Dow (hereinafter, and for purposes of this MSDS only, refers to The Dow Chemical Company and to Dow Chemical Canada Inc.) encourages and expects you to read and understand the entire MSDS, as there is important information throughout the document. Dow expects you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

# 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

## 1.1 IDENTIFICATION

**Product Name**
TERGITOL(TM) 15-S-9 SURFACTANT

## 1.2 COMPANY IDENTIFICATION

The Dow Chemical Company
Midland, MI 48674

## 1.3 EMERGENCY TELEPHONE NUMBER

**24-HOUR EMERGENCY TELEPHONE NUMBER:** (989)636-4400.
Customer Information Number: 1-800-258-2436.
2. COMPOSITION INFORMATION

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS #</th>
<th>Amount (%W/W)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary alcohol ethoxylate</td>
<td>84133-50-6</td>
<td>&gt; 97 %</td>
</tr>
<tr>
<td>Polyethylene glycol</td>
<td>25322-68-3</td>
<td>&lt; 3%</td>
</tr>
<tr>
<td>Alcohols, C12-14-secondary</td>
<td>126950-60-5</td>
<td>&lt; 2%</td>
</tr>
</tbody>
</table>

3. HAZARDS IDENTIFICATION

3.1 EMERGENCY OVERVIEW

Appearance       Transparent colorless
Physical State    Liquid
Odor             Mild
Hazards of product DANGER!
                    CAUSES EYE BURNS.
                    HARMFUL BY INHALATION OF AEROSOL.
                    HARMFUL IF ABSORBED THROUGH SKIN.
                    HARMFUL IF SWALLOWED.
                    CAUSES SKIN IRRITATION.
                    ASPIRATION MAY CAUSE LUNG DAMAGE.

3.2 POTENTIAL HEALTH EFFECTS

Effects of Single Acute Overexposure

Inhalation    Short-term harmful health effects are not expected from vapor generated at ambient temperature. Aerosol can be hazardous if inhaled. See "Significant Data with Possible Relevance to Humans"
Eye Contact  Causes moderate to severe irritation, experienced as discomfort or pain, excess blinking and tear production, with marked excess redness and swelling of the conjunctiva. Corneal injury may occur.

Skin Contact  Causes irritation with discomfort, local redness, and possible swelling. Prolonged contact may cause severe irritation, with local discomfort or pain, and local redness and swelling. Effects may be prolonged.

Skin Absorption  Prolonged or widespread contact may result in the absorption of potentially harmful amounts of material.

Swallowing  Moderately toxic. May cause irritation of the mouth and throat, abdominal discomfort, nausea, vomiting, and diarrhea. Aspiration into the lungs may occur during ingestion or vomiting, resulting in lung injury.

Chronic, Prolonged or Repeated Overexposure

Effects of Repeated Overexposure  Repeated skin contact may cause a dermatitis.
Other Effects of Overexposure  None currently known.

Medical Conditions Aggravated by Exposure

Skin contact may aggravate an existing dermatitis.

See Section 11 for toxicological information and additional information about potential health effects.

3.3 POTENTIAL ENVIRONMENTAL EFFECTS

See Section 12 for Ecological Information.

4. FIRST AID PROCEDURES

4.1 INHALATION
Remove to fresh air.

4.2 EYE CONTACT
Immediately flush eyes with water and continue washing for at least 15 minutes. DO NOT remove contact lenses, if worn. Obtain medical attention without delay, preferably from an ophthalmologist.

4.3 SKIN CONTACT
Remove contaminated clothing. Wash skin with soap and water. If irritation persists or if contact has been prolonged, obtain medical attention.

4.4 SWALLOWING
Give two glasses of water. DO NOT INDUCE VOMITING. Obtain medical attention.

4.5 NOTES TO PHYSICIAN
There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.
In case of massive overexposure, victim should be observed for several days for delayed effects.
Any material aspirated during vomiting may cause lung injury. Therefore, emesis should not be induced mechanically or pharmacologically. If it is considered necessary to evacuate the stomach contents, this should be done by means least likely to cause aspiration (e.g., gastric lavage after endotracheal intubation).

5. FIRE FIGHTING MEASURES

5.1 FLAMMABLE PROPERTIES - REFER TO SECTION 9, PHYSICAL AND CHEMICAL PROPERTIES

5.2 EXTINGUISHING MEDIA
Extinguish fires with water spray or apply alcohol-type or all-purpose-type foam by manufacturer's recommended techniques for large fires. Use carbon dioxide or dry chemical media for small fires.

