



SAFETY DATA SHEET

THE DOW CHEMICAL COMPANY

Product name: UCON™ Calender Lubricant 35

Issue Date: 10/27/2021

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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: UCON™ Calender Lubricant 35

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
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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)

Acute toxicity - Category 2 - Inhalation

Skin sensitisation - Category 1

Specific target organ toxicity - single exposure - Category 3

Specific target organ toxicity - repeated exposure - Category 1 - Inhalation

Specific target organ toxicity - repeated exposure - Category 2

Label elements
Hazard pictogramsSignal word: **DANGER!****Hazards**

May cause an allergic skin reaction.

Fatal if inhaled.

May cause respiratory irritation.

Causes damage to organs (Lungs) through prolonged or repeated exposure if inhaled.

May cause damage to organs (Blood) through prolonged or repeated exposure.

Precautionary statements**Prevention**

Do not breathe mist or vapours.

Wash skin thoroughly after handling.

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

Use only outdoors or in a well-ventilated area.

Contaminated work clothing must not be allowed out of the workplace.

Wear protective gloves.

In case of inadequate ventilation wear respiratory protection.

Response

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

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER and/or doctor.

Get medical advice/ attention if you feel unwell.

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

Wash contaminated clothing before reuse.

Storage

Store in a well-ventilated place. Keep container tightly closed.

Store locked up.

Disposal

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

Other hazards

No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

Component	CASRN	Concentration
Polyalkylene glycol monobutyl ether	9038-95-3	> 55.0 - < 60.0 %
Polyalkylene glycol monobutyl ether	9038-95-3	> 35.0 - < 40.0 %
2,5-Furandione, dihydro-3-(tetrapropenyl)-	26544-38-7	< 3.0 %
N-phenyl-alpha-naphthylamine	90-30-2	<= 2.4 %

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. If not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

Skin contact: Remove material from skin immediately by washing with soap and plenty of water. Remove contaminated clothing and shoes while washing. Seek medical attention if irritation or rash occurs. Wash clothing before reuse. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands.

Eye contact: Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

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

Most important symptoms and effects, both acute and delayed:

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed

Notes to physician: Maintain adequate ventilation and oxygenation of the patient. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

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

Unusual Fire and Explosion Hazards: Container may rupture from gas generation in a fire situation.. 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.. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed.. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles.. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container.. Do not use direct water stream. May spread fire.. Move container from fire area if this is possible without hazard.. 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).. 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, see Section 8 of the safety data sheet..

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Keep upwind of spill. 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 prolonged or repeated contact with skin. Wash thoroughly after handling. Do not breathe mist. Use only with adequate ventilation. Do not use sodium nitrite or other nitrosating agents in formulations containing this product. Suspected cancer-causing nitrosamines could be formed. 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.

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 safety glasses (with side shields).

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: 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	Brown
Odor	Mild
Odor Threshold	No test data available
pH	No test data available
Melting point/range	No test data available
Freezing point	See Pour Point
Boiling point (760 mmHg)	> 200 °C (> 392 °F) <i>Calculated.</i>
Flash point	closed cup 216 °C (421 °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 at 20 °C (68 °F) <i>ASTM E1719</i>
Relative Vapor Density (air = 1)	>10 <i>Calculated.</i>
Relative Density (water = 1)	1.058 at 20 °C (68 °F) / 20 °C <i>Calculated.</i>
Water solubility	<i>Visual</i> soluble
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	No test data available
Decomposition temperature	No test data available
Kinematic Viscosity	728 - 842 cSt at 37.8 °C (100.0 °F) <i>ASTM D 445</i>
Explosive properties	No data available
Oxidizing properties	No data available
Molecular weight	No data available
Pour point	-33 °C (-27 °F) <i>ASTM D97</i>
Volatile Organic Compounds	0.00 g/L <i>EPA Method No. 24</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. Generation of gas during decomposition can cause pressure in closed systems.

Incompatible materials: Avoid contact with: Strong acids. Strong bases. Strong oxidizers.

Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials.. 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.

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

Information for the Product:

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

As product: Single dose oral LD50 has not been determined.

Based on information for component(s):
LD50, Rat, > 5,000 mg/kg Estimated.

Information for components:

Polyalkylene glycol monobutyl ether

LD50, Rat, > 45,000 mg/kg

Polyalkylene glycol monobutyl ether

LD50, Rat, > 21,753 mg/kg

2,5-Furandione, dihydro-3-(tetrapropenyl)-

LD50, Rat, 1,875 mg/kg

N-phenyl-alpha-naphthylamine

LD50, Rat, 1,625 mg/kg

Acute dermal toxicity**Information for the Product:**

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

As product: The dermal LD50 has not been determined.

Based on information for component(s):
LD50, Rabbit, > 5,000 mg/kg Estimated.

