

# **SAFETY DATA SHEET**

#### THE DOW CHEMICAL COMPANY

Product name: UCON™ Hydrolube FG-46 Issue Date: 07/24/2018
Print Date: 07/25/2018

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: UCON™ Hydrolube FG-46

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

**Identified uses:** Selection of the appropriate polyglycol product for a specific application requires knowledge of the fluid requirements of the application, awareness of the most important of these requirements, and a match-up with the properties of the various polyglycol materials. Polyglycol products can be formulated for use in numerous industry applications such as hydraulic fluids, quenchants, compressor and refrigeration lubricants, heat transfer fluids, machinery lubricants, solder assist fluids, metalworking lubricants, textile finishing, etc. 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 2030 DOW CENTER MIDLAND MI 48674-0000 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 29 CFR 1910.1200 Skin irritation - Category 2 Eye irritation - Category 2A

Label elements Hazard pictograms



Signal word: WARNING!

#### **Hazards**

Causes skin irritation.

Causes serious eye irritation.

# **Precautionary statements**

## Prevention

Wash skin thoroughly after handling.

Wear protective gloves/ eye protection/ face protection.

#### Response

IF ON SKIN: Wash with plenty of soap and water.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if

present and easy to do. Continue rinsing.

If skin irritation occurs: Get medical advice/ attention. If eye irritation persists: Get medical advice/ attention.

ii eye imtation persists. Get medical advice/ attention.

Take off contaminated clothing and wash before reuse.

# Other hazards

No data available

# 3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

Component	CASRN	Concentration
Propylene glycol	57-55-6	> 38.0 - < 45.0 %
Water	7732-18-5	> 36.5 - < 38.5 %
Polyalkylene glycol	Trade secret	> 10.0 - < 20.0 %
Decanoic acid	334-48-5	> 1.0 - < 3.0 %
Potassium hydroxide	1310-58-3	< 1.0 %

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## 4. FIRST AID MEASURES

# **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: if effects occur, 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:** 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.

#### 5. FIREFIGHTING MEASURES

**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. Combustion products may include trace amounts of: Nitrogen oxides.

**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). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight

fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures:** Keep unnecessary and unprotected personnel from entering the area. Refer to section 7, Handling, for additional precautionary measures. 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:** Contain spilled material if possible. Collect in suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

## 7. HANDLING AND STORAGE

**Precautions for safe handling:** Avoid contact with eyes. Wash thoroughly after handling. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION. Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion.

Conditions for safe storage: Store in the following material(s): 316 stainless steel. Carbon steel. Glass-lined container. Polypropylene. Polyethylene-lined container. Stainless steel. Teflon. This material may soften and lift certain paint and surface coatings. Use product promptly after opening. Store in original unopened container. Unopened containers of material stored beyond the recommended shelf life should be retested against the sales specifications before use. 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 24 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/Notation
Propylene glycol	US WEEL	TWA	10 mg/m3
Potassium hydroxide	ACGIH	С	2 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"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl chloride ("PVC" or "vinyl"). 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: 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.

# 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance** 

Physical state Liquid.

Color Colorless to yellow

**Odor** Mild

Odor ThresholdNo test data availablepH8.0 - 9.0 ASTM E70Melting point/rangeNot applicable to liquids

Freezing point See Pour Point

Boiling point (760 mmHg) 105 °C (221 °F) Calculated.

Flash point closed cup ASTM D 93 None

**Evaporation Rate (Butyl Acetate** 0.9 Calculated.

= 1)

Flammability (solid, gas) No

Lower explosion limitNo test data availableUpper explosion limitNo test data available

Vapor Pressure 14 mmHg at 20 °C (68 °F) Calculated.

Relative Vapor Density (air = 1) 1.3 Calculated.

Relative Density (water = 1) 1.057 at 20 °C (68 °F) / 20 °C ASTM D4052

Water solubility 100 % at 20 °C (68 °F) Visual

Partition coefficient: n- No data available

octanol/water

Auto-ignition temperatureNo test data availableDecomposition temperatureNo test data available

Kinematic Viscosity 42 - 50 cSt at 40 °C (104 °F) ASTM D 445

Explosive propertiesNo data availableOxidizing propertiesNo data availableMolecular weightNo data available

Pour point -26 °C (-15 °F) ASTM D97 Volatile Organic Compounds 0 g/L EPA Method No. 24

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 typical use temperatures.

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: No data available

**Hazardous decomposition products:** Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Aldehydes. Alcohols. Ethers. Hydrocarbons. Ketones. Organic acids. Polymer fragments.

# 11. TOXICOLOGICAL INFORMATION

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

#### **Acute toxicity**

#### **Acute oral toxicity**

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

Single dose oral LD50 has not been determined.

For the major component(s):

LD50, Rat, > 5,000 mg/kg Estimated.

## **Acute dermal toxicity**

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

The dermal LD50 has not been determined.

For the major component(s):

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

#### **Acute inhalation toxicity**

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

#### Skin corrosion/irritation

Prolonged contact may cause slight skin irritation with local redness.

Repeated contact may cause flaking and softening of skin.

## Serious eye damage/eye irritation

May cause slight eye irritation.

Corneal injury is unlikely.

Mist may cause eye irritation.

#### Sensitization

For skin sensitization:

No specific, relevant data available for assessment.

For respiratory sensitization:

No specific, relevant data available for assessment.

## **Specific Target Organ Systemic Toxicity (Single Exposure)**

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

## Specific Target Organ Systemic Toxicity (Repeated Exposure)

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

#### Carcinogenicity

No specific, relevant data available for assessment.