5.3 FIRE FIGHTING PROCEDURES
Do not direct a solid stream of water or foam into hot, burning pools; this may cause frothing and increase fire intensity.

5.4 SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS
Use self-contained breathing apparatus and protective clothing.

5.5 UNUSUAL FIRE AND EXPLOSION HAZARDS
Avoid accumulation of water. Product may be carried across water surface spreading fire or contacting an ignition source.

5.6 HAZARDOUS COMBUSTION PRODUCTS
Burning can produce the following products: Carbon monoxide and/or carbon dioxide. Carbon monoxide is highly toxic if inhaled; carbon dioxide in sufficient concentrations can act as an asphyxiant.
6. ACCIDENTAL RELEASE MEASURES

Steps to be Taken if Material is Released or Spilled:
Contain spills immediately with inert materials (e.g., sand, earth). Transfer liquids and solid
diking material to suitable containers for recovery or disposal. To avoid gelling and foaming
problems, do not use water to flush away spills.

Personal Precautions: Wear eye and skin protection. Floor may be slippery; use care to avoid
falling. See Section 8.2 - Personal Protection.

Environmental Precautions: Avoid discharge to natural waters.

7. HANDLING AND STORAGE

7.1 HANDLING

General Handling
Do not get in eyes, on skin, on clothing.
Avoid breathing aerosol.
Do not swallow.
Keep container closed.
Use with adequate ventilation.
Wash thoroughly after handling.

FOR INDUSTRY USE ONLY.

Ventilation
Provide general and/or local exhaust ventilation to control airborne levels below the exposure
guidelines.

Other Precautions
Surfactants can cause foaming problems in biological wastewater treatment plants and other
high shear operations.

7.2 STORAGE

Store in accordance with good industrial practices. Storage information may be obtained from
product-specific Storage and Handling Guides, or by calling Dow's Customer Information Group
at 1-800-258-2436 (U.S.) or 1-800-331-6451 (Canada).

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION
8.1 EXPOSURE LIMITS

<table>
<thead>
<tr>
<th>Component</th>
<th>Exposure Limits</th>
<th>Skin</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyethylene glycol</td>
<td>10 mg/m³ TWA8 AIHA WEEL</td>
<td></td>
<td>Aerosol</td>
</tr>
</tbody>
</table>

In the Exposure Limits Chart above, if there is no specific qualifier (i.e., Aerosol) listed in the Form Column for a particular limit, the listed limit includes all airborne forms of the substance that can be inhaled.

A "Yes" in the Skin Column indicates a potential significant contribution to overall exposure by the cutaneous (skin) route, including mucous membranes and the eyes, either by contact with vapors or by direct skin contact with the substance. A "Blank" in the Skin Column indicates that exposure by the cutaneous (skin) route is not a potential significant contributor to overall exposure.

8.2 PERSONAL PROTECTION

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.
   For emergency response or for situations where the atmospheric level is unknown, use an approved positive-pressure self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply.

Ventilation: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

Eye Protection: Monogoggles

Protective Gloves: Polyvinyl chloride coated

Other Protective Equipment: Eye Bath, Safety Shower, Chemical apron

9. PHYSICAL AND CHEMICAL PROPERTIES
Physical State: Liquid

Appearance: Transparent colorless

Odor: Mild

Flash Point - Closed Cup: 193 °C 380 °F Pensky-Martens Closed Cup ASTM D 93

Flash Point - Open Cup: 243 °C 470 °F Cleveland Open Cup ASTM D 92

Flammable Limits In Air:
  Lower Not determined.
  Upper Not determined.

Autoignition Temperature: Not currently available.

Vapor Pressure: < 0.01 mmHg 20 °C

Boiling Point (760 mmHg): > 250 °C > 482 °F Decomposes

Vapor Density (air = 1): > 1

Specific Gravity (H2O = 1): 1.006 60 °C / 20 °C

Freezing Point: 6 °C 43 °F

Melting Point: Not applicable.

Solubility in Water (by weight): Completely soluble but some compositions may form gels

pH: Not currently available.