Information for components:**Polyalkylene glycol monobutyl ether**

LD50, Rabbit, > 21,140 mg/kg

Polyalkylene glycol monobutyl ether

LD50, Rabbit, > 21,120 mg/kg

2,5-Furandione, dihydro-3-(tetrapropenyl)-

LD50, Rabbit, 2,006 mg/kg

N-phenyl-alpha-naphthylamine

LD50, Rabbit, > 5,000 mg/kg

Acute inhalation toxicity**Information for the Product:**

At room temperature, exposure to vapor is minimal due to low volatility. Prolonged exposure to aerosol/mist may cause serious adverse effects, even death. This product should not be used in aerosol applications.

As product: The LC50 has not been determined.

Based on information for component(s):
LC50, Rat, 4 Hour, Aerosol, 0.106 - 0.26 mg/l Estimated.

Information for components:**Polyalkylene glycol monobutyl ether**

LC50, Rat, 4 Hour, dust/mist, 0.106 - 0.26 mg/l

Polyalkylene glycol monobutyl ether

LC50, Rat, 4 Hour, dust/mist, 0.33 mg/l

2,5-Furandione, dihydro-3-(tetrapropenyl)-

For similar material(s): LC50, Rat, male and female, 4 Hour, dust/mist, 5.3 mg/l

N-phenyl-alpha-naphthylamine

Rat, 8 Hour, vapour, No deaths occurred following exposure to a saturated atmosphere.

Skin corrosion/irritation

Information for the Product:

Based on information for component(s):

Prolonged contact may cause slight skin irritation with local redness.

Information for components:

Polyalkylene glycol monobutyl ether

Prolonged contact may cause slight skin irritation with local redness.

Polyalkylene glycol monobutyl ether

Brief contact is essentially nonirritating to skin.

2,5-Furandione, dihydro-3-(tetrapropenyl)-

Prolonged contact may cause slight skin irritation with local redness.

Repeated contact may cause slight skin irritation with local redness.

N-phenyl-alpha-naphthylamine

Brief contact is essentially nonirritating to skin.

Serious eye damage/eye irritation

Information for the Product:

Based on information for component(s):

Essentially nonirritating to eyes.

Corneal injury is unlikely.

Information for components:

Polyalkylene glycol monobutyl ether

Essentially nonirritating to eyes.

Corneal injury is unlikely.

Polyalkylene glycol monobutyl ether

Essentially nonirritating to eyes.

2,5-Furandione, dihydro-3-(tetrapropenyl)-

May cause moderate eye irritation.

Corneal injury is unlikely.

N-phenyl-alpha-naphthylamine

May cause slight temporary eye irritation.

Corneal injury is unlikely.

Sensitization

Information for the Product:

For skin sensitization:

Contains component(s) which have caused allergic skin sensitization in guinea pigs.

A component in this mixture has caused allergic skin reactions in humans.

For respiratory sensitization:
No specific, relevant data available for assessment.

Information for components:

Polyalkylene glycol monobutyl ether

A similar material did not cause allergic skin reactions when tested in humans.

For respiratory sensitization:
No relevant data found.

Polyalkylene glycol monobutyl ether

For this family of materials:
Did not cause allergic skin reactions when tested in humans.

For respiratory sensitization:
No relevant data found.

2,5-Furandione, dihydro-3-(tetrapropenyl)-

For similar material(s):
Has caused allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

N-phenyl-alpha-naphthylamine

Has caused allergic skin reactions in humans.
Has caused allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)

Information for the Product:

Contains component(s) which are classified as specific target organ toxicant, single exposure, category 3.

Information for components:

Polyalkylene glycol monobutyl ether

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

Polyalkylene glycol monobutyl ether

May cause respiratory irritation.
Route of Exposure: Inhalation
Target Organs: Respiratory Tract

2,5-Furandione, dihydro-3-(tetrapropenyl)-

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

N-phenyl-alpha-naphthylamine

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

Aspiration Hazard**Information for the Product:**

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

Information for components:**Polyalkylene glycol monobutyl ether**

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

Polyalkylene glycol monobutyl ether

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

2,5-Furandione, dihydro-3-(tetrapropenyl)-

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

N-phenyl-alpha-naphthylamine

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)**Information for the Product:**

Based on information for component(s):

In animals, effects have been reported on the following organs after exposure to aerosols:

Lung.

Contains component(s) which have been reported to cause effects on the following organs in animals:

Blood.

Information for components:**Polyalkylene glycol monobutyl ether**

In animals, effects have been reported on the following organs:

Lung.

Polyalkylene glycol monobutyl ether

Exposure to high concentrations of mist and/or aerosol may be associated with delayed lung damage.

