Material Safety Data Sheet

DOW CHEMICAL INTERNATIONAL PVT. LTD.

Product name: XIAMETER™ OFX-0531 Fluid

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DOW CHEMICAL INTERNATIONAL PVT. LTD. 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. PRODUCT AND COMPANY IDENTIFICATION

Product name: XIAMETER™ OFX-0531 Fluid

Recommended use of the chemical and restrictions on use
Identified uses: Additives

COMPANY IDENTIFICATION
DOW CHEMICAL INTERNATIONAL PVT. LTD.
UNIT NO. 801, 8th FLOOR, BUILDING NO. 9,
GIGAPLEX,
TTC INDUSTRIAL AREA, MIDC, AIROLI
NAVI, MUMBAI
400708 NAVI, MUMBAI
INDIA

Customer Information Number: (91) 22-6674-1500
SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER
24-Hour Emergency Contact: 91-22-6674-1800
Local Emergency Contact: 0091-22-6674-1800

2. HAZARDS IDENTIFICATION

GHS Classification
Flammable liquids - Category 2
Skin corrosion/irritation - Category 2
Serious eye damage/eye irritation - Category 2A
Specific target organ toxicity - repeated exposure - Category 1 - Inhalation
Short-term (acute) aquatic hazard - Category 2
Long-term (chronic) aquatic hazard - Category 3

GHS label elements
Hazard pictograms

Signal word: **DANGER!**

Hazard statements
Highly flammable liquid and vapour.
Causes skin irritation.
Causes serious eye irritation.
Causes damage to organs (Central nervous system) through prolonged or repeated exposure if inhaled.
Toxic to aquatic life.
Harmful to aquatic life with long lasting effects.

Precautionary statements

Prevention
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Keep container tightly closed.
Ground and bond container and receiving equipment.
Use explosion-proof electrical/ ventilating/ lighting equipment.
Use non-sparking tools.
Take action to prevent static discharges.
Do not breathe mist or vapours.
Wash skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Avoid release to the environment.
Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

Response
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Get medical help if you feel unwell.
If skin irritation occurs: Get medical help.
If eye irritation persists: Get medical help.
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.

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
Dimethyl siloxane, 3-(2-aminoethyl)aminopropyldimethoxysiloxy-terminated	71750-80-6	>= 46.0 - <= 51.0 %
Mineral Spirits	8052-41-3	>= 34.0 - <= 36.0 %
Isopropanol	67-63-0	>= 14.0 - <= 16.0 %
Trimethylbenzene (mixed isomers)	25551-13-7	>= 1.0 - <= 2.5 %
Ethyltoluene	25550-14-5	>= 1.0 - <= 2.5 %
Methanol	67-56-1	>= 1.2 - <= 1.6 %
Nonane	111-84-2	>= 0.17 - <= 0.54 %
Oligomers of (ethylenediaminepropyl)trimethoxysilane	Not available	<= 0.2 %
Octamethyl Cyclotetrasiloxane	556-67-2	>= 0.024 - <= 0.035 %

4. FIRST AID MEASURES

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

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

Skin contact: 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: Do not induce vomiting. Call a physician and/or transport to emergency facility immediately.

Most important symptoms and effects, both acute and delayed:
Causes skin irritation. Causes serious eye irritation. Causes damage to organs through prolonged or repeated exposure if inhaled.

Indication of any immediate medical attention and special treatment needed
Notes to physician: In cases where several ounces (60 - 100 ml) have been ingested, consider the use of ethanol and hemodialysis in the treatment. Consult standard literature for details of treatment. If ethanol is used, a therapeutically effective blood concentration in the range of 100 - 150 mg/dl may be achieved by a rapid loading dose followed by a continuous intravenous infusion. Consult standard literature for details of treatment. 4-Methyl pyrazole (Antizol®) is an effective blocker of alcohol dehydrogenase and should be used in the treatment of ethylene glycol (EG), di- or triethylene glycol (DEG, TEG), ethylene glycol butyl ether (EGBE), or methanol intoxication if available. Fomepizole protocol (Brent, J. et al., New England Journal of Medicine, Feb. 8, 2001, 344:6, p. 424-9): loading dose 15 mg/kg intravenously, follow by bolus dose of 10 mg/kg every 12 hours; after 48 hours, increase bolus dose to 15 mg/kg every 12 hours. Continue fomepizole until serum methanol, EG, DEG, TEG or EGBE are undetectable. The signs and symptoms of poisoning include anion gap metabolic acidosis, CNS depression, renal tubular injury, and possible late stage cranial nerve involvement. Maintain adequate ventilation and oxygenation of the patient. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. Hemodialysis may be of benefit if substantial amounts have been ingested and the patient is showing signs of intoxication. Consider hemodialysis for patients with persistent hypotension or coma unresponsive to standard therapy (isopropanol levels >400 - 500 mg/dl). (Goldfrank, Toxicological Emergencies 7th ed., 2002; King, JAMA, 1970, 211:1855). If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Skin contact may aggravate preexisting dermatitis.

5. FIREFIGHTING MEASURES

Extinguishing media

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

Unsuitable extinguishing media: High volume water jet. Do not use direct water stream..

Special hazards arising from the substance or mixture

Hazardous combustion products: Carbon oxides.

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. 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
Mineral Spirits	ACGIH	TWA	100 ppm
	IN OEL	TWA	900 mg/m3 300 ppm
	IN OEL	STEL	1,500 mg/m3 500 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		
Trimethylbenzene (mixed isomers)	ACGIH	TWA	10 ppm
	Dow IHG	TWA	10 ppm
	Dow IHG	STEL	25 ppm
Ethyltoluene	Dow IHG	TWA	10 ppm
Methanol	ACGIH	TWA	200 ppm
	Further information: Skin: Danger of cutaneous absorption		
	ACGIH	STEL	250 ppm
	Further information: Skin: Danger of cutaneous absorption		
	IN OEL	STEL	310 mg/m3 250 ppm
	Further information: Skin: Potential contribution to the overall exposure by the cutaneous route including mucous membranes and eye.		
	IN OEL	TWA	260 mg/m3 200 ppm
	Further information: Skin: Potential contribution to the overall exposure by the cutaneous route including mucous membranes and eye.		
Nonane	ACGIH	TWA	200 ppm
Octamethyl Cyclotetrasiloxane	US WEEL	TWA	10 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
Isopropanol	67-63-0	Acetone	Urine	End of shift at end of workweek	40 mg/l	ACGIH BEI
Methanol	67-56-1	Methanol	Urine	End of shift (As soon as possible after exposure ceases)	15 mg/l	ACGIH BEI

Exposure controls

Engineering controls: Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. 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. Examples of preferred glove barrier materials include: Chlorinated polyethylene. Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl alcohol ("PVA"). Polyvinyl chloride ("PVC" or "vinyl"). Viton. Examples of acceptable glove barrier materials include: Butyl rubber. 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: Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required, use an approved self-contained breathing apparatus or positive pressure air line with auxiliary self-contained air supply. For emergency and other conditions where the exposure guideline may be exceeded, use an approved positive-pressure self-contained breathing apparatus or positive-pressure air line with auxiliary self-contained air supply. In confined or poorly ventilated areas, use an approved self-contained breathing apparatus or positive pressure air line with auxiliary self-contained air supply.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	
Physical state	liquid
Color	Straw-coloured
Odor	solvent-like
Odor Threshold	No data available
pH	Not applicable, substance/mixture is non-polar/aprotic
Melting point/range	No data available
Freezing point	No data available
Boiling point (760 mmHg)	> 55 °C
Flash point	**Seta closed cup** 13 °C
Evaporation Rate (Butyl Acetate = 1)	No data available
Flammability (solid, gas)	Not applicable
Lower explosion limit	2 % vol
Upper explosion limit	12 % vol
Vapor Pressure	No data available
Relative Vapor Density (air = 1)	No data available
Relative Density (water = 1)	0.865
Water solubility	No data available
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	> 230 °C
Decomposition temperature	No data available
Kinematic Viscosity	160 mm2/s at 25 °C
Explosive properties	Not explosive
Oxidizing properties	The substance or mixture is not classified as oxidizing.
Molecular weight	No data available
Particle size	Not applicable

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

10. STABILITY AND REACTIVITY

Reactivity: Not classified as a reactivity hazard.

Chemical stability: Stable under normal conditions.

Possibility of hazardous reactions: Can react with strong oxidizing agents. Vapours may form explosive mixture with air. Highly flammable liquid and vapour.

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

Incompatible materials: Avoid contact with oxidizing materials.

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

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. May cause central nervous system depression. Signs and symptoms of excessive exposure may include: Facial flushing. Low blood pressure. Irregular heartbeats. May cause nausea and vomiting.
As product: Single dose oral LD50 has not been determined.

Information for components:

Dimethyl siloxane, 3-(2-aminoethyl)aminopropyldimethoxysiloxy-terminated
Single dose oral LD50 has not been determined.

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.

Mineral Spirits
LD50, Rat, male and female, > 5,000 mg/kg OECD 401 or equivalent

Isopropanol
May cause central nervous system depression. Signs and symptoms of excessive exposure may include: Facial flushing. Low blood pressure. Irregular heartbeats. May cause nausea and vomiting.

LD50, Rat, 5,840 mg/kg OECD 401 or equivalent

Trimethylbenzene (mixed isomers)
LD50, Rat, 8,970 mg/kg

LD50, Rat, > 47,105,000 mg/kg

Ethyltoluene
LD50, Rat, > 5,000 mg/kg

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

Lethal Dose, Humans, 340 mg/kg Estimated.

Lethal Dose, Humans, 29 - 237 ml Estimated.

Nonane
For similar material(s): LD50, Rat, male and female, > 5,000 mg/kg No deaths occurred at this concentration.

Oligomers of (ethylenediaminepropyl)trimethoxysilane
For similar material(s): LD50, Rat, male and female, 2,295 mg/kg OPPTS 870.1100

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.

Octamethyl Cyclotetrasiloxane
LD50, Rat, male, > 4,800 mg/kg No deaths occurred at this concentration.

Acute dermal toxicity

Information for the Product:

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

Information for components:

Dimethyl siloxane, 3-(2-aminoethyl)aminopropyldimethoxysiloxy-terminated
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.

Mineral Spirits
LD50, Rabbit, male and female, > 3,000 mg/kg OECD 402 or equivalent No deaths occurred at this concentration.

Isopropanol
LD50, Rabbit, > 12,800 mg/kg

Trimethylbenzene (mixed isomers)
The dermal LD50 has not been determined.

Ethyltoluene
The dermal LD50 has not been determined.

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

Nonane
For similar material(s): LD50, Rabbit, male and female, > 2,000 mg/kg No deaths occurred at this concentration.

Oligomers of (ethylenediaminepropyl)trimethoxysilane
LD50, Rabbit, > 2,000 mg/kg No deaths occurred at this concentration.

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.

Octamethyl Cyclotetrasiloxane
LD50, Rat, male and female, > 2,400 mg/kg No deaths occurred at this concentration.

Acute inhalation toxicity

Information for the Product:

Prolonged excessive exposure may cause adverse effects. Excessive exposure may cause irritation to upper respiratory tract (nose and throat). May cause central nervous system effects. Symptoms may include headache, dizziness and drowsiness, progressing to incoordination and unconsciousness. Observations in animals include middle ear lining damage upon exposure to vapors of isopropanol. However, the relevance of this to humans is unknown Excessive exposure (400 ppm) to isopropanol may cause eye, nose and throat irritation. Incoordination, confusion, hypotension, hypothermia, circulatory collapse, respiratory arrest and death may follow a longer duration or higher levels.

As product: The LC50 has not been determined.

Information for components:

Dimethyl siloxane, 3-(2-aminoethyl)aminopropyldimethoxysiloxy-terminated
No adverse effects are anticipated from single exposure to mist.

The LC50 has not been determined.

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.

Mineral Spirits
LC50, Rat, male and female, 4 Hour, vapour, > 5.5 mg/l No deaths occurred at this concentration.

Isopropanol
LC50, Rat, male and female, 6 Hour, vapour, > 10000 ppm

Trimethylbenzene (mixed isomers)
Vapor concentrations are attainable which could be hazardous on single exposure. May cause respiratory irritation and central nervous system depression.

The LC50 has not been determined.

For similar material(s): LC50, Rat, male and female, 4 Hour, vapour, > 10.2 mg/l No deaths occurred at this concentration.

Ethyltoluene
Prolonged excessive exposure may cause serious adverse effects, even death. May cause respiratory irritation and central nervous system depression. Symptoms may include headache, dizziness and drowsiness, progressing to incoordination and unconsciousness.

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

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

Oligomers of (ethylenediaminepropyl)trimethoxysilane
LC50, Rat, 4 Hour, dust/mist, 1.49 - 2.44 mg/l 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.

Octamethyl Cyclotetrasiloxane
LC50, Rat, male and female, 4 Hour, dust/mist, 36 mg/l OECD Test Guideline 403

Skin corrosion/irritation

Causes skin irritation.

Information for the Product:

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

Information for components:

Dimethyl siloxane, 3-(2-aminoethyl)aminopropyldimethoxysiloxy-terminated
For similar material(s):
Brief contact may cause skin irritation with local redness.

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

Isopropanol
Prolonged exposure not likely to cause significant skin irritation.
May cause drying and flaking of the skin.

Trimethylbenzene (mixed isomers)
Prolonged contact may cause moderate skin irritation with local redness.
May cause drying and flaking of the skin.

Ethyltoluene
Prolonged contact may cause skin irritation with local redness.
Repeated contact may cause skin burns. Symptoms may include pain, severe local redness, swelling, and tissue damage.
May cause drying and flaking of the skin.

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

Nonane
Brief contact may cause moderate skin irritation with local redness.

Oligomers of (ethylenediaminepropyl)trimethoxysilane
Brief contact may cause moderate skin irritation with local redness.

Octamethyl Cyclotetrasiloxane
Brief contact is essentially nonirritating to skin.

Serious eye damage/eye irritation

Causes serious eye irritation.

Information for the Product:

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

Information for components:

Dimethyl siloxane, 3-(2-aminoethyl)aminopropyldimethoxysiloxy-terminated
For similar material(s):
May cause eye irritation.

Mineral Spirits
Essentially nonirritating to eyes.

Isopropanol
May cause pain disproportionate to the level of irritation to eye tissues.
May cause moderate eye irritation.
May cause moderate corneal injury.
Vapor may cause eye irritation experienced as mild discomfort and redness.
Vapor may cause lacrimation (tears).

Trimethylbenzene (mixed isomers)
May cause slight eye irritation.

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

Methanol
May cause eye irritation.

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

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

Octamethyl Cyclotetrasiloxane
Essentially nonirritating to eyes.

Sensitization

For skin sensitization:
Not classified based on available information.

For respiratory sensitization:
Not classified based on available information.

Information for the Product:

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

For respiratory sensitization:
No specific, relevant data available for assessment.

Information for components:

Dimethyl siloxane, 3-(2-aminoethyl)aminopropyldimethoxysiloxy-terminated
For skin sensitization:
No relevant data found.

For respiratory sensitization:
No relevant data found.

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

For respiratory sensitization:
No relevant data found.

Isopropanol
Did not demonstrate the potential for contact allergy in mice.
Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

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

For respiratory sensitization:
No relevant data found.

Ethyltoluene
For skin sensitization:
No relevant data found.

For respiratory sensitization:
No relevant data found.

Methanol
For skin sensitization:
No relevant data found.

For respiratory sensitization:
No relevant data found.

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

For respiratory sensitization:
No relevant data found.

Oligomers of (ethylenediaminepropyl)trimethoxysilane
Has caused allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

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

For respiratory sensitization:

No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)

Not classified based on available information.

Information for the Product:

Product test data not available.

Information for components:

Dimethyl siloxane, 3-(2-aminoethyl)aminopropyldimethoxysiloxy-terminated
Available data are inadequate to determine single exposure specific target organ toxicity.

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

Isopropanol
May cause drowsiness or dizziness.
Route of Exposure: Ingestion
Target Organs: Central nervous system

Trimethylbenzene (mixed isomers)
Available data are inadequate to determine single exposure specific target organ toxicity.

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

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

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

Oligomers of (ethylenediaminepropyl)trimethoxysilane
Available data are inadequate to determine single exposure specific target organ toxicity.

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

Aspiration Hazard

Not classified based on available information.

Information for the Product:

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

Information for components:

Dimethyl siloxane, 3-(2-aminoethyl)aminopropyldimethoxysiloxy-terminated
Based on available information, aspiration hazard could not be determined.

Mineral Spirits
May be fatal if swallowed and enters airways.

Isopropanol
Aspiration into the lungs may occur during ingestion or vomiting, resulting in rapid absorption and injury to other body systems.

Trimethylbenzene (mixed isomers)
May be fatal if swallowed and enters airways.

Ethyltoluene
May be harmful if swallowed and enters airways.

Methanol
May be harmful if swallowed and enters airways.

Nonane
Aspiration into the lungs may occur during ingestion or vomiting, causing lung damage or even death due to chemical pneumonia.

Oligomers of (ethylenediaminepropyl)trimethoxysilane
Based on available information, aspiration hazard could not be determined.

Octamethyl Cyclotetrasiloxane
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)

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

Information for the Product:

Product test data not available.

Information for components:

Dimethyl siloxane, 3-(2-aminoethyl)aminopropyldimethoxysiloxy-terminated
No relevant data found.

Mineral Spirits
In humans, effects have been reported on the following organs:
Bone Marrow
Liver
In animals, effects have been reported on the following organs:
central nervous system damage
Kidney.

Kidney effects and/or tumors have been observed in male rats. These effects are believed to be species specific and unlikely to occur in humans.

Isopropanol
In animals, effects have been reported on the following organs:
Kidney.
Liver.
Kidney effects have been observed in male rats. These effects are believed to be species specific and unlikely to occur in humans.
Observations in animals include:
Lethargy.

Trimethylbenzene (mixed isomers)
May cause respiratory irritation and central nervous system depression.
Symptoms of excessive exposure may be anesthetic or narcotic effects; dizziness and drowsiness may be observed.

Ethyltoluene
No relevant data found.

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.

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

Oligomers of (ethylenediaminepropyl)trimethoxysilane
In animals, effects have been reported on the following organs:
Respiratory tract.

Octamethyl Cyclotetrasiloxane
In animals, effects have been reported on the following organs:
Kidney.
Liver.
Respiratory tract.
Female reproductive organs.

Carcinogenicity

Not classified based on available information.

Information for the Product:

Product test data not available.

Information for components:

Dimethyl siloxane, 3-(2-aminoethyl)aminopropyldimethoxysiloxy-terminated
No relevant data found.

Mineral Spirits

No relevant data found.

Isopropanol
Did not cause cancer in laboratory animals.

Trimethylbenzene (mixed isomers)
No relevant data found.

Ethyltoluene
No relevant data found.

Methanol
Did not cause cancer in laboratory animals.

Nonane
No relevant data found.

Oligomers of (ethylenediaminepropyl)trimethoxysilane
No relevant data found.

Octamethyl Cyclotetrasiloxane
Results from a 2 year repeated vapour inhalation exposure study to rats of octamethylcyclotetrasiloxane (D4) indicate effects (benign uterine adenomas) in the uterus of female animals. This finding occurred at the highest exposure dose (700 ppm) only. Studies to date have not demonstrated if these effects occur through pathways that are relevant to humans. Repeated exposure in rats to D4 resulted in protoporphyrin accumulation in the liver. Without knowledge of the specific mechanism leading to the protoporphyrin accumulation the relevance of this finding to humans is unknown.

Teratogenicity

Not classified based on available information.

Information for the Product:

Product test data not available.

Information for components:

Dimethyl siloxane, 3-(2-aminoethyl)aminopropyldimethoxysiloxy-terminated
No relevant data found.

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

Isopropanol
Isopropanol has been toxic to the fetus in laboratory animals at doses toxic to the mother.

Trimethylbenzene (mixed isomers)
Has been toxic to the fetus in lab animals at doses nontoxic to the mother.

Ethyltoluene
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.

Nonane
For similar material(s): Did not cause birth defects or any other fetal effects in laboratory animals.

Oligomers of (ethylenediaminepropyl)trimethoxysilane
Did not cause birth defects in laboratory animals.

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

Reproductive toxicity

Not classified based on available information.

Information for the Product:

Product test data not available.

Information for components:

Dimethyl siloxane, 3-(2-aminoethyl)aminopropyldimethoxysiloxy-terminated
No relevant data found.

Mineral Spirits
In animal studies, did not interfere with reproduction.

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

Trimethylbenzene (mixed isomers)
In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals. In animal studies, did not interfere with fertility.

Ethyltoluene
No relevant data found.

Methanol
In animal studies, did not interfere with reproduction.

Nonane
For similar material(s): In animal studies, did not interfere with reproduction.

Oligomers of (ethylenediaminepropyl)trimethoxysilane
In animal studies, did not interfere with reproduction.

Octamethyl Cyclotetrasiloxane

In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals. In animal studies, has been shown to interfere with fertility.

Mutagenicity

Not classified based on available information.

Information for the Product:

Product test data not available.

Information for components:

Dimethyl siloxane, 3-(2-aminoethyl)aminopropyldimethoxysiloxy-terminated
No relevant data found.

Mineral Spirits
In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

Isopropanol
In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

Trimethylbenzene (mixed isomers)
In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

Ethyltoluene
Based on information for a similar material: In vitro genetic toxicity studies were negative.

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

Nonane
In vitro genetic toxicity studies were negative.

Oligomers of (ethylenediaminepropyl)trimethoxysilane
In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

Octamethyl Cyclotetrasiloxane
In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

12. ECOLOGICAL INFORMATION

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

Ecotoxicity

Dimethyl siloxane, 3-(2-aminoethyl)aminopropyldimethoxysiloxy-terminated
Acute toxicity to fish
No relevant data found.