Molecular Weight: 596 g/mol

Evaporation Rate (Butyl Acetate = 1): < 0.01

10. STABILITY AND REACTIVITY

10.1 STABILITY/INSTABILITY Stable
**Incompatible Materials:** Normally unreactive; however, avoid strong bases at high temperatures, strong acids, strong oxidizing agents and materials reactive with hydroxyl compounds.

**10.2 HAZARDOUS POLYMERIZATION**  
Will not occur.

**11. TOXICOLOGICAL INFORMATION**

**ACUTE TOXICITY**

**Peroral**

Rat; male; LD50 = 1.62 \((1.18 - 2.24)\) ml/kg

**Major Signs:** sluggishness, prostration

**Gross Pathology:** lungs, stomach, intestines discolored, stomach and intestines distended, gas- or liquid-filled

**Peroral**

Rat; female; LD50 = 0.41 \((0.29 - 0.56)\) ml/kg

**Major Signs:** sluggishness, prostration

**Gross Pathology:** lungs, stomach, intestines discolored, stomach and intestines distended, gas- or liquid-filled

**Percutaneous**

Rabbit; male; LD50 = 1.12 \((0.52 - 2.41)\) ml/kg; 24 h occluded.

**Major Signs:** sluggishness, salivation, prostration, diarrhea, emaciation

**Gross Pathology:** lungs and trachea discolored
Percutaneous

Rabbit; female; LD50 = 2.38 (1.34 - 4.22) ml/kg; 24 h occluded.

**Major Signs:** sluggishness, salivation, prostration, diarrhea, emaciation

**Gross Pathology:** lungs and trachea discolored

Inhalation

Aerosol Studies  Rat; LC50 = 1.10 (0.85 - 1.42) mg/l

**Major Signs:** hyperactivity, wetness or encrustation on perinasal and periocular fur, blepharospasm, audible respiration, mouth breathing, unkempt appearance, decreased motor activity, distended abdomen

**Gross Pathology:** lungs discolored, intestines gas-filled

IRRITATION

**Skin:** Rabbit; 4 h occluded

**Results:** mild to moderate erythema, moderate to severe edema with subsequent desquamation; scabbing and fissuring on 2/6

**Eye:** Rabbit; 0.005 ml

**Results:** mild to severe corneal injury; mild iritis; moderate conjunctival irritation, corneal vascularization in 2/6, ocular discharge in 2/6.

**SIGNIFICANT DATA WITH POSSIBLE RELEVANCE TO HUMANS**

In studies with rabbits sustained occluded skin contact of the undiluted surfactant can cause inflammatory changes in the lung. This material can cause lung injury if deposited as a liquid directly into the lung. Some deaths have occurred in rats exposed to high aerosol concentrations for 4 hours. However, there were no histopathological findings in the lungs of rats that died, suggesting that the deaths were not caused by chemical toxicity, but likely related to some non-specific physical cause such as suffocation.

12. **ECOLOGICAL INFORMATION**
12.1 ENVIRONMENTAL FATE

**BOD (% Oxygen consumption)**

<table>
<thead>
<tr>
<th></th>
<th>Day 5</th>
<th>Day 10</th>
<th>Day 15</th>
<th>Day 20</th>
<th>Day 28/30</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>22 %</td>
<td>41 %</td>
<td></td>
<td></td>
<td>71 %</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Day 5</th>
<th>Day 10</th>
<th>Day 15</th>
<th>Day 20</th>
<th>Day 28/30</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>33 %</td>
<td>53 %</td>
<td></td>
<td></td>
<td>82 %</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Day 5</th>
<th>Day 10</th>
<th>Day 15</th>
<th>Day 20</th>
<th>Day 28/30</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>25 %</td>
<td>40 %</td>
<td></td>
<td></td>
<td>59 %</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Day 5</th>
<th>Day 10</th>
<th>Day 15</th>
<th>Day 20</th>
<th>Day 28/30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acclimated</td>
<td>28 %</td>
<td>44 %</td>
<td></td>
<td></td>
<td>79 %</td>
</tr>
</tbody>
</table>

**Closed Bottle Test (OECD 301D) (% Oxygen consumption)**

<table>
<thead>
<tr>
<th></th>
<th>Day 5</th>
<th>Day 10</th>
<th>Day 15</th>
<th>Day 28</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>19 %</td>
<td>32 %</td>
<td>41 %</td>
<td></td>
</tr>
</tbody>
</table>

