



SAFETY DATA SHEET

DOW CHEMICAL CANADA ULC

Product name: TERGITOL™ 15-S-9 Surfactant

Issue Date: 10/18/2019

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DOW CHEMICAL CANADA ULC 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: TERGITOL™ 15-S-9 Surfactant

Recommended use of the chemical and restrictions on use

Identified uses: Multi-purpose surfactant. 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

DOW CHEMICAL CANADA ULC
#2400, 215 - 2ND STREET S.W.
CALGARY AB T2P 1M4
CANADA

Customer Information Number:

800-258-2436
SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact (transportation emergencies only): 1-800-424-9300

Local Emergency Contact (transportation emergencies only): 1-800-424-9300

24-Hour Emergency Contact: 1-989-636-4400

2. HAZARDS IDENTIFICATION

Hazard classification

This product is hazardous under the criteria of the Hazardous Products Regulation (HPR) as implemented under the Workplace Hazardous Materials Information System (WHMIS 2015).

Acute toxicity - Category 4 - Oral

Acute toxicity - Category 4 - Inhalation

Skin irritation - Category 2

Serious eye damage - Category 1

Label elements

Hazard pictograms



Signal word: **DANGER!**

Hazards

Harmful if swallowed or if inhaled.

Causes skin irritation.

Causes serious eye damage.

Precautionary statements

Prevention

Avoid breathing dust, fume, gas, mist, vapours and/or spray.

Wash skin thoroughly after handling.

Do not eat, drink or smoke when using this product.

Use only outdoors or in a well-ventilated area.

Wear protective gloves/ eye protection/ face protection.

Response

IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.

IF ON SKIN: Wash with plenty of water.

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER and/or doctor if you feel unwell.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.

If skin irritation occurs: Get medical advice and/or attention.

Take off contaminated clothing and wash it before reuse.

Disposal

Dispose of contents and/or container to an approved waste disposal plant.

Other hazards

Slipping hazard.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: Surfactant

This product is a substance.

Component	CASRN	Concentration (w/w)
Alcohols, C12-14-secondary, ethoxylated	84133-50-6	> 97.0 %
Poly(ethylene oxide)	25322-68-3	< 3.0 %

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; if effects occur, consult a physician.

Skin contact: Wash off with plenty of water. Seek first aid or medical attention as needed. If molten material comes in contact with the skin, do not apply ice but cool under ice water or running stream of water. DO NOT attempt to remove the material from skin. Removal could result in severe tissue damage. Seek medical attention immediately. Suitable emergency safety shower facility should be immediately available.

Eye contact: Wash immediately and continuously with flowing water for at least 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. Obtain prompt medical consultation, preferably from an ophthalmologist. Suitable emergency eye wash facility should be immediately available.

Ingestion: If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel. Seek medical attention immediately. Never give anything by mouth to an unconscious person.

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: Chemical eye burns may require extended irrigation. Obtain prompt consultation, preferably from an ophthalmologist. If burn is present, treat as any thermal burn, after decontamination. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Skin contact may aggravate preexisting dermatitis.

5. FIREFIGHTING MEASURES

Extinguishing media

Suitable extinguishing media: Water fog or fine spray.. Dry chemical fire extinguishers.. Carbon dioxide fire extinguishers.. Foam..

Unsuitable extinguishing media: No data available

Special hazards arising from the substance or mixture

Hazardous combustion products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating.. Combustion products may include and are not limited to:. Carbon monoxide.. Carbon dioxide.. No hazardous combustion products are known.

Unusual Fire and Explosion Hazards: Violent steam generation or eruption may occur upon application of direct water stream to hot liquids..

Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry.. Soak thoroughly with water to cool and prevent re-ignition.. If material is molten, do not apply direct waterstream. Use fine water spray or foam.. Cool surroundings with water to localize fire zone..

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: Evacuate area. Refer to section 7, Handling, for additional precautionary measures. Only trained and properly protected personnel must be involved in clean-up operations. Keep upwind of spill. Ventilate area of leak or spill. Spilled material may cause a slipping hazard. 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. Absorb with materials such as: Sand. Dirt. Collect in suitable and properly labeled containers. Do not use water for cleanup.

7. HANDLING AND STORAGE

Precautions for safe handling: Do not get in eyes. Avoid contact with eyes, skin, and clothing. Avoid breathing vapor. Do not swallow. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Conditions for safe storage: No specific requirements. Additional storage and handling information on this product may be obtained by calling your sales or customer service contact. The shelf life given is for unopened containers stored under moderate temperature conditions.

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.

Consult local authorities for recommended exposure limits.

Component	Regulation	Type of listing	Value
Poly(ethylene oxide)	US WEEL	TWA aerosol	10 mg/m3

Exposure controls

Engineering controls: Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations.

Individual protection measures

Eye/face protection: Use chemical goggles.

Skin protection

Hand protection: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Butyl rubber. Chlorinated polyethylene. Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl chloride ("PVC" or "vinyl"). Viton. Examples of acceptable glove barrier materials include: 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: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

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, use an approved respirator. Selection of air-purifying or positive-pressure supplied-air will depend on the specific operation and the potential airborne concentration of the material. For emergency conditions, use an approved positive-pressure self-contained breathing apparatus.

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

Yellow

Odor

Mild

Odor Threshold

No test data available

pH

7.1 *Calculated.* 1% aqueous solution.

Melting point/range	Not applicable to liquids
Freezing point	See Pour Point
Boiling point (760 mmHg)	> 250 °C at 760 mmHg <i>Calculated</i> . Decomposes before boiling
Flash point	closed cup 193 °C <i>ASTM D 93</i> open cup 243 °C <i>ASTM D92</i>
Evaporation Rate (Butyl Acetate = 1)	<0.01 <i>Calculated</i> .
Flammability (solid, gas)	Not applicable to liquids
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	< 0.01 mmHg at 20 °C <i>Calculated</i> .
Relative Vapor Density (air = 1)	>1 <i>Calculated</i> .
Relative Density (water = 1)	1.006 at 60 °C / 20 °C <i>Calculated</i> .
Water solubility	<i>Visual</i> partly soluble
Partition coefficient: n-octanol/water	log Pow: 2.72 <i>Estimated</i> .
Auto-ignition temperature	No test data available
Decomposition temperature	No test data available
Kinematic Viscosity	59.6 cSt <i>Calculated</i> .
Explosive properties	No data available
Oxidizing properties	No data available
Molecular weight	596 g/mol <i>Calculated</i> .
Pour point	9 °C <i>Calculated</i> .

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: Exposure to elevated temperatures can cause product to decompose.

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 is 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 oral toxicity**

Moderate toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause serious injury, even death.

Based on product testing:

LD50, Rat, > 412 mg/kg

Information for components:**Alcohols, C12-14-secondary, ethoxylated**

LD50, Rat, > 412 mg/kg

Poly(ethylene oxide)

Typical for this family of materials. LD50, Rat, > 10,000 mg/kg Estimated.

Acute dermal toxicity

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

Based on product testing:

LD50, Rat, male and female, > 14,000 mg/kg

Information for components:**Alcohols, C12-14-secondary, ethoxylated**

LD50, Rat, male and female, > 14,000 mg/kg

Poly(ethylene oxide)

Typical for this family of materials. LD50, Rabbit, > 20,000 mg/kg

Acute inhalation toxicity

At room temperature, exposure to vapor is minimal due to low volatility. Vapor from heated material may cause respiratory irritation and other effects. Excessive exposure may cause lung injury.

Based on product testing:

LC50, Rat, male and female, 4 Hour, dust/mist, 1.06 mg/l

Information for components:**Alcohols, C12-14-secondary, ethoxylated**

LC50, Rat, male and female, 4 Hour, dust/mist, 1.06 mg/l

Poly(ethylene oxide)

Typical for this family of materials. LC50, Rat, 6 Hour, dust/mist, > 2.5 mg/l No deaths occurred at this concentration.

Skin corrosion/irritation

Based on product testing:

Brief contact may cause moderate skin irritation with local redness.

May cause drying and flaking of the skin.

May cause itching.

Information for components:

Alcohols, C12-14-secondary, ethoxylated

Brief contact may cause moderate skin irritation with local redness.

May cause drying and flaking of the skin.

May cause itching.

Poly(ethylene oxide)

Prolonged exposure not likely to cause significant skin irritation.

May cause more severe response if skin is abraded (scratched or cut).

Serious eye damage/eye irritation

Based on product testing:

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

Information for components:

Alcohols, C12-14-secondary, ethoxylated

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

Poly(ethylene oxide)

May cause slight temporary eye irritation.

Corneal injury is unlikely.

Sensitization

Did not cause allergic skin reactions when tested in humans.

For respiratory sensitization:

No relevant data found.

Information for components:

Alcohols, C12-14-secondary, ethoxylated

Did not cause allergic skin reactions when tested in humans.

For respiratory sensitization:

No relevant data found.

Poly(ethylene oxide)

For this family of materials:

Did not cause allergic skin reactions when tested in humans.

For this family of materials, sensitization studies done in guinea pigs have been negative.

For respiratory sensitization:

No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)

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

Information for components:

Alcohols, C12-14-secondary, ethoxylated

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

Poly(ethylene oxide)

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

Aspiration Hazard

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

Information for components:

Alcohols, C12-14-secondary, ethoxylated

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

Poly(ethylene oxide)

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)

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

Information for components:

Alcohols, C12-14-secondary, ethoxylated

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

Poly(ethylene oxide)

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

The use of topical applications containing this material may not be appropriate in severely burned patients.

This product should not be used in patients with kidney disease; these effects would not result from normal industrial handling.

Carcinogenicity

No relevant data found.

Information for components:

Alcohols, C12-14-secondary, ethoxylated

No relevant data found.

Poly(ethylene oxide)

Polyethylene glycols did not cause cancer in long-term animal studies.

Teratogenicity

No relevant data found.

Information for components:

Alcohols, C12-14-secondary, ethoxylated

No relevant data found.

Poly(ethylene oxide)

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

Reproductive toxicity

For this family of materials: In animal studies, did not interfere with reproduction. In animal studies, did not interfere with fertility.

Information for components:

Alcohols, C12-14-secondary, ethoxylated

No relevant data found.

Poly(ethylene oxide)

In animal studies, did not interfere with reproduction.

Mutagenicity

For this family of materials: In vitro genetic toxicity studies were negative.

Information for components:

Alcohols, C12-14-secondary, ethoxylated

For this family of materials: In vitro genetic toxicity studies were negative.

Poly(ethylene oxide)

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 is available.

Toxicity

Acute toxicity to fish

Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested).

LC50, Pimephales promelas (fathead minnow), static test, 96 Hour, 3.2 - 3.6 mg/l

Acute toxicity to aquatic invertebrates

EC50, Daphnia magna (Water flea), static test, 48 Hour, 7.3 mg/l

Toxicity to bacteria

EC50, Bacteria, 16 Hour, > 1,000 mg/l

Persistence and degradability

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

10-day Window: Not applicable

Biodegradation: > 60 %

Exposure time: 28 d

Method: OECD Test Guideline 301F or Equivalent

Theoretical Oxygen Demand: 2.10 mg/mg

Chemical Oxygen Demand: 2.07 mg/mg

Bioaccumulative potential

Partition coefficient: n-octanol/water(log Pow): 2.72 Estimated.

Bioconcentration factor (BCF): 29 Estimated.

Mobility in soil

No specific, relevant data available for assessment.

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

TDG

Not regulated for transport

Classification for SEA transport (IMO-IMDG):

Not regulated for transport

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

Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Not regulated for transport

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

15. REGULATORY INFORMATION

Canadian 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.

16. OTHER INFORMATION

Product Literature

Additional information on this product may be obtained by calling your sales or customer service contact. Ask for a product brochure. Additional information on this and other products may be obtained by visiting our web page.

Hazard Rating System

NFPA

Health	Flammability	Instability
3	0	0

Revision

Identification Number: 166413 / A208 / Issue Date: 10/18/2019 / Version: 13.0

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

Legend

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.

DOW CHEMICAL CANADA ULC 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.

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