Mineral Spirits

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).
For similar material(s):
LC50, Oncorhynchus mykiss (rainbow trout), 96 Hour, 2.5 mg/l

Acute toxicity to aquatic invertebrates
LC50, crustacean Chaetogammarus marinus, 96 Hour, 3.5 mg/l

Acute toxicity to algae/aquatic plants
ErC50, Pseudokirchneriella subcapitata (green algae), 96 Hour, Growth rate, 1.2 mg/l, OECD Test Guideline 201
NOEC, Pseudokirchneriella subcapitata (green algae), 96 Hour, Growth rate, 0.16 mg/l, OECD Test Guideline 201

Chronic toxicity to fish
For similar material(s):
NOEC, Oncorhynchus mykiss (rainbow trout), 112 d, <1.4 mg/l

Chronic toxicity to aquatic invertebrates
NOEC, Daphnia magna (Water flea), 21 d, number of offspring, 0.28 mg/l

Isopropanol

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, Pimephales promelas (fathead minnow), flow-through test, 96 Hour, 9,640 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates
LC50, Daphnia magna (Water flea), static test, 24 Hour, > 10,000 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants
NOEC, alga Scenedesmus sp., static test, 7 d, Growth inhibition (cell density reduction), 1,800 mg/l
ErC50, alga Scenedesmus sp., static test, 72 Hour, Growth rate inhibition, > 1,000 mg/l

Toxicity to bacteria
EC50, activated sludge, > 1,000 mg/l

Chronic toxicity to aquatic invertebrates
NOEC, Daphnia magna (Water flea), semi-static test, 21 d, 30 mg/l

Trimethylbenzene (mixed isomers)

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).

Acute toxicity to aquatic invertebrates
LC50, grass shrimp (Palaemonetes pugio), static test, 24 Hour, 7 mg/l
LC50, grass shrimp (Palaemonetes pugio), static test, 96 Hour, 5.4 mg/l

Ethyltoluene

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, emerald shiner (Notropis atherinoides), 72 Hour, 21.3 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

Nonane

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).

Acute toxicity to aquatic invertebrates
EC50, Daphnia magna (Water flea), Static, 48 Hour, 0.2 mg/l

Chronic toxicity to aquatic invertebrates
For similar material(s):
NOELR, Daphnia magna (Water flea), Static, 21 d, 1 mg/l
For similar material(s):
EC50, Daphnia magna (Water flea), Static, 21 d, 1.6 mg/l

Oligomers of (ethylenediaminepropyl)trimethoxysilane

Acute toxicity to fish
Material is toxic to aquatic organisms (LC50/EC50/IC50 between 1 and 10 mg/L in the most sensitive species).
Based on data from similar materials
LC50, Danio rerio (zebra fish), 96 Hour, 597 mg/l, Directive 67/548/EEC, Annex V, C.1.

Acute toxicity to aquatic invertebrates
Based on data from similar materials
EC50, Daphnia sp. (water flea), 48 Hour, 81 mg/l

Acute toxicity to algae/aquatic plants
Based on data from similar materials
ErC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, Growth rate inhibition, 8.8 mg/l

Based on data from similar materials
NOEC, Pseudokirchneriella subcapitata (green algae), 72 Hour, Growth rate inhibition, 3.1 mg/l

Toxicity to bacteria
Based on data from similar materials
EC50, Pseudomonas putida, 16 Hour, Growth rate, 67 mg/l

Chronic toxicity to aquatic invertebrates
Based on data from similar materials
NOEC, Daphnia magna (Water flea), semi-static test, 21 d, number of offspring, > 1 mg/l

Toxicity to Above Ground Organisms
Material is moderately toxic to birds on an acute basis (LD50 between 51 and 500 mg/kg).

Toxicity to soil-dwelling organisms
NOEC, Eisenia fetida (earthworms), 14 d, >= 1,000 mg/kg

Octamethyl Cyclotetrasiloxane

Acute toxicity to fish
Not expected to be acutely toxic to aquatic organisms.
No toxicity at the limit of solubility
LC50, Oncorhynchus mykiss (rainbow trout), flow-through, 96 Hour, > 0.022 mg/l
No toxicity at the limit of solubility
LC50, Cyprinodon variegatus (sheepshead minnow), flow-through, 14 d, > 0.0063 mg/l

Acute toxicity to aquatic invertebrates
No toxicity at the limit of solubility
EC50, Mysidopsis bahia (opossum shrimp), flow-through test, 96 Hour, > 0.0091 mg/l
No toxicity at the limit of solubility
EC50, Daphnia magna (Water flea), flow-through test, 48 Hour, > 0.015 mg/l

Acute toxicity to algae/aquatic plants
No toxicity at the limit of solubility
ErC50, Pseudokirchneriella subcapitata (green algae), 96 Hour, Growth rate, > 0.022 mg/l
No toxicity at the limit of solubility
EC10, Pseudokirchneriella subcapitata (green algae), 96 Hour, Growth rate, >= 0.022 mg/l

Chronic toxicity to fish
No toxicity at the limit of solubility
NOEC, Oncorhynchus mykiss (rainbow trout), 93 d, growth, >= 0.0044 mg/l

Chronic toxicity to aquatic invertebrates
NOEC, Daphnia magna (Water flea), 21 d, survival, 0.0079 mg/l

Persistence and degradability

Dimethyl siloxane, 3-(2-aminoethyl)aminopropyldimethoxysiloxy-terminated
Biodegradability: No relevant data found.

Mineral Spirits
Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.
10-day Window: Pass

Biodegradation: > 63 %
Exposure time: 28 d
Method: OECD Test Guideline 301B

Theoretical Oxygen Demand: 3.49 mg/mg

Isopropanol

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.
10-day Window: Pass
Biodegradation: 95 %
Exposure time: 21 d
Method: OECD Test Guideline 301E or Equivalent
10-day Window: Not applicable
Biodegradation: 53 %
Exposure time: 5 d
Method: Other guidelines

Theoretical Oxygen Demand: 2.40 mg/mg Estimated.

Chemical Oxygen Demand: 2.09 mg/mg Estimated.

Biological oxygen demand (BOD)

Incubation Time	BOD
5 d	20 - 72 %
20 d	78 - 86 %

Photodegradation
Test Type: Half-life (indirect photolysis)
Sensitization: OH radicals
Atmospheric half-life: 1.472 d
Method: Estimated.

Trimethylbenzene (mixed isomers)

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.
For similar material(s): 10-day Window: Not applicable
Biodegradation: 50 %
Exposure time: 4.4 d
Method: Calculated.

Ethyltoluene

Biodegradability: Biodegradation under aerobic static laboratory conditions is high (BOD20 or BOD28/ThOD > 40%).

Theoretical Oxygen Demand: 3.20 mg/mg

Photodegradation
Atmospheric half-life: 17 Hour
Method: Estimated.

Methanol

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

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.

Nonane

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.
10-day Window: Not applicable
Biodegradation: 100 %
Exposure time: 25 d
Method: Other guidelines

Oligomers of (ethylenediaminepropyl)trimethoxysilane

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.
For similar material(s): 10-day Window: Fail
Biodegradation: 39 %
Exposure time: 28 d
Method: OECD Test Guideline 301A or Equivalent

Theoretical Oxygen Demand: 2.39 mg/mg Estimated.

Chemical Oxygen Demand: 1.76 mg/mg Estimated.

Biological oxygen demand (BOD)

Incubation Time	BOD
5 d	23 %
10 d	30 %
20 d	29 %

Stability in Water (1/2-life)
Hydrolysis, half-life, 0.025 Hour, pH 7

Photodegradation
Test Type: Half-life (indirect photolysis)
Sensitization: OH radicals
Atmospheric half-life: 0.088 d
Method: Estimated.

Octamethyl Cyclotetrasiloxane

Biodegradability: Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.
10-day Window: Not applicable
Biodegradation: 3.7 %
Exposure time: 28 d
Method: OECD Test Guideline 310

Stability in Water (1/2-life)
Hydrolysis, DT50, 3.9 d, pH 7, Half-life Temperature 25 °C, OECD Test Guideline 111
Hydrolysis, DT50, 16.7 d, pH 7, Half-life Temperature 12 °C, OECD Test Guideline 111
Hydrolysis, DT50, 0.075 d, pH 4, Half-life Temperature 25 °C, OECD Test Guideline 111

Photodegradation
Atmospheric half-life: 16 d
Method: Estimated.

Bioaccumulative potential

Dimethyl siloxane, 3-(2-aminoethyl)aminopropyldimethoxysiloxy-terminated

Bioaccumulation: No relevant data found.