**DOC die-away test (OECD 301A) (% dissolved organic carbon disappearance)**

<table>
<thead>
<tr>
<th></th>
<th>Day 7</th>
<th>Day 14</th>
<th>Day 21</th>
<th>Day 28</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>48 %</td>
<td>55 %</td>
<td>68 %</td>
<td>71 %</td>
</tr>
</tbody>
</table>

12.2 ECOTOXICITY

**Toxicity to Micro-organisms**
Bacterial Inhibition; 16 h; IC50
*Result value:* > 1000 mg/l

**Toxicity to Aquatic Invertebrates**
Daphnia; 48 h; LC50
*Result value:* 7.3 mg/l

**Toxicity to Aquatic Invertebrates**
Daphnia; 48 h; LC50
*Result value:* 4.1 (3.2 - 5.2) mg/l

**Toxicity to Fish**
Fathead Minnow; 96 h; LC50
Result value: 3.6 mg/l

Toxicity to Fish
Fathead Minnow; 96 h; LC50
Result value: 3.2 mg/l

12.3 FURTHER INFORMATION

Theoretical Oxygen Demand (THOD) - measured: 2.07 mg/mg

Theoretical Oxygen Demand (THOD) - calculated: 2.10 mg/mg

13. DISPOSAL CONSIDERATIONS

13.1 DISPOSAL

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. DOW HAS NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION 2 (Composition/ Information on Ingredients). FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: incinerator or other thermal destruction device. waste water treatment system. As a service to its customers, Dow can provide names of information resources to help identify waste management companies and other facilities which recycle, reprocess or manage chemicals or plastics, and that manage used drums. Telephone Dow's Customer Information Group at 1-800-258-2436 or 1-989-832-1556 (U.S.), or 1-800-331-6451 (Canada) for further details.

14. TRANSPORT INFORMATION

14.1 U.S. D.O.T.
MATERIAL SAFETY DATA SHEET

Product Name: TERGITOL(TM) 15-S-9 SURFACTANT
MSDS#: 1912
Effective Date: 02/10/2003
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NON-BULK
Proper Shipping Name: NOT REGULATED

BULK
Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCES LIQUID, NOS
Technical Name: ALCOHOL C6-C17 (SECONDARY) POLY (3-6) ETHOXYLATE
Hazard Class: 9
ID Number: UN3082
Packing Group: PG III

Other Information: MARINE POLLUTANT (ALCOHOL C6-C17 (SECONDARY) POLY (3-6) ETHOXYLATE)

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. 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

15.1 FEDERAL/NATIONAL

COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT OF 1980 (CERCLA) SECTION 103

This product contains the following substances subject to CERCLA Section 103 reporting requirements and are listed in 40 CFR Part 302.4.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS #</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylene oxide</td>
<td>75-21-8</td>
<td>&lt;= 0.0010%</td>
</tr>
<tr>
<td>1,4-Dioxane</td>
<td>123-91-1</td>
<td>&lt;= 0.0005%</td>
</tr>
<tr>
<td>Acetaldehyde</td>
<td>75-07-0</td>
<td>&lt;= 0.0005%</td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>50-00-0</td>
<td>&lt;= 0.0005%</td>
</tr>
</tbody>
</table>

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 TITLE III (EMERGENCY PLANNING AND COMMUNITY RIGHT TO KNOW ACT) SECTION 302

This product contains the following substances subject to SARA Section 302 reporting requirements and are listed in 40 CFR Part 302.4.
None.

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 TITLE III (EMERGENCY PLANNING AND COMMUNITY RIGHT TO KNOW ACT) SECTION 313

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

This product does not contain toxic chemicals at levels which require reporting under the statute.

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 TITLE III (EMERGENCY PLANNING AND COMMUNITY RIGHT TO KNOW ACT) SECTIONS 311 AND 312

- Delayed (Chronic) Health Hazard: Yes
- Fire Hazard: No
- Immediate (Acute) Health Hazard: Yes
- Reactive Hazard: No
- Sudden Release of Pressure Hazard: No

TOXIC SUBSTANCES CONTROL ACT (TSCA)

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements.

EUROPEAN INVENTORY OF EXISTING COMMERCIAL CHEMICAL SUBSTANCES (EINECS)

The components of this product are on the EINECS inventory or are exempt from EINECS inventory requirements.

CEPA - DOMESTIC SUBSTANCES LIST (DSL)

All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.
15.2 STATE/LOCAL

Pennsylvania (Worker and Community Right-to-Know Act)

The following product components are cited in the Pennsylvania Hazardous Substances List, the Pennsylvania Special Hazardous Substance List, and/or the Pennsylvania Environmental Hazardous Substance list, and are present at levels which require reporting.
None.

Massachusetts (Hazardous Substances Disclosure by Employers)

The following components of this product appear on the Massachusetts Substance List and are present at levels which could require identification in the MSDS:

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS #</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylene oxide</td>
<td>75-21-8</td>
<td>&lt;= 0.0010%</td>
</tr>
<tr>
<td>1,4-Dioxane</td>
<td>123-91-1</td>
<td>&lt;= 0.0005%</td>
</tr>
<tr>
<td>Acetaldehyde</td>
<td>75-07-0</td>
<td>&lt;= 0.0005%</td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>50-00-0</td>
<td>&lt;= 0.0005%</td>
</tr>
</tbody>
</table>

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

This product contains the following chemical(s) known to the State of California to cause cancer:

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS #</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,4-Dioxane</td>
<td>123-91-1</td>
<td>&lt;= 0.0005%</td>
</tr>
<tr>
<td>Acetaldehyde</td>
<td>75-07-0</td>
<td>&lt;= 0.0005%</td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>50-00-0</td>
<td>&lt;= 0.0005%</td>
</tr>
</tbody>
</table>

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

This product contains the following chemical(s) known to the State of California to cause cancer and birth defects or other reproductive harm.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS #</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylene oxide</td>
<td>75-21-8</td>
<td>&lt;= 0.0010%</td>
</tr>
</tbody>
</table>

California SCAQMD Rule 443.1 (South Coast Air Quality Management District Rule 443.1, Labeling of Materials Containing Organic Solvents)

VOC: Vapor pressure <0.01 mmHg at 20°C
0 g/L
This section provides selected regulatory information on this product including its components. This is not intended to include all regulations. It is the responsibility of the user to know and comply with all applicable rules, regulations and laws relating to the product being used.

16. OTHER INFORMATION

16.1 ADDITIONAL INFORMATION

ADDITIONAL INFORMATION: Additional product safety information on this product may be obtained by calling Dow's Customer Information Group at 1-800-258-2436 (U.S.) or 1-800-331-6451 (Canada).

16.2 HAZARD RATING SYSTEM

NFPA ratings for this product are:  H - 3   F - 1   R - 0

These ratings are part of a specific hazard communication program and should be disregarded where individuals are not trained in the use of this hazard rating system. You should be familiar with the hazard communication programs applicable to your workplace.

16.3 RECOMMENDED USES AND RESTRICTIONS

FOR INDUSTRY USE ONLY

16.4 REVISION

Version: 6.0
Revision: 02/10/2003
Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

16.5 LEGEND
**MATERIAL SAFETY DATA SHEET**

**Product Name:** TERGITOL(TM) 15-S-9 SURFACTANT  
**Effective Date:** 02/10/2003  
**MSDS#:** 1912  
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<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bacterial/NA</td>
<td>Non Acclimated Bacteria</td>
</tr>
<tr>
<td>F</td>
<td>Fire</td>
</tr>
<tr>
<td>H</td>
<td>Health</td>
</tr>
<tr>
<td>IHG</td>
<td>Industrial Hygiene Guideline</td>
</tr>
<tr>
<td>N/A</td>
<td>Not available</td>
</tr>
<tr>
<td>NFPA</td>
<td>National Fire Protection Association</td>
</tr>
<tr>
<td>O</td>
<td>Oxidizer</td>
</tr>
<tr>
<td>R</td>
<td>Reactivity</td>
</tr>
<tr>
<td>TS</td>
<td>Trade secret</td>
</tr>
<tr>
<td>VOL/VOL</td>
<td>Volume/Volume</td>
</tr>
<tr>
<td>W</td>
<td>Water Reactive</td>
</tr>
<tr>
<td>W/W</td>
<td>Weight/Weight</td>
</tr>
</tbody>
</table>

**NOTICE:** Dow urges each customer or recipient of this MSDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this MSDS 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 its 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 Dow, 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 MSDSs, Dow is not and cannot be responsible for MSDSs obtained from any source other than Dow. If you have obtained a Dow MSDS from a non-Dow source or if you are not sure that a Dow MSDS is current, please contact Dow for the most current version.