2,5-Furandione, dihydro-3-(tetrapropenyl)-

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

N-phenyl-alpha-naphthylamine

In animals, effects have been reported on the following organs:

Blood.

Carcinogenicity

Information for the Product:

Contains component(s) which did not cause cancer in laboratory animals.

Information for components:

Polyalkylene glycol monobutyl ether

Did not cause cancer in laboratory animals.

Polyalkylene glycol monobutyl ether

No relevant data found.

2,5-Furandione, dihydro-3-(tetrapropenyl)-

No relevant data found.

N-phenyl-alpha-naphthylamine

Did not cause cancer in laboratory animals.

Teratogenicity

Information for the Product:

No specific, relevant data available for assessment.

Information for components:

Polyalkylene glycol monobutyl ether

No relevant data found.

Polyalkylene glycol monobutyl ether

No relevant data found.

2,5-Furandione, dihydro-3-(tetrapropenyl)-

For similar material(s): Did not cause birth defects or any other fetal effects in laboratory animals.

N-phenyl-alpha-naphthylamine

For similar material(s): Did not cause birth defects or any other fetal effects in laboratory animals.

Reproductive toxicity

Information for the Product:

No specific, relevant data available for assessment.

Information for components:

Polyalkylene glycol monobutyl ether

No relevant data found.

Polyalkylene glycol monobutyl ether

No relevant data found.

2,5-Furandione, dihydro-3-(tetrapropenyl)-

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

N-phenyl-alpha-naphthylamine

In animal studies, a similar material has been shown not to interfere with reproduction.

Mutagenicity**Information for the Product:**

Contains component(s) which were negative in some in vitro genetic toxicity studies and positive in others. Contains component(s) which were negative in animal genetic toxicity studies.

Information for components:**Polyalkylene glycol monobutyl ether**

No relevant data found.

Polyalkylene glycol monobutyl ether

For similar material(s): In vitro genetic toxicity studies were negative in some cases and positive in other cases. Animal genetic toxicity studies were negative.

2,5-Furandione, dihydro-3-(tetrapropenyl)-

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

N-phenyl-alpha-naphthylamine

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**Polyalkylene glycol monobutyl ether****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, Pimephales promelas (fathead minnow), static test, 96 Hour, 3,170 - 11,900 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates

EC50, Daphnia magna (Water flea), static test, 48 Hour, 17,000 - 19,000 mg/l, OECD Test Guideline 202 or Equivalent

Toxicity to bacteria

EC50, Bacteria, static test, 16 Hour, Growth inhibition, 10,000 mg/l

Polyalkylene glycol monobutyl ether**Acute toxicity to fish**

For this family of materials:

Material is practically non-toxic to fish on an acute basis (LC50 > 100 mg/L).

For this family of materials:

LL50, *Poecilia reticulata* (guppy), static test, 96 Hour, > 100 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates

For this family of materials:

EL50, *Daphnia magna* (Water flea), Static, 48 Hour, > 100 mg/l, OECD Test Guideline 202 or Equivalent

2,5-Furandione, dihydro-3-(tetrapropenyl)-

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), semi-static test, 96 Hour, > 100 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates

For similar material(s):

EC50, *Daphnia dubia* (water flea), 48 Hour, > 100 mg/l, OECD Test Guideline 202

Acute toxicity to algae/aquatic plants

EC50, *Pseudokirchneriella subcapitata* (green algae), static test, 96 Hour, Growth rate, 110 mg/l

Toxicity to bacteria

EC50, activated sludge, static test, 3 Hour, Respiration rates., 800 mg/l, OECD Test Guideline 209

N-phenyl-alpha-naphthylamine

Acute toxicity to fish

Material is highly toxic to aquatic organisms on an acute basis (LC50/EC50 between 0.1 and 1 mg/L in the most sensitive species tested).

LC50, *Oncorhynchus mykiss* (rainbow trout), semi-static test, 96 Hour, 0.44 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates

LC50, *Daphnia magna* (Water flea), static test, 48 Hour, 0.3 mg/l, OECD Test Guideline 202 or Equivalent

Toxicity to bacteria

EC50, activated sludge, static test, 3 Hour, Respiration rates., > 10,000 mg/l

Chronic toxicity to aquatic invertebrates

NOEC, *Daphnia magna* (Water flea), 21 d, 0.032 mg/l

Persistence and degradability

Polyalkylene glycol monobutyl ether

Biodegradability: Biodegradation under aerobic static laboratory conditions is moderate (BOD20 or BOD28/ThOD between 10 and 40%).

10-day Window: Fail

Biodegradation: 7 %

Exposure time: 28 d

Method: OECD Test Guideline 301B or Equivalent

Chemical Oxygen Demand: 1.90 mg/mg

Biological oxygen demand (BOD)

Incