodegradation: 64 %
Exposure time: 28 d
Method: OECD Test Guideline 301B or Equivalent

Bioaccumulative potential

Fumed silica
Bioaccumulation: No relevant data found.

Alkoxysilane
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)

Di-t-butyl-p-cresol
Bioaccumulation: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).
Partition coefficient: n-octanol/water(log Pow): 4.17 - 5.10 Estimated.
Bioconcentration factor (BCF): 598.4 Fish Estimated.

Ketone
Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): 1.62
Bioconcentration factor (BCF): 0.63 Fish

Silane
Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): 0.5 Estimated by Structure-Activity Relationship (SAR).

Dimethyl Cyclosiloxanes

Bioaccumulation: Bioconcentration potential is low (BCF less than 100 or log Pow greater than 7).
Partition coefficient: n-octanol/water(log Pow): 8.87

metal catalyst
Bioaccumulation: For similar material(s): Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): 0.05
Bioconcentration factor (BCF): 3 Fish Estimated.

Aryl phosphine oxide
Partition coefficient: n-octanol/water(log Pow): 5.8
Bioconcentration factor (BCF): < 5 Cyprinus carpio (Carp) 28 d

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

1,2-Bis (trimethoxysilyl) ethane
Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): -1.68 at 25 °C

Mobility in soil

Fumed silica
No relevant data found.

Alkoxysilane
No relevant data found.

Tetraethoxysilane
No relevant data found.

Di-t-butyl-p-cresol
Partition coefficient (Koc): > 5000 Estimated.

Ketone
Partition coefficient (Koc): 10.67

Silane
No relevant data found.

metal catalyst
For similar material(s):
Partition coefficient (Koc): 1.53 Estimated.

Aryl phosphine oxide
No relevant data found.

Methanol
Partition coefficient (Koc): 0.44 Estimated.

1,2-Bis (trimethoxysilyl) ethane

No relevant data found.

13. DISPOSAL CONSIDERATIONS

Disposal methods: NOTICE: Research sample for use by qualified personnel only. Upon completion of tests, dispose of material and container safely and in accord with federal, state/provincial and local laws and regulations. If further information is needed on disposal or use, consult your supplier.

14. TRANSPORT INFORMATION

DOT

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

Classification for SEA transport (IMO-IMDG):

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

Classification for AIR transport (IATA/ICAO):

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

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

15. REGULATORY INFORMATION

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312
Flammable (gases, aerosols, liquids, or solids)
Respiratory or skin sensitisation
Reproductive toxicity
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	CASRN
dimethylsiloxane, dimethy vinyl terminated	68083-19-2
Tetrakis(dimethylsiloxane, dimethylvinylsiloxy- and trimethoxysilylethyltetramethyldisiloxyethyl-term) Silane	2244924-68-1
Hydrophobic amorphous fumed silica	68909-20-6
Mercaptosiloxane	102783-03-9
Methyltrimethoxysilane	1185-55-3
Tetraethoxysilane	78-10-4
Di-t-butyl-p-cresol	128-37-0

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)
This product contains chemical substance(s) not on the TSCA Inventory. It may be used for research and development purposes only, and only under the supervision of a technically qualified individual. All persons engaged in research and development with this product must be informed of the hazard information in this Material Safety Data Sheet (MSDS).

16. OTHER INFORMATION

Other information
For research use only.

Hazard Rating System
NFPA

Health	Flammability	Instability
1	2	0

HMIS

Health	Flammability	Physical Hazard

2*	3	0

* = Chronic Effects (See Hazards Identification)

Revision

Identification Number: 99198389 / A001 / Issue Date: 03/22/2022 / Version: 0.0
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; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Information Source and References

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

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.
US