



SAFETY DATA SHEET

DOW CHEMICAL PHILIPPINES, INC.

Product name: DOWSIL™ TC-5550 Thermally Conductive Compound

Issue Date: 14.01.2025

Print Date: 15.01.2025

DOW CHEMICAL PHILIPPINES, INC. 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: DOWSIL™ TC-5550 Thermally Conductive Compound

Recommended use of the chemical and restrictions on use

Identified uses: Electronics

COMPANY IDENTIFICATION

DOW CHEMICAL PHILIPPINES, INC.
CAA ROAD, AGUILAR AVENUE
PAMPLONA
1740 LAS PINAS CITY
PHILIPPINES

Customer Information Number:

+63 2 871 0731 TO 37
SDSQuestion@dow.com
+63 2 874 0178

Fax:

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: (+63) 2-8-551 0483

Local Emergency Contact: (+63) 2-8-551 0483

2. HAZARDS IDENTIFICATION

GHS Classification

This product is not hazardous per the Globally Harmonized System of Classification and Labelling (GHS).

Other hazards

No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

Component	CASRN	Concentration
Siloxane and n-Decyl modified Aluminum	Not available	>= 76.0 - <= 87.0 %
Siloxane and n-Alkyl modified Zinc Oxide	Not available	>= 16.0 - <= 21.0 %
Lead	7439-92-1	<= 0.002 %

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: Wash off with plenty of water.

Eye contact: Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

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

Most important symptoms and effects, both acute and delayed:

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed

Notes to physician: Maintain adequate ventilation and oxygenation of the patient. 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: Silicon oxides. Metal oxides. Formaldehyde. Carbon 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.. 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: Wear self-contained breathing apparatus for firefighting if necessary.. Use personal protective equipment..

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: 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. Wipe up or scrape up and contain for salvage or disposal. Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable. For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container.
See sections: 7, 8, 11, 12 and 13.

7. HANDLING AND STORAGE

Precautions for safe handling: Take care to prevent spills, waste and minimize release to the environment. Handle in accordance with good industrial hygiene and safety practice. Use only with adequate ventilation. See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

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

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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

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

Component	Regulation	Type of listing	Value
Siloxane and n-Decyl modified Aluminum	ACGIH	TWA Respirable particulate matter	1 mg/m ³ , Aluminium
Further information: A4: Not classifiable as a human carcinogen			
Siloxane and n-Alkyl modified Zinc Oxide	ACGIH	TWA Respirable particulate matter	2 mg/m ³
	ACGIH	STEL Respirable particulate matter	10 mg/m ³
	PH OEL	TWA Fumes	5 mg/m ³
Lead	ACGIH	TWA	0.05 mg/m ³ , Lead
Further information: A3: Confirmed animal carcinogen with unknown relevance to humans			
	PH OEL	TWA Fume and dust	0.15 mg/m ³

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
Lead	7439-92-1	Lead (Lead)	In blood	Not critical	200 µg/l	ACGIH BEI

Exposure controls

Engineering controls: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

Individual protection measures

Eye/face protection: Use safety glasses (with side shields).

Skin protection

Hand protection: Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Examples of preferred glove barrier materials include: Polyvinyl chloride ("PVC" or "vinyl"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). 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: Wear clean, body-covering clothing.

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, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state	paste
Color	Gray
Odor	Odorless
Odor Threshold	No data available
pH	No data available
Melting point/ range	No data available
Freezing point	No data available
Boiling point (760 mmHg)	No data available
Flash point	closed cup > 100 °C
Evaporation Rate (Butyl Acetate = 1)	No data available
Flammability (solid, gas)	Not expected to form explosive dust-air mixtures. Not classified as a flammability hazard
Lower explosion limit	No data available
Upper explosion limit	No data available
Vapor Pressure	No data available
Relative Vapor Density (air = 1)	No data available
Relative Density (water = 1)	2.6
Water solubility	No data available
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Kinematic Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	The substance or mixture is not classified as oxidizing.
Molecular weight	No data available

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

10. STABILITY AND REACTIVITY

Reactivity: Not classified as a reactivity hazard.

Chemical stability: Stable under normal conditions.

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

Conditions to avoid: None known.

Incompatible materials: Avoid contact with oxidizing materials.

Hazardous decomposition products: No hazardous decomposition products are known..

11. TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data are 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:

Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. Swallowing may result in irritation of the mouth, throat, and gastrointestinal tract. May cause nausea and vomiting.

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

Based on information for component(s):

LD50, > 2,000 mg/kg Estimated.

Information for components:

Siloxane and n-Decyl modified Aluminum

Single dose oral LD50 has not been determined.

Siloxane and n-Alkyl modified Zinc Oxide

For similar material(s): LD50, Rat, > 5,000 mg/kg

Lead

For similar material(s): LD50, Rat, male and female, > 2,000 mg/kg OECD Test Guideline 423 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.

As product: The dermal LD50 has not been determined.

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

Information for components:

Siloxane and n-Decyl modified Aluminum

The dermal LD50 has not been determined.

Siloxane and n-Alkyl modified Zinc Oxide

For similar material(s): LD50, > 2,000 mg/kg Estimated.

Lead

For similar material(s): LD50, Rat, male and female, > 2,000 mg/kg OECD 402 or equivalent No deaths occurred at this concentration.

Acute inhalation toxicity

Information for the Product:

Brief exposure (minutes) is not likely to cause adverse effects. In humans, symptoms may include: May cause dizziness and drowsiness. Headache. Nausea and/or vomiting.
Respiratory effects

As product: The LC50 has not been determined.

Information for components:

Siloxane and n-Decyl modified Aluminum

For similar material(s): LC50, Rat, male, 4 Hour, dust/mist, > 0.888 mg/l OECD Test Guideline 403 No deaths occurred at this concentration.

Siloxane and n-Alkyl modified Zinc Oxide

For similar material(s): LC50, Rat, 4 Hour, dust/mist, > 5 mg/l No deaths occurred at this concentration.

Lead

For similar material(s): LC50, Rat, male and female, 4 Hour, dust/mist, > 5.05 mg/l OECD Test Guideline 403 No deaths occurred at this concentration.

Skin corrosion/irritation

Not classified based on available information.

Information for the Product:

Based on information for component(s):
Brief contact is essentially nonirritating to skin.
Prolonged contact may cause skin irritation with local redness.

Information for components:

Siloxane and n-Decyl modified Aluminum

For similar material(s):
Brief contact is essentially nonirritating to skin.
Prolonged contact may cause skin irritation with local redness.

Siloxane and n-Alkyl modified Zinc Oxide

For similar material(s):
Prolonged contact is essentially nonirritating to skin.

Lead

For similar material(s):
Brief contact is essentially nonirritating to skin.

Serious eye damage/eye irritation

Not classified based on available information.

Information for the Product:

Based on information for component(s):
May cause slight temporary eye irritation.

Information for components:

Siloxane and n-Decyl modified Aluminum

For similar material(s):
Fumes generated by welding, burning or melting may cause eye irritation.
Dust may irritate eyes.

Siloxane and n-Alkyl modified Zinc Oxide

For similar material(s):
May cause slight temporary eye irritation.
Corneal injury is unlikely.

Lead

For similar material(s):
May cause slight eye irritation.
Corneal injury is unlikely.

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 did not cause allergic skin sensitization in guinea pigs.

For respiratory sensitization:

No relevant data found.

Information for components:

Siloxane and n-Decyl modified Aluminum

For skin sensitization:

For similar material(s):

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

For respiratory sensitization:

No relevant data found.

Siloxane and n-Alkyl modified Zinc Oxide

For skin sensitization:

No relevant data found.

For respiratory sensitization:

No relevant data found.

Lead

For skin sensitization:

For similar material(s):

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

For respiratory sensitization:

No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)

Not classified based on available information.

Information for the Product:

Product test data not available.

Information for components:

Siloxane and n-Decyl modified Aluminum

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

Siloxane and n-Alkyl modified Zinc Oxide

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

Lead

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:

Siloxane and n-Decyl modified Aluminum

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

Siloxane and n-Alkyl modified Zinc Oxide

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

Lead

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

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

Specific Target Organ Systemic Toxicity (Repeated Exposure)

Not classified based on available information.

Information for the Product:

Product test data not available.

Information for components:

Siloxane and n-Decyl modified Aluminum

For similar material(s):

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

Siloxane and n-Alkyl modified Zinc Oxide

For similar material(s):

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

Respiratory tract.

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

Lung.

Lead

For similar material(s):

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

Heart

kidney

Blood

central nervous system (CNS) effects

Carcinogenicity

Not classified based on available information.

Information for the Product:

Product test data not available.

Information for components:

Siloxane and n-Decyl modified Aluminum

Available data are inadequate to evaluate carcinogenicity.

Siloxane and n-Alkyl modified Zinc Oxide

Available data are inadequate to evaluate carcinogenicity.

Lead

No relevant data found.

Teratogenicity

Not classified based on available information.

Information for the Product:

Product test data not available.

Information for components:

Siloxane and n-Decyl modified Aluminum

High doses of aluminium and aluminium salts given to laboratory animals during pregnancy have caused developmental toxicity in the fetus at doses mildly toxic to the mother.

Siloxane and n-Alkyl modified Zinc Oxide

No relevant data found.

Lead

Inorganic lead compounds can cause developmental damage.

Reproductive toxicity

Not classified based on available information.

Information for the Product:

Product test data not available.

Information for components:

Siloxane and n-Decyl modified Aluminum

No relevant data found.

Siloxane and n-Alkyl modified Zinc Oxide

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

Lead

For similar material(s): Has been shown to interfere with reproduction and/or fertility in humans.

Mutagenicity

Not classified based on available information.

Information for the Product:

Product test data not available.

Information for components:

Siloxane and n-Decyl modified Aluminum

For similar material(s): In vitro genetic toxicity studies were predominantly negative. Animal genetic toxicity studies were predominantly negative.

Siloxane and n-Alkyl modified Zinc Oxide

For similar material(s): In vitro genetic toxicity studies were predominantly negative. Animal genetic toxicity studies were predominantly negative.

Lead

For similar material(s): In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were positive.

12. ECOLOGICAL INFORMATION

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

Ecotoxicity

Siloxane and n-Decyl modified Aluminum

Acute toxicity to fish

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

For similar material(s):

LC50, Fish, 96 Hour, > 100 mg/l

Acute toxicity to aquatic invertebrates

For similar material(s):

EC50, Daphnia magna (Water flea), 48 Hour, > 100 mg/l

Acute toxicity to algae/aquatic plants

For similar material(s):

EC50, algae, 14 d, Growth rate, > 2,000 mg/l

Chronic toxicity to fish

For similar material(s):

NOEC, Cyprinodon variegatus (sheepshead minnow), 33 d, mortality, 91 mg/l

Toxicity to Above Ground Organisms

Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg).

Based on information for a similar material:

oral LD50, Colinus virginianus (Bobwhite quail), > 5,000 mg/kg

Siloxane and n-Alkyl modified Zinc Oxide

Acute toxicity to aquatic invertebrates

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

For similar material(s):

EC50, Daphnia magna (Water flea), 48 Hour, > 100 mg/l

Lead

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).

For similar material(s):

LC50, Fathead minnow (Pimephales promelas), semi-static test, 96 Hour, 0.041 mg/l

Acute toxicity to aquatic invertebrates

For similar material(s):

LC50, Ceriodaphnia dubia (water flea), 48 Hour, 0.026 mg/l

Acute toxicity to algae/aquatic plants

For similar material(s):

EC50, Pseudokirchneriella subcapitata (algae), 72 Hour, Growth rate, 0.021 mg/l

Chronic toxicity to fish

For similar material(s):

EC10, Cyprinus carpio (Carp), flow-through, 7 d, mortality, 0.0178 mg/l

Chronic toxicity to aquatic invertebrates

For similar material(s):

NOEC, Great Pond Snail (Lymnea stagnalis), semi-static test, 56 d, mortality, 0.0027 mg/l

Persistence and degradability

Siloxane and n-Decyl modified Aluminum

Biodegradability: No appreciable biodegradation is expected.

Siloxane and n-Alkyl modified Zinc Oxide

Biodegradability: No relevant data found.

Lead

Biodegradability: Biodegradability is not applicable to inorganic substances.

Bioaccumulative potential

Siloxane and n-Decyl modified Aluminum

Bioaccumulation: No bioconcentration is expected because of the relatively high molecular weight (MW greater than 1000).

Siloxane and n-Alkyl modified Zinc Oxide

Bioaccumulation: No relevant data found.

Lead

Bioaccumulation: Partitioning from water to n-octanol is not applicable.

Mobility in Soil

Siloxane and n-Decyl modified Aluminum

Expected to be relatively immobile in soil ($K_{oc} > 5000$).

Siloxane and n-Alkyl modified Zinc Oxide

No relevant data found.

Lead

No relevant data found.

Results of PBT and vPvB assessment

Siloxane and n-Decyl modified Aluminum

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

Siloxane and n-Alkyl modified Zinc Oxide

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

Lead

PBT assessment does not apply

Other adverse effects

Siloxane and n-Decyl modified Aluminum

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

Siloxane and n-Alkyl modified Zinc Oxide

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

Lead

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 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 SDS SECTION 1: Identified Uses. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Recycler. Reclaimer. Incinerator or other thermal destruction device.

14. TRANSPORT INFORMATION

Classification for ROAD and Rail transport:

Not regulated for transport

Classification for SEA transport (IMO-IMDG):

Not regulated for transport

**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):

Not regulated for transport

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

15. REGULATORY INFORMATION

Philippines Inventory of Chemicals and Chemical Substances (PICCS)

The product contains an intentional component that is subject to a restriction. Production and/or use is limited by the conditions of the restriction.

Chemical Control : Not applicable
Order (CCO)

Priority Chemical List (PCL) : Not applicable

16. OTHER INFORMATION

Revision

Identification Number: 99188428 / 1810 / Issue Date: 14.01.2025 / Version: 3.0

In case this version of the SDS contains significant changes from the previous version, they are listed below or noted by bold, double bars in the left-hand margin throughout this document.

Changes encompass identification, hazards, tox/eco-tox information and the addition/removal of the ingredients, and regulatory information, hazard information, uses, risk management measures and other key regulatory changes of the product. Detailed explanation of the changes can be obtained upon request.

Legend

ACGIH	USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI	ACGIH - Biological Exposure Indices (BEI)
PH OEL	Philippines. Threshold Limit Values For Airborne Contaminants
STEL	Short-term exposure limit
TWA	Threshold limit for airborne contaminants

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 PHILIPPINES, INC. 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.

PH