



SAFETY DATA SHEET

THE DOW CHEMICAL COMPANY

Product name: ECOSURF™ LFE-635 Surfactant

Issue Date: 08/07/2025

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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: ECOSURF™ LFE-635 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

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

Customer Information Number:

800-258-2436
SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER

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

Local Emergency Contact: 800-424-9300

2. HAZARDS IDENTIFICATION

Hazard classification

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

Eye irritation - Category 2A

Label elements

Hazard pictograms



Signal word: **WARNING!**

Hazards

H319 Causes serious eye irritation.

Precautionary statements**Prevention**

P264 Wash skin thoroughly after handling.

P280 Wear eye protection/ face protection.

Response

P305 + P351 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

+ P338
P337 + P313 If eye irritation persists: Get medical advice/ attention.

Other hazards

Slipping hazard.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: Oxirane, methyl-, polymer with oxirane, mono(2-ethylhexyl) ether

This product is a substance.

Component	CASRN	Concentration
Ethoxylated propoxylated 2-ethyl-1-hexanol	64366-70-7	> 99.0 %

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 and keep comfortable for breathing; consult a physician.

Skin contact: Wash off with plenty of water. Suitable emergency safety shower facility should be available in work area.

Eye contact: Immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes, then continue flushing eyes for at least 15 minutes. Obtain medical attention without delay, 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.

Most important symptoms and effects, both acute and delayed:

Causes serious eye irritation.

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. 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.. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective..

Unsuitable extinguishing media: Do not use direct water stream.. May spread fire..

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..

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.. Burning liquids may be extinguished by dilution with water.. Do not use direct water stream. May spread fire.. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage..

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

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:

Isolate area. Keep unnecessary and unprotected personnel from entering the area. Spilled material may cause a slipping hazard. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. Refer to section 7, Handling, for additional precautionary measures.

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

Methods and materials for containment and cleaning up: 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. 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.

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
36 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.

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 chemical goggles.

Skin protection

Hand protection: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Butyl rubber. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). 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: Under intended handling conditions, no respiratory protection should be needed.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state	liquid
Color	Colorless to yellow
Odor	mild
Odor Threshold	No data available
pH	5.0 - 7.5 <i>ASTM E70</i>
Melting point/ range	Not applicable to liquids
Freezing point	See Pour Point
Boiling point (760 mmHg)	decomposes prior to boiling
Flash point	closed cup 263 °C (505 °F) <i>ASTM D 93</i>
Evaporation Rate (Butyl Acetate = 1)	No test data available
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 <i>Estimated.</i>
Relative Vapor Density (air = 1)	> 1 <i>Estimated.</i>
Relative Density (water = 1)	1.004 at 20 °C (68 °F) / 20 °C <i>Calculated.</i>
Water solubility	soluble in cold water
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	No test data available
Decomposition temperature	No test data available
Kinematic Viscosity	44 cSt at 40 °C (104 °F)
Explosive properties	No data available
Oxidizing properties	No data available
Molecular weight	No data available
Pour point	-42 °C (-44 °F) <i>ASTM D97</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 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:

Low 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 injury.

Typical for this family of materials.

LD50, Rat, female, > 2,000 mg/kg

Information for components:

Ethoxylated propoxylated 2-ethyl-1-hexanol

Typical for this family of materials. LD50, Rat, female, > 2,000 mg/kg

Acute dermal toxicity

Information for the Product:

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

Typical for this family of materials.

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

Information for components:

Ethoxylated propoxylated 2-ethyl-1-hexanol

Typical for this family of materials. LD50, Rat, > 2,000 mg/kg 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; single exposure is not likely to be hazardous. For respiratory irritation and narcotic effects: No relevant data found.

As product: The LC50 has not been determined.

Information for components:

Ethoxylated propoxylated 2-ethyl-1-hexanol

The LC50 has not been determined.

Skin corrosion/irritation

Not classified based on available information.

Information for the Product:

For similar material(s):

Brief contact may cause slight skin irritation with local redness.

May cause drying and flaking of the skin.

Information for components:

Ethoxylated propoxylated 2-ethyl-1-hexanol

Brief contact may cause slight skin irritation with local redness.

May cause drying and flaking of the skin.

Serious eye damage/eye irritation

Causes serious eye irritation.

Information for the Product:

Based on product testing:

May cause moderate eye irritation.

May cause moderate corneal injury.

Information for components:

Ethoxylated propoxylated 2-ethyl-1-hexanol

May cause moderate eye irritation.

May cause moderate corneal injury.

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:

For this family of materials:

Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:

No specific, relevant data available for assessment.

Information for components:

Ethoxylated propoxylated 2-ethyl-1-hexanol

For this family of materials:

Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:

Relevant data not available.

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:

Ethoxylated propoxylated 2-ethyl-1-hexanol

Available data are inadequate to determine single exposure specific target organ toxicity.

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:

Ethoxylated propoxylated 2-ethyl-1-hexanol

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)

Not classified based on available information.

Information for the Product:

Product test data not available.

Information for components:

Ethoxylated propoxylated 2-ethyl-1-hexanol

No relevant data found.

Carcinogenicity

Not classified based on available information.

Information for the Product:

Product test data not available.

Information for components:

Ethoxylated propoxylated 2-ethyl-1-hexanol

No relevant data found.

Teratogenicity

Not classified based on available information.

Information for the Product:

Product test data not available.

Information for components:

Ethoxylated propoxylated 2-ethyl-1-hexanol

No relevant data found.

Reproductive toxicity

Not classified based on available information.

Information for the Product:

Product test data not available.

Information for components:

Ethoxylated propoxylated 2-ethyl-1-hexanol

No relevant data found.

Mutagenicity

Not classified based on available information.

Information for the Product:

One material tested in this family was negative in the Ames test.

Information for components:

Ethoxylated propoxylated 2-ethyl-1-hexanol

One material tested in this family was negative in the Ames test.

12. ECOLOGICAL INFORMATION

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

Toxicity

Information for the Product:

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 this family of materials:

LC50, Oncorhynchus mykiss (rainbow trout), static test, 96 Hour, 32 mg/l

Acute toxicity to aquatic invertebrates

As product:

EC50, Daphnia magna (Water flea), static test, 48 Hour, > 100 mg/l

Acute toxicity to algae/aquatic plants

For this family of materials:

ErC50, Raphidocelis subcapitata (freshwater green alga), static test, 72 Hour, Growth rate, 31.9 mg/l

For this family of materials:

NOEC, Raphidocelis subcapitata (freshwater green alga), static test, 72 Hour, Growth rate, 6.25 mg/l

Information for components:

Ethoxylated propoxylated 2-ethyl-1-hexanol

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 this family of materials:

LC50, Oncorhynchus mykiss (rainbow trout), static test, 96 Hour, 32 mg/l

Acute toxicity to aquatic invertebrates

EC50, Daphnia magna (Water flea), static test, 48 Hour, > 100 mg/l

Acute toxicity to algae/aquatic plants

For this family of materials:

ErC50, Raphidocelis subcapitata (freshwater green alga), static test, 72 Hour, Growth rate, 31.9 mg/l

For this family of materials:

NOEC, Raphidocelis subcapitata (freshwater green alga), static test, 72 Hour, Growth rate, 6.25 mg/l

Persistence and degradability

Information for the Product:

Biodegradability: For this family of materials: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

10-day Window: Not applicable For this family of materials:

Biodegradation: > 60 %

Exposure time: 28 d

Method: OECD Test Guideline 301F

Information for components:**Ethoxylated propoxylated 2-ethyl-1-hexanol**

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

For this family of materials: 10-day Window: Not applicable

Biodegradation: > 60 %

Exposure time: 28 d

Bioaccumulative potential**Information for the Product:**

Bioaccumulation: No relevant data found.

Bioconcentration factor (BCF): 1.56 Fish Estimated.

Information for components:**Ethoxylated propoxylated 2-ethyl-1-hexanol**

Bioaccumulation: No relevant data found.

Mobility in soil**Information for the Product:**

Product test data not available.

Information for components:**Ethoxylated propoxylated 2-ethyl-1-hexanol**

No relevant data found.

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 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: Incinerator or other thermal destruction device. Waste water treatment system.

14. TRANSPORT INFORMATION

DOT

Not regulated for transport

Classification for SEA transport (IMO-IMDG):

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

Not regulated for transport

Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Not regulated for transport

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

15. REGULATORY INFORMATION

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

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:

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

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

Hazard Rating System**NFPA**

Health	Flammability	Instability
2	1	0

Revision

Identification Number: 99119599 / A001 / Issue Date: 08/07/2025 / Version: 7.0

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.

Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonised 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 Organisation; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardisation; 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 - Organisation for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of

Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Information Source and References

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

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

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