



# SAFETY DATA SHEET

## THE DOW CHEMICAL COMPANY

**Product name:** DOWFROST™ LC 55 Heat Transfer Fluid,  
Dyed

**Issue Date:** 03/18/2026

**Print Date:** 08/19/2026

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.

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## 1. IDENTIFICATION

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**Product name:** DOWFROST™ LC 55 Heat Transfer Fluid, Dyed

### **Recommended use of the chemical and restrictions on use**

**Identified uses:** Intended as a heat transfer fluid for closed-loop systems. 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

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## 2. HAZARDS IDENTIFICATION

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### **Hazard classification for the product as supplied**

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

Not a hazardous substance or mixture.

### **Other hazards**

No data available

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## 3. COMPOSITION/INFORMATION ON INGREDIENTS

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This product is a mixture.

| N°   | Component            | CASRN      | Concentration      | US Unique Identifier (internal) |
|------|----------------------|------------|--------------------|---------------------------------|
| 0001 | Propane-1,2-diol     | 57-55-6    | > 55.0 - < 59.0 %* | Not applicable                  |
| 0002 | Sodium tolyltriazole | 64665-57-2 | >= 0.1 - < 0.25 %  | Not applicable                  |

Actual concentration or concentration range is withheld as a trade secret

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## 4. FIRST AID MEASURES

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### Description of first aid measures

#### General advice:

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:** 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:** Rinse mouth with water. No emergency medical treatment necessary.

#### 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:** No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

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## 5. FIREFIGHTING MEASURES

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### 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.. Combustion products may include and are not limited to:. Carbon monoxide.. Carbon dioxide..

**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..

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## 6. ACCIDENTAL RELEASE MEASURES

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#### Personal precautions, protective equipment and emergency procedures:

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.

**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. See Section 13, Disposal Considerations, for additional information.

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## 7. HANDLING AND STORAGE

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**Precautions for safe handling:** Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. 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:** Do not store in: Galvanized steel. Opened or unlabeled containers. Unlined steel containers. Store in the following material(s): stainless steel, carbon steel with suitable liner (HDPE), or in original unopened container. Keep in a dry place. Avoid moisture. Store away from direct sunlight or ultraviolet light. Store indoors.

#### Storage stability

**Shelf life:** Use within 60 Month

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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#### 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 |
|-----------|------------|-----------------|-------|
|-----------|------------|-----------------|-------|

|                  |         |     |          |
|------------------|---------|-----|----------|
| Propane-1,2-diol | US WEEL | TWA | 10 mg/m3 |
|------------------|---------|-----|----------|

**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.

**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: Butyl rubber. 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. 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. In misty atmospheres, use an approved particulate respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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**Appearance**

|                       |                 |
|-----------------------|-----------------|
| <b>Physical state</b> | Liquid.         |
| <b>Color</b>          | Yellow to green |

**Odor** characteristic

**Odor Threshold** No data available

**pH** *Literature*

**Melting point/freezing point**

**Melting point/ range** No data available

**Freezing point** No data available

**Boiling point, initial boiling point and boiling range**

**Boiling point (760 mmHg)** 106.1 °C ( 223.0 °F)

**Flash point** not determined

**Evaporation Rate (Butyl Acetate = 1)** < 0.5 *Estimated.*

**Flammability**

|                                                     |                                                    |
|-----------------------------------------------------|----------------------------------------------------|
| Flammability (solid, gas)                           | Not Applicable                                     |
| Flammability (liquids)                              | No data available                                  |
| <b>Upper/lower flammability or explosive limits</b> |                                                    |
| Lower explosion limit                               | 2.6 % vol                                          |
| Upper explosion limit                               | 12.5 % vol                                         |
| Vapor Pressure                                      | 15 mmHg at 20 °C (68 °F) <i>Literature</i>         |
| <b>Relative vapour density</b>                      |                                                    |
| Relative Vapor Density (air = 1)                    | No data available                                  |
| <b>Density and / or relative density</b>            |                                                    |
| Relative Density (water = 1)                        | No data available                                  |
| <b>Solubility(ies)</b>                              |                                                    |
| Water solubility                                    | completely soluble                                 |
| Partition coefficient: n-octanol/water (log value)  | No data available                                  |
| Auto-ignition temperature                           | 371 °C (700 °F) <i>Literature</i> Propylene glycol |
| Decomposition temperature                           | No test data available                             |
| Kinematic Viscosity                                 | 7.8 cSt                                            |
| <b>Particle characteristics</b>                     |                                                    |
| Particle size                                       | not applicable                                     |

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

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## 10. STABILITY AND REACTIVITY

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**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..

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## 11. TOXICOLOGICAL INFORMATION

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*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:**

Not classified based on available information.