Mineral Spirits

Bioaccumulation: Bioconcentration potential is high (BCF > 3000 or Log Pow between 5 and 7).
Partition coefficient: n-octanol/water(log Pow): 5.25 Measured
Bioconcentration factor (BCF): 140 Fish Estimated.

Isopropanol

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): 0.05 Measured

Trimethylbenzene (mixed isomers)

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

Ethyltoluene

Bioaccumulation: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).
Partition coefficient: n-octanol/water(log Pow): 3.63 Measured

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

Nonane

Bioaccumulation: Bioconcentration potential is high (BCF > 3000 or Log Pow between 5 and 7).
Partition coefficient: n-octanol/water(log Pow): 5.65 Estimated.
Bioconcentration factor (BCF): 105 Fish Estimated.

Oligomers of (ethylenediaminepropyl)trimethoxysilane
Bioaccumulation: For similar material(s): Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): < 3 estimated

Octamethyl Cyclotetrasiloxane
Bioaccumulation: Bioconcentration potential is high (BCF > 3000 or Log Pow between 5 and 7).
Partition coefficient: n-octanol/water(log Pow): 6.49 Measured
Bioconcentration factor (BCF): 12,400 Pimephales promelas (fathead minnow) Measured

Mobility in Soil

Dimethyl siloxane, 3-(2-aminoethyl)aminopropyldimethoxysiloxy-terminated
No relevant data found.

Mineral Spirits
Partition coefficient (Koc): 1451 Estimated.

Isopropanol
Partition coefficient (Koc): 1.1 Estimated.

Trimethylbenzene (mixed isomers)
Potential for mobility in soil is low (Koc between 500 and 2000).

Ethyltoluene
Partition coefficient (Koc): 840 Estimated.

Methanol
Partition coefficient (Koc): 0.44 Estimated.

Nonane
Partition coefficient (Koc): 796 Estimated.

Oligomers of (ethylenediaminepropyl)trimethoxysilane
For similar material(s):
Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.
Partition coefficient (Koc): > 5000 Estimated.

Octamethyl Cyclotetrasiloxane
Partition coefficient (Koc): 16596 OECD Test Guideline 106

Results of PBT and vPvB assessment

Dimethyl siloxane, 3-(2-aminoethyl)aminopropyldimethoxysiloxy-terminated
This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Mineral Spirits

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Isopropanol

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Trimethylbenzene (mixed isomers)

This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Ethyltoluene

This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Methanol

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Nonane

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Oligomers of (ethylenediaminepropyl)trimethoxysilane

This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Octamethyl Cyclotetrasiloxane

Octamethylcyclotetrasiloxane (D4) meets the current criteria for PBT and vPvB under REACh Annex XIII or other regionally specific criteria. However, D4 does not behave similarly to known PBT/vPvB substances. The weight of scientific evidence from field studies shows that D4 is not biomagnifying in aquatic and terrestrial food webs. D4 in air will degrade by reaction with naturally occurring hydroxyl radicals in the atmosphere. Any D4 in air that does not degrade by reaction with hydroxyl radicals is not expected to deposit from the air to water, to land, or to living organisms.

Other adverse effects

Dimethyl siloxane, 3-(2-aminoethyl)aminopropyldimethoxysiloxy-terminated

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Mineral Spirits

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Isopropanol

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Trimethylbenzene (mixed isomers)

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Ethyltoluene

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Methanol

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Nonane

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Oligomers of (ethylenediaminepropyl)trimethoxysilane

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Octamethyl Cyclotetrasiloxane

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

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 Section10 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

Classification for ROAD and Rail transport:

Proper shipping name	FLAMMABLE LIQUID, N.O.S.(Propan-2-ol, Mineral spirits)
UN number	UN 1993
Class	3
Packing group	II

Classification for SEA transport (IMO-IMDG):

Proper shipping name	FLAMMABLE LIQUID, N.O.S.(Propan-2-ol, Mineral spirits)
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.(Propan-2-ol, Mineral spirits)
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

This product has been classified in accordance with the criteria of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS), rev. 8.

16. OTHER INFORMATION

Revision

Identification Number: 4107488 / A146 / Issue Date: 11.11.2022 / Version: 12.0
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
IN OEL	India. Permissible levels of certain chemical substances in work environment.
STEL	Short term exposure limit
TWA	Time weighted average
US WEEL	USA. Workplace Environmental Exposure Levels (WEEL)

Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; 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; 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; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; 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; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; 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; WHMIS - Workplace Hazardous Materials Information System

DOW CHEMICAL INTERNATIONAL PVT. LTD. 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.
IN