## **Teratogenicity**

Contains component(s) which did not cause birth defects or any other fetal effects in lab animals.

## Reproductive toxicity

Contains component(s) which did not interfere with reproduction in animal studies. Contains component(s) which did not interfere with fertility in animal studies.

## Mutagenicity

In vitro genetic toxicity studies were negative for component(s) tested. Genetic toxicity studies in animals were negative for component(s) tested.

## Aspiration Hazard

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

## COMPONENTS INFLUENCING TOXICOLOGY:

#### Propylene glycol

## Acute inhalation toxicity

Mist may cause irritation of upper respiratory tract (nose and throat). LC50, Rabbit, 2 Hour, dust/mist, 317.042 mg/l No deaths occurred at this concentration.

## Polyalkylene glycol

## Acute inhalation toxicity

As product: The LC50 has not been determined.

# Decanoic acid

#### Acute inhalation toxicity

The LC50 has not been determined.

## Potassium hydroxide

## Acute inhalation toxicity

At room temperature, exposure to vapor is minimal due to low volatility; single exposure is not likely to be hazardous. Dust may cause severe irritation of the upper respiratory tract (nose and throat) and lungs. Mist may cause severe irritation of the upper respiratory tract (nose and throat) and lungs. Effects may be delayed.

The LC50 has not been determined.

## 12. ECOLOGICAL INFORMATION

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

## **Toxicity**

## Propylene glycol

#### 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

#### Polyalkylene glycol

# 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).

#### Decanoic acid

# 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).

LC50, Oryzias latipes (Orange-red killifish), semi-static test, 96 Hour, 54 mg/l, OECD Test Guideline 203 or Equivalent

LC50, Oryzias latipes (Orange-red killifish), 48 Hour, 31 mg/l, OECD Test Guideline 203 or Equivalent

LC50, Leuciscus idus (Golden orfe), 48 Hour, 95 mg/l, OECD Test Guideline 203 or Equivalent

#### Acute toxicity to aquatic invertebrates

EC50, Daphnia magna (Water flea), 24 Hour, 65 mg/l, OECD Test Guideline 202 or Equivalent EC50, scud Gammarus sp., 48 Hour, 41 mg/l, OECD Test Guideline 202 or Equivalent

## Toxicity to bacteria

EC50, Bacteria, 24 Hour, 1,016 mg/l

#### Potassium hydroxide

#### Acute toxicity to fish

May increase pH of aquatic systems to > pH 10 which may be toxic to aquatic organisms.

## Persistence and degradability

## Propylene glycol

**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.

#### Polyalkylene glycol

**Biodegradability:** For this family of materials: Biodegradation under aerobic static laboratory conditions is moderate (BOD20 or BOD28/ThOD between 10 and 40%).

10-day Window: Fail **Biodegradation:** 8 % **Exposure time:** 28 d

Method: OECD Test Guideline 301B or Equivalent

#### **Decanoic acid**

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready

biodegradability. 10-day Window: Fail Biodegradation: 71 % Exposure time: 30 d

Method: OECD Test Guideline 301D or Equivalent

## Biological oxygen demand (BOD)

Incubation Time	BOD
5 d	9.000 %

#### Potassium hydroxide

Biodegradability: Biodegradation is not applicable.

#### Bioaccumulative potential

## Propylene glycol

**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 Estimated.

## Polyalkylene glycol

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

## **Decanoic acid**

**Bioaccumulation:** Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).

Partition coefficient: n-octanol/water(log Pow): 4.1 Measured

**Bioconcentration factor (BCF):** 756 Estimated.

## Potassium hydroxide

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

#### Mobility in soil

# Propylene 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.

Potential for mobility in soil is very high (Koc between 0 and 50).

Partition coefficient (Koc): < 1 Estimated.

## Polyalkylene glycol

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No relevant data found.

#### **Decanoic acid**

Potential for mobility in soil is slight (Koc between 2000 and 5000). **Partition coefficient (Koc):** 4000 Estimated.

#### Potassium hydroxide

No data available for assessment due to technical difficulties with testing.

## 13. DISPOSAL CONSIDERATIONS

Disposal methods: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Incinerator or other thermal destruction device.

## 14. TRANSPORT INFORMATION

DOT

Not regulated for transport

#### Classification for SEA transport (IMO-IMDG):

Not regulated for transport

Consult IMO regulations before transporting ocean bulk

Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code

## 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

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

Skin corrosion or irritation

Serious eye damage or eye irritation

# 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 Worker and Community Right-To-Know Act:

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

ComponentsCASRNPropylene glycol57-55-6

## California Prop. 65

This product contains a chemical that is at or below California Propositions 65's "safe harbor level" as determined via a risk assessment. Therefore, the chemical is not required to be listed as a Prop 65 chemical on the SDS or label.

## **United States TSCA Inventory (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.

# 16. OTHER INFORMATION

#### Other information

This product is FM Approved. Any further blending or handling (re-packaging and/or re-labeling) by the purchaser of this material requires an additional agreement with FM Approvals. Contact Dow for further information.

## **Hazard Rating System**

#### **NFPA**

Health	Flammability	Instability
1	0	0

#### Revision

Identification Number: 280480 / A001 / Issue Date: 07/24/2018 / Version: 6.0

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

Legena	
ACGIH	USA. ACGIH Threshold Limit Values (TLV)
С	Ceiling limit
TWA	8-hr TWA
US WEEL	USA. Workplace Environmental Exposure Levels (WEEL)

#### Full text of other abbreviations

AICS - Australian Inventory of Chemical Substances; 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; 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.