



SAFETY DATA SHEET

THE DOW CHEMICAL COMPANY

Product name: UCAR ENDURANCE™ EG106 Aircraft
Deicing/Anti-Icing Fluid SAE AMS1428/1 Type IV

Issue Date: 05/06/2025

Print Date: 05/07/2025

THE DOW CHEMICAL COMPANY encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. IDENTIFICATION

Product name: UCAR ENDURANCE™ EG106 Aircraft Deicing/Anti-Icing Fluid SAE AMS1428/1 Type IV

Recommended use of the chemical and restrictions on use

Identified uses: Aircraft deicing fluid. For industrial use only. We recommend that you use this product in a manner consistent with the listed use. If your intended use is not consistent with the stated use, please contact your sales or technical service representative.

COMPANY IDENTIFICATION

THE DOW CHEMICAL COMPANY
2211 H.H. DOW WAY
MIDLAND MI 48674
UNITED STATES

Customer Information Number:

800-258-2436
SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: CHEMTREC +1 800-424-9300

Local Emergency Contact: 800-424-9300

2. HAZARDS IDENTIFICATION

Hazard classification

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Category 4 - Oral

Specific target organ toxicity - repeated exposure - Category 2 - Oral

Label elements

Hazard pictograms



Signal word: **WARNING!**

Hazards

H302 Harmful if swallowed.
H373 May cause damage to organs (Kidney) through prolonged or repeated exposure if swallowed.

Precautionary statements

Prevention

P260 Do not breathe mist or vapours.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.

Response

P301 + P312 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.
+ P330
P314 Get medical advice/ attention if you feel unwell.

Disposal

P501 Dispose of contents/ 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
Ethylene glycol	107-21-1	>= 50.0 - < 70.0 %*

Note

*Actual concentration/concentration range is being withheld as proprietary information.

4. FIRST AID MEASURES

Description of first aid measures

General advice:

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

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

Skin contact: Immediately flush skin with water while removing contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Contaminated leather items such as shoes should be disposed of properly. Suitable emergency safety shower facility should be immediately available.

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: Do not induce vomiting. Seek medical attention immediately. If person is fully conscious give 1 cup or 8 ounces (240 ml) of water. If medical advice is delayed and if an adult has swallowed several ounces of chemical, then give 3-4 ounces (1/3-1/2 Cup) (90-120 ml) of hard liquor such as 80 proof whiskey. For children, give proportionally less liquor at a dose of 0.3 ounce (1 1/2 tsp.) (8 ml) liquor for each 10 pounds of body weight, or 2 ml per kg body weight [e.g., 1.2 ounce (2 1/3 tbsp.) for a 40 pound child or 36 ml for an 18 kg child].

Most important symptoms and effects, both acute and delayed:

Harmful if swallowed. May cause damage to organs through prolonged or repeated exposure if swallowed.

Indication of any immediate medical attention and special treatment needed

Notes to physician: Maintain adequate ventilation and oxygenation of the patient. If several ounces (60 - 100 ml) of ethylene glycol have been ingested, early administration of ethanol may counter the toxic effects (metabolic acidosis, renal damage). Consider hemodialysis or peritoneal dialysis & thiamine 100 mg plus pyridoxine 50 mg intravenously every 6 hours. 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. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. In severe poisoning, respiratory support with mechanical ventilation and positive end expiratory pressure may be required. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. If burn is present, treat as any thermal burn, after decontamination. 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: To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam..

Unsuitable extinguishing media: No data available

Special hazards arising from the substance or mixture

Hazardous combustion products: Under fire conditions some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds..

Unusual Fire and Explosion Hazards: This material will not burn until the water has evaporated. Residue can burn..

Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry.. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed.. To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam..

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves).. If protective equipment is not available or not used, fight fire from a protected location or safe distance..

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Isolate area. Keep unnecessary and unprotected personnel from entering the area. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. Refer to section 7, Handling, for additional precautionary measures.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up: Small spills: Absorb with materials such as: Cat litter. Sawdust. Vermiculite. Zorb-all®. Collect in suitable and properly labeled containers. Large spills: Dike area to contain spill. Recover spilled material if possible. Contain spilled material if possible. See Section 13, Disposal Considerations, for additional information.

7. HANDLING AND STORAGE

Precautions for safe handling: Do not swallow. Avoid contact with eyes. Wash thoroughly after handling. Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Conditions for safe storage: Store in accordance with good manufacturing practices. Additional storage and handling information on this product may be obtained by calling your sales or customer service contact.

Storage stability

Shelf life: Use within 12 Month

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
Ethylene glycol	Dow IHG	TWA	50 mg/m3
	Dow IHG	STEL	100 mg/m3
	ACGIH	TWA Vapour	25 ppm
	Further information: A4: Not classifiable as a human carcinogen		
	ACGIH	STEL Vapour	50 ppm
	Further information: A4: Not classifiable as a human carcinogen		
	ACGIH	STEL Inhalable fraction, Aerosol only	10 mg/m3
	Further information: A4: Not classifiable as a human carcinogen		

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). If there is a potential for exposure to particles which could cause eye discomfort, wear chemical goggles. If exposure causes eye discomfort, use a full-face respirator.

