Material Safety Data Sheet

DOW CHEMICAL INTERNATIONAL PVT. LTD.

Product name: XIAMETER™ OFS-6011 Silane

Issue Date: 09.05.2022
Print Date: 11.05.2023

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™ OFS-6011 Silane

Recommended use of the chemical and restrictions on use
Identified uses: Adhesive, binding agents

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
Acute toxicity - Category 4 - Oral
Acute toxicity - Category 5 - Dermal
Skin corrosion/irritation - Sub-category 1B
Serious eye damage/eye irritation - Category 1
Skin sensitisation - Sub-category 1B

GHS label elements
Hazard pictograms

Signal word: **DANGER!**

Hazard statements
Harmful if swallowed.
May be harmful in contact with skin.
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.

Precautionary statements

Prevention
Avoid breathing mist or vapours.
Wash skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

Response
IF SWALLOWED: Get medical help. Rinse mouth.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
IF ON SKIN: Wash with plenty of water. Get medical help.
IF ON SKIN: Take off immediately all contaminated clothing. Immediately rinse with water for several minutes.
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get emergency medical help immediately.
IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical help.
If skin irritation or rash occurs: Get medical help.
Take off contaminated clothing and wash it before reuse.

Storage
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 substance.
Substance name: 3-Aminopropyltriethoxysilane
CASRN: 919-30-2

Component	CASRN	Concentration
3-Aminopropyltriethoxysilane	919-30-2	>= 98.0 - <= 100.0 %
Diaminopropyl tetraethoxy disiloxane	17907-78-7	<= 0.2 %

4. FIRST AID MEASURES

Description of first aid measures
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: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing. Seek medical attention if symptoms occur or irritation persists. Wash clothing before reuse. Suitable emergency safety shower facility should be immediately available.

Eye contact: Wash immediately and continuously with flowing water for at least 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. Obtain prompt medical consultation, preferably from an ophthalmologist.

Ingestion: Do not induce vomiting. Give one cup (8 ounces or 240 ml) of water or milk if available and transport to a medical facility. Do not give anything by mouth unless the person is fully conscious.

Most important symptoms and effects, both acute and delayed:
Harmful if swallowed. May be harmful in contact with skin. May cause an allergic skin reaction. Causes serious eye damage. Causes severe burns.

Indication of any immediate medical attention and special treatment needed
Notes to physician: Maintain adequate ventilation and oxygenation of the patient. May cause asthma-like (reactive airways) symptoms. Bronchodilators, expectorants, antitussives and corticosteroids may be of help. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. Chemical eye burns may require extended irrigation. Obtain prompt consultation, preferably from an ophthalmologist. If burn is present, treat as any thermal burn, after decontamination. Due to irritant properties, swallowing may result in burns and/or ulceration of mouth, stomach and lower gastrointestinal tract with subsequent stricture. Aspiration of vomitus may cause lung injury. Suggest endotracheal or esophageal control if lavage is done. 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. Carbon dioxide (CO2). Dry chemical. Water spray.

Unsuitable extinguishing media: None known..

Special hazards arising from the substance or mixture

Hazardous combustion products: Carbon oxides. Nitrogen oxides (NOx). Silicon oxides.

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

Advice for firefighters

Fire Fighting Procedures: Use water spray to cool unopened containers.. Evacuate area.. Collect contaminated fire extinguishing water separately. This must not be discharged into drains.. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations..
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Remove undamaged containers from fire area if it is safe to do so.

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

6. ACCIDENTAL RELEASE MEASURES

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

Environmental precautions: Discharge into the environment must be avoided. Prevent further leakage or spillage if safe to do so. 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: Soak up with inert absorbent material. 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. Do not breathe vapours or spray mist. Do not swallow. Do not get in eyes. Keep container tightly closed. Take care to prevent spills, waste and minimize release to the environment. Handle in accordance with good industrial hygiene and safety practice. CONTAINERS MAY BE HAZARDOUS WHEN EMPTY. Since emptied containers retain product residue follow all (M)SDS and label warnings even after container is emptied.
Use with local exhaust ventilation. See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

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

Do not store with the following product types: Strong oxidizing agents. Organic peroxides. Explosives. 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
3-Aminopropyltriethoxysilane	Dow IHG	TWA	0.5 mg/m3
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		
	IN OEL	TWA	1,900 mg/m3 1,000 ppm

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

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.