**Acute oral toxicity**

**Information for the Product:**

Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

Based on information for component(s):  
LD50, Rat, > 20,000 mg/kg

**Information for components:**

**Propane-1,2-diol**

LD50, Rat, > 20,000 mg/kg

**Sodium tolyltriazole**

LD50, Rat, male, 930 mg/kg OECD 401 or equivalent

LD50, Rat, female, 735 mg/kg OECD 401 or equivalent

**Acute dermal toxicity**

**Information for the Product:**

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

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

**Information for components:**

**Propane-1,2-diol**

LD50, Rabbit, > 2,000 mg/kg No deaths occurred at this concentration.

**Sodium tolyltriazole**

LD50, Rabbit, male and female, > 2,000 mg/kg OECD 402 or equivalent No deaths occurred at this concentration.

**Acute inhalation toxicity**

**Information for the Product:**

At room temperature, exposure to vapor is minimal due to low volatility. Mist may cause irritation of upper respiratory tract (nose and throat).

As product: The LC50 has not been determined.  
LC50, Rat, 2 Hour, vapour, 317.042 mg/l No deaths occurred following exposure to a saturated atmosphere.

**Information for components:**

**Propane-1,2-diol**

LC50, Rabbit, 2 Hour, dust/mist, 317.042 mg/l No deaths occurred at this concentration.

**Sodium tolyltriazole**

The LC50 has not been determined.

**Skin corrosion/irritation**

Not classified based on available information.

**Information for the Product:**

Based on information for component(s):

Prolonged contact is essentially nonirritating to skin.

Repeated contact may cause flaking and softening of skin.

**Information for components:**

**Propane-1,2-diol**

Prolonged contact is essentially nonirritating to skin.

Repeated contact may cause flaking and softening of skin.

**Sodium tolyltriazole**

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

**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.

Corneal injury is unlikely.

Mist may cause eye irritation.

**Information for components:**

**Propane-1,2-diol**

May cause slight temporary eye irritation.

Corneal injury is unlikely.

Mist may cause eye irritation.

**Sodium tolyltriazole**

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

**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:  
No relevant data found.

For respiratory sensitization:  
No relevant data found.

**Information for components:**

**Propane-1,2-diol**

For skin sensitization:  
Did not cause allergic skin reactions when tested in humans.

For respiratory sensitization:  
No relevant data found.

**Sodium tolyltriazole**

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:**

**Propane-1,2-diol**

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

**Sodium tolyltriazole**

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

**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:**

**Propane-1,2-diol**

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

**Sodium tolyltriazole**

Aspiration into the respiratory system may occur during ingestion or vomiting. Due to corrosivity, tissue damage or lung injury may occur.

**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:**

**Propane-1,2-diol**

In rare cases, repeated excessive exposure to propylene glycol may cause central nervous system effects.

**Sodium tolyltriazole**

For similar material(s):

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

**Carcinogenicity**

Not classified based on available information.

**Information for the Product:**

Product test data not available.

**Information for components:**

**Propane-1,2-diol**

Did not cause cancer in laboratory animals.

**Sodium tolyltriazole**

No relevant data found.

**Teratogenicity**

Not classified based on available information.

**Information for the Product:**

Product test data not available.

**Information for components:**

**Propane-1,2-diol**

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

**Sodium tolyltriazole**

No relevant data found.

**Reproductive toxicity**

Not classified based on available information.

**Information for the Product:**

Product test data not available.

**Information for components:**

**Propane-1,2-diol**

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

**Sodium tolyltriazole**

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

**Mutagenicity**

Not classified based on available information.

**Information for the Product:**

Product test data not available.

**Information for components:**

**Propane-1,2-diol**

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

**Sodium tolyltriazole**

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

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## 12. ECOLOGICAL INFORMATION

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

**Toxicity**

**Information for the Product:**

Product test data not available.

**Information for components:****Propane-1,2-diol****Acute toxicity to fish**

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).  
LC50, Oncorhynchus mykiss (rainbow trout), static test, 96 Hour, 40,613 mg/l, OECD Test Guideline 203

**Acute toxicity to aquatic invertebrates**

LC50, Ceriodaphnia dubia (water flea), static test, 48 Hour, 18,340 mg/l, OECD Test Guideline 202

**Acute toxicity to algae/aquatic plants**

ErC50, Pseudokirchneriella subcapitata (green algae), 96 Hour, Growth rate inhibition, 19,000 mg/l, OECD Test Guideline 201

**Toxicity to bacteria**

NOEC, Pseudomonas putida, 18 Hour, > 20,000 mg/l

**Chronic toxicity to aquatic invertebrates**

NOEC, Ceriodaphnia dubia (water flea), semi-static test, 7 d, number of offspring, 13,020 mg/l

**Sodium tolyltriazole****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).

For similar material(s):

LC50, Zebra fish (Danio/Brachydanio rerio), semi-static test, 96 Hour, > 173 mg/l, OECD Test Guideline 203 or Equivalent

For similar material(s):

LC50, Sheepshead minnow (Cyprinodon variegatus), semi-static test, 96 Hour, 55 mg/l, OECD Test Guideline 203 or Equivalent

**Acute toxicity to aquatic invertebrates**

For similar material(s):

EC50, Daphnia galeata (water flea), static test, 48 Hour, 8.58 mg/l, OECD Test Guideline 202 or Equivalent

For similar material(s):

LC50, Marine copepod (acartia tonsa), Static, 48 Hour, 55 mg/l

**Acute toxicity to algae/aquatic plants**

For similar material(s):

NOEC, Skeletonema costatum (marine diatom), Static, 72 Hour, Growth rate, 1.18 mg/l

For similar material(s):

ErC50, Skeletonema costatum (marine diatom), Static, 72 Hour, Growth rate, 53 mg/l

For similar material(s):

ErC50, Pseudokirchneriella subcapitata (green algae), Static, 72 Hour, Growth rate, 75 mg/l, OECD Test Guideline 201 or Equivalent

For similar material(s):

NOEC, Pseudokirchneriella subcapitata (green algae), Static, 72 Hour, Growth rate, 10 mg/l, OECD Test Guideline 201 or Equivalent

**Toxicity to bacteria**

For similar material(s):

EC50, Bacteria (active sludge), Static, 1 d, Respiration rates., 1,060 mg/l

**Chronic toxicity to aquatic invertebrates**

For similar material(s):

EC10, Daphnia galeata (water flea), semi-static test, 21 d, number of offspring, 0.4 mg/l

For similar material(s):

NOEC, Daphnia magna (Water flea), semi-static test, 21 d, number of offspring, 18.4 mg/l

**Persistence and degradability****Information for the Product:**

Product test data not available.

**Information for components:****Propane-1,2-diol**

**Biodegradability:** Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Biodegradation may occur under anaerobic conditions (in the absence of oxygen).

10-day Window: Pass

**Biodegradation:** 81 %

**Exposure time:** 28 d

**Method:** OECD Test Guideline 301F or Equivalent

10-day Window: Not applicable

**Biodegradation:** 96 %

**Exposure time:** 64 d

**Method:** OECD Test Guideline 306 or Equivalent

**Theoretical Oxygen Demand:** 1.68 mg/mg

**Chemical Oxygen Demand:** 1.53 mg/mg

**Biological oxygen demand (BOD)**

| Incubation Time | BOD      |
|-----------------|----------|
| 5 d             | 69.000 % |
| 10 d            | 70.000 % |
| 20 d            | 86.000 % |

**Photodegradation**

**Atmospheric half-life:** 10 Hour

**Method:** Estimated.

**Sodium tolyltriazole**

**Biodegradability:** Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.

For similar material(s):

**Biodegradation:** 4 %

**Exposure time:** 28 d

**Method:** OECD Test Guideline 301F or Equivalent

### Bioaccumulative potential

#### Information for the Product:

Product test data not available.

#### Information for components:

##### Propane-1,2-diol

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

**Partition coefficient: n-octanol/water(log Pow):** -1.07 Measured

**Bioconcentration factor (BCF):** 0.09 Fish Estimated.

##### Sodium tolyltriazole

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

**Partition coefficient: n-octanol/water(log Pow):** 1.087 at 25 °C OECD Test Guideline 117 or Equivalent

### Mobility in soil

#### Information for the Product:

Product test data not available.

#### Information for components:

##### Propane-1,2-diol

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.

##### Sodium tolyltriazole

**Partition coefficient (Koc):** 100 Estimated.

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## 13. DISPOSAL CONSIDERATIONS

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**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.

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## 14. TRANSPORT INFORMATION

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### DOT

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.

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## 15. REGULATORY INFORMATION

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

No SARA Hazards

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

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

### Pennsylvania Right To Know

The following chemicals are listed because of the additional requirements of Pennsylvania law:

#### Components

Propane-1,2-diol

#### CASRN

57-55-6

### California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

**United States TSCA Inventory (US TSCA)**

All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

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**16. OTHER INFORMATION**

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**Hazard Rating System****NFPA**

| Health | Flammability | Instability |
|--------|--------------|-------------|
| 0      | 0            | 0           |

**Revision**

Identification Number: 9997002 / A001 / Issue Date: 03/18/2026 / Version: 2.0

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**

|         |                                                     |
|---------|-----------------------------------------------------|
| TWA     | 8-hr TWA                                            |
| US WEEL | USA. Workplace Environmental Exposure Levels (WEEL) |

**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 rateresponse; 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 inhibitoryconcentration; 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; 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