Skin protection

Hand protection: Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Use gloves with insulation for thermal protection, when needed. If hands are cut or scratched, use gloves chemically resistant to this material even for brief exposures. Examples of preferred glove barrier materials include: Natural rubber ("latex"). Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl chloride ("PVC" or "vinyl"). Examples of acceptable glove barrier materials include: Neoprene. Avoid gloves made of: Polyvinyl alcohol ("PVA"). 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: When prolonged or frequently repeated contact could occur, use protective clothing chemically resistant to this material. Selection of specific items such as faceshield, boots, apron, or full-body suit will depend on the task. When handling hot material, protect skin from thermal burns as well as from skin absorption.

Respiratory protection: Atmospheric levels should be maintained below the exposure guideline. When airborne exposure guidelines and/or comfort levels may be exceeded, use an approved air-purifying respirator.

The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state	Liquid.
Color	Green
Odor	Sweet
Odor Threshold	No test data available
pH	7.9 - 8.9 <i>ASTM E70</i>
Melting point/ range	Not applicable to liquids
Freezing point	-36 °C (-33 °F) <i>ASTM D1177</i>
Boiling point (760 mmHg)	104.2 °C (219.6 °F) <i>ASTM E1719</i>
Flash point	closed cup <i>ASTM D 93</i> not flammable
Evaporation Rate (Butyl Acetate = 1)	<0.5 <i>Estimated.</i>
Flammability (solid, gas)	Not Applicable
Flammability (liquids)	Not expected to be a static-accumulating flammable liquid.
Lower explosion limit	No test data available
Upper explosion limit	No test data available
Vapor Pressure	23.6 mmHg at 25 °C (77 °F) <i>ASTM E1719</i>
Relative Vapor Density (air = 1)	No test data available
Relative Density (water = 1)	1.07 at 20 °C (68 °F) / 20 °C <i>ASTM D891</i>
Water solubility	at 25 °C (77 °F) <i>Visual</i> completely soluble
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	No test data available
Decomposition temperature	No test data available
Kinematic Viscosity	No data available
Explosive properties	No test data available
Oxidizing properties	No test data available
Molecular weight	No test data available

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

10. STABILITY AND REACTIVITY

Reactivity: No data available

Chemical stability: Thermally stable at recommended temperatures and pressures.

Possibility of hazardous reactions: Polymerization will not occur.

Conditions to avoid: Some components of this product can decompose at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems.

Incompatible materials: Avoid contact with: Strong acids. Strong bases. Strong oxidizers.

Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials..

11. TOXICOLOGICAL INFORMATION

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

Information on likely routes of exposure

Ingestion, Inhalation, Skin contact, Eye contact.

Acute toxicity (represents short term exposures with immediate effects - no chronic/delayed effects known unless otherwise noted)

Acute Toxicity Endpoints:

Harmful if swallowed.

Acute oral toxicity

Information for the Product:

Oral toxicity is expected to be moderate in humans due to ethylene glycol even though tests with animals show a lower degree of toxicity. Ingestion of quantities (approximately 65 mL (2 oz.) for diethylene glycol or 100 mL (3 oz.) for ethylene glycol) has caused death in humans. May cause nausea and vomiting. May cause abdominal discomfort or diarrhea. Excessive exposure may cause central nervous system effects, cardiopulmonary effects (metabolic acidosis), and kidney failure.

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

Information for components:

Ethylene glycol

In humans, expected to be moderately toxic if swallowed even though oral toxicity was low when tested in animals. Ingestion of quantities (approximately 65 mL (2 oz.) for diethylene glycol or 100 mL (3 oz.) for ethylene glycol) has caused death in humans. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. May cause nausea and vomiting. May cause abdominal discomfort or diarrhea. Excessive

exposure may cause central nervous system effects, cardiopulmonary effects (metabolic acidosis), and kidney failure.

ALD - Approximate Lethal Dose, Human, adult, 3 Ounces Estimated.

Acute dermal toxicity

Information for the Product:

Prolonged skin contact is unlikely to result in absorption of harmful amounts. Repeated skin exposure to large quantities may result in absorption of harmful amounts. Massive contact with damaged skin or of material sufficiently hot to burn skin may result in absorption of potentially lethal amounts.

Based on information for component(s):
LD50, Rabbit, > 5,000 mg/kg

Information for components:

Ethylene glycol

LD50, Rabbit, > 10,600 mg/kg

LD50, Mouse, male and female, > 3,500 mg/kg

Acute inhalation toxicity

Information for the Product:

At room temperature, exposure to vapor is minimal due to low volatility. With good ventilation, single exposure is not expected to cause adverse effects. If material is heated or areas are poorly ventilated, vapor/mist may accumulate and cause respiratory irritation and symptoms such as headache and nausea.

For Ethylene glycol:
LC50, Rat, male and female, 6 Hour, dust/mist, > 2.5 mg/l

Information for components:

Ethylene glycol

LC50, Rat, male and female, 6 Hour, dust/mist, > 2.5 mg/l

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 slight skin irritation with local redness.
Repeated contact may cause skin irritation with local redness.

Information for components:

Ethylene glycol

Brief contact is essentially nonirritating to skin.

Prolonged contact may cause slight skin irritation with local redness.

Repeated contact may cause skin irritation with local redness.

Serious eye damage/eye irritation

Not classified based on available information.

Information for the Product:

Based on information for component(s):

May cause slight eye irritation.

Corneal injury is unlikely.

Vapor or mist may cause eye irritation.

Information for components:

Ethylene glycol

May cause slight eye irritation.

Corneal injury is unlikely.

Vapor or mist may cause eye irritation.

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:

Ethylene glycol

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:

Ethylene glycol

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:

Ethylene glycol

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)

May cause damage to organs (Kidney) through prolonged or repeated exposure if swallowed.

Information for the Product:

Product test data not available.

Information for components:

Ethylene glycol

Observations in humans include:

Nystagmus (involuntary eye movement).

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

Kidney.

Liver.

Carcinogenicity

Not classified based on available information.

Information for the Product:

Product test data not available.

Information for components:

Ethylene glycol

Ethylene glycol did not cause cancer in long-term animal studies.

Teratogenicity

Not classified based on available information.

Information for the Product:

Product test data not available.

Information for components:

Ethylene glycol

Based on animal studies, ingestion of very large amounts of ethylene glycol appears to be the major and possibly only route of exposure to produce birth defects. Exposures by inhalation or skin contact, the primary routes of occupational exposure, had minimal effect on the fetus, in animal studies.

Reproductive toxicity

Not classified based on available information.

Information for the Product:

Product test data not available.

Information for components:

Ethylene glycol

Ingestion of large amounts of ethylene glycol has been shown to interfere with reproduction in animals.

Mutagenicity

Not classified based on available information.

Information for the Product:

Product test data not available.

Information for components:

Ethylene glycol

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 are available.

Toxicity

Acute toxicity to fish

For this family of materials:

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).

Persistence and degradability

Ethylene glycol

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material has inherent, ultimate biodegradability according to OECD test (s) guidelines (reaches > 60 or 70% biodegradation in OECD test(s)).

10-day Window: Pass

Biodegradation: 90 - 100 %

Exposure time: 10 d

Method: OECD Test Guideline 301A or Equivalent

10-day Window: Not applicable

Biodegradation: 90 %

Exposure time: 1 d

Method: OECD Test Guideline 302B or Equivalent

Theoretical Oxygen Demand: 1.29 mg/mg

Bioaccumulative potential

Ethylene glycol

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

Partition coefficient: n-octanol/water(log Pow): -1.36 Measured

Bioconcentration factor (BCF): 10 *Leuciscus idus* (Golden orfe)

Mobility in soil

Ethylene glycol

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): 1 Estimated.

13. DISPOSAL CONSIDERATIONS

Disposal methods: 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: Reclaimer. Incinerator or other thermal destruction device.

14. TRANSPORT INFORMATION

DOT

Proper shipping name

OTHER REGULATED SUBSTANCES, LIQUID,
N.O.S.(Ethylene glycol)

UN number	NA 3082
Class	9
Packing group	III
Reportable Quantity	Ethylene glycol

Classification for SEA transport (IMO-IMDG):

Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code	Not regulated for transport
	Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Not regulated for transport

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

15. REGULATORY INFORMATION

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

Acute toxicity (any route of exposure)

Specific target organ toxicity (single or repeated exposure)

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

This product contains the following substances which are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and which are listed in 40 CFR 372.

Components

Ethylene glycol

CASRN

107-21-1

U.S. Toxic Substances Control Act (TSCA)

A component of this product is subject to a TSCA Polymer Exemption (40 CFR 723.250).

Pennsylvania Worker and Community Right-To-Know Act:

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

California Prop. 65

WARNING: This product can expose you to chemicals including 1,4-Dioxane, Formaldehyde, Ethyl acrylate, Acetaldehyde, which is/are known to the State of California to cause cancer, and Ethylene glycol, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

United States TSCA Inventory (TSCA)

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

16. OTHER INFORMATION

Hazard Rating System

NFPA

Health	Flammability	Instability
1	1	0

Revision

Identification Number: 284315 / A001 / Issue Date: 05/06/2025 / Version: 10.0

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)
Dow IHG	Dow Industrial Hygiene Guideline
STEL	Short term exposure limit
TWA	Time weighted average

Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 -

Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Information Source and References

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

THE DOW CHEMICAL COMPANY urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

US