Skin protection

Hand protection: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Butyl rubber. Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl chloride ("PVC" or "vinyl"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Other protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use an approved respirator. Selection of air-purifying or positive-pressure supplied-air will depend on the specific operation and the potential airborne concentration of the material. For emergency conditions, use an approved positive-pressure self-contained breathing apparatus. In confined or poorly ventilated areas, use an approved self-contained breathing apparatus or positive pressure air line with auxiliary self-contained air supply.

The following should be effective types of air-purifying respirators: Multi-gas cartridge.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	
Physical state	liquid
Color	colourless
Odor	Fishy
Odor Threshold	No data available
pH	No data available
Melting point/range	No data available
Freezing point	No data available
Boiling point (760 mmHg)	217 °C
Flash point	**closed cup** 96 °C
Evaporation Rate (Butyl Acetate = 1)	No data available
Flammability (solid, gas)	Not applicable
Flammability (liquids)	Not applicable
Lower explosion limit	No data available
Upper explosion limit	No data available
Vapor Pressure	No data available
Relative Vapor Density (air = 1)	No data available
Relative Density (water = 1)	0.95
Water solubility	No data available
Partition coefficient: n-octanol/water	log Pow: 1.7 *Calculated.*
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Kinematic Viscosity	1.65 cSt 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. When heated to temperatures above 150 °C (300 °F) in the presence of air, product can form formaldehyde vapours.

Safe handling conditions may be maintained by keeping vapour concentrations within the occupational exposure limit for formaldehyde. Vapours may form explosive mixture with air.

Conditions to avoid: None known.

Incompatible materials: Avoid contact with oxidizing materials.

Hazardous decomposition products:
Decomposition products can include and are not limited to: 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:
Harmful if swallowed., May be harmful in contact with skin.

Acute oral toxicity

Information for the Product:

Low toxicity if swallowed. Swallowing may result in irritation or burns of the mouth, throat, and gastrointestinal tract.

Based on product testing:
LD50, Rat, female, 1,479 mg/kg
Based on product testing:
LD50, Rat, male, 2,665 mg/kg

Information for components:

3-Aminopropyltriethoxysilane
LD50, Rat, female, 1,479 mg/kg

LD50, Rat, male, 2,665 mg/kg

Diaminopropyl tetraethoxy disiloxane
As product: Single dose oral LD50 has not been determined. LD50, Rat, 300 - 2,000 mg/kg Estimated by Structure-Activity Relationship (SAR).

Acute dermal toxicity

Information for the Product:

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

Based on product testing:
LD50, Rabbit, male and female, 4,041 mg/kg

Information for components:

3-Aminopropyltriethoxysilane
Based on product testing: LD50, Rabbit, male and female, 4,041 mg/kg

Diaminopropyl tetraethoxy disiloxane
As product: The dermal LD50 has not been determined.

Acute inhalation toxicity

Information for the Product:

Vapor concentrations are attainable which could be hazardous on single exposure. Excessive exposure may cause severe irritation to upper respiratory tract (nose and throat) and lungs. Symptoms of excessive exposure may be anesthetic or narcotic effects; dizziness and drowsiness may be observed.

Based on product testing:
LC50, Rat, male, 6 Hour, vapour, > 5 ppm No deaths occurred at this concentration.
Based on product testing:
LC50, Rat, female, 6 Hour, vapour, > 16 ppm No deaths occurred at this concentration.
Based on product testing:
LC50, Rat, male and female, 4 Hour, Aerosol, > 7.35 mg/l
Information for components:

3-Aminopropyltriethoxysilane
Based on product testing: LC50, Rat, male, 6 Hour, vapour, > 5 ppm No deaths occurred at this concentration.

Based on product testing: LC50, Rat, female, 6 Hour, vapour, > 16 ppm No deaths occurred at this concentration.

Based on product testing: LC50, Rat, male and female, 4 Hour, Aerosol, > 7.35 mg/l

Diaminopropyl tetraethoxy disiloxane
As product: The LC50 has not been determined.

Skin corrosion/irritation

Causes severe burns.

Information for the Product:

Based on product testing:
Brief contact may cause severe skin burns. Symptoms may include pain, severe local redness and tissue damage.

Information for components:

3-Aminopropyltriethoxysilane

Brief contact may cause severe skin burns. Symptoms may include pain, severe local redness and tissue damage.

Diaminopropyl tetraethoxy disiloxane
Brief contact may cause severe skin irritation with pain and local redness.

Serious eye damage/eye irritation

Causes serious eye damage.

Information for the Product:

Based on product testing:
May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Chemical burns may occur.
Vapor or mist may cause eye irritation.

Information for components:

3-Aminopropyltriethoxysilane
May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Chemical burns may occur.
Vapor or mist may cause eye irritation.

Diaminopropyl tetraethoxy disiloxane
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:
Has caused allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

Information for components:

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

For respiratory sensitization:
No relevant data found.

Diaminopropyl tetraethoxy disiloxane
For skin sensitization:

Potential skin sensitizer based on Structure-Activity Relationship (SAR).

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:

3-Aminopropyltriethoxysilane
Material is corrosive. Material is not classified as a respiratory irritant; however, upper respiratory tract irritation or corrosivity may be expected.

Diaminopropyl tetraethoxy disiloxane
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 available information, aspiration hazard could not be determined.

Information for components:

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

Diaminopropyl tetraethoxy disiloxane
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:

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

Information for components:

3-Aminopropyltriethoxysilane
In animals, effects have been reported on the following organs:
Liver.

Diaminopropyl tetraethoxy disiloxane
No relevant data found.

Carcinogenicity

Not classified based on available information.

Information for the Product:

Did not cause cancer in laboratory animals.

Information for components:

3-Aminopropyltriethoxysilane
Did not cause cancer in laboratory animals.

Diaminopropyl tetraethoxy disiloxane
No relevant data found.

Teratogenicity

Not classified based on available information.

Information for the Product:

Did not cause birth defects in laboratory animals.

Information for components:

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

Diaminopropyl tetraethoxy disiloxane
No relevant data found.

Reproductive toxicity

Not classified based on available information.

Information for the Product:

In animal studies, did not interfere with fertility.

Information for components:

3-Aminopropyltriethoxysilane
In animal studies, did not interfere with fertility.

Diaminopropyl tetraethoxy disiloxane
No relevant data found.

Mutagenicity

Not classified based on available information.

Information for the Product:

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

Information for components:

3-Aminopropyltriethoxysilane
In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

Diaminopropyl tetraethoxy disiloxane
No relevant data found.

12. ECOLOGICAL INFORMATION

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

Ecotoxicity

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, Danio rerio (zebra fish), semi-static test, 96 Hour, > 934 mg/l

Acute toxicity to aquatic invertebrates
EC50, Daphnia magna (Water flea), static test, 48 Hour, 331 mg/l

Acute toxicity to algae/aquatic plants
ErC50, Desmodesmus subspicatus (green algae), static test, 72 Hour, Growth rate inhibition, > 1,000 mg/l

NOEC, Desmodesmus subspicatus (green algae), static test, 72 Hour, Growth rate inhibition, 1.3 mg/l

Toxicity to bacteria
EC50, Pseudomonas putida, Respiration inhibition, 5.75 Hour, 43 mg/l

Persistence and degradability

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: Fail
Biodegradation: 67 %
Exposure time: 28 d
Method: OECD Test Guideline 301A or Equivalent

Stability in Water (1/2-life)
Hydrolysis, half-life, 8.5 Hour, pH 7, Half-life Temperature 24.7 °C

Bioaccumulative potential

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

Partition coefficient: n-octanol/water(log Pow): 1.7 at 20 °C Calculated.
Bioconcentration factor (BCF): 3.4 Cyprinus carpio (Carp) 56 d

Mobility in Soil
No relevant data found.

Results of PBT and vPvB assessment
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).

Other adverse effects
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	AMINES, LIQUID, CORROSIVE, N.O.S.(3-Aminopropyltriethoxysilane)
UN number	UN 2735
Class	8
Packing group	II

Classification for SEA transport (IMO-IMDG):

Proper shipping name	AMINES, LIQUID, CORROSIVE, N.O.S.(3-Aminopropyltriethoxysilane)
UN number	UN 2735
Class	8

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	Amines, liquid, corrosive, n.o.s.(3-Aminopropyltriethoxysilane)
UN number	UN 2735
Class	8
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: 6023801 / A146 / Issue Date: 09.05.2022 / Version: 6.0
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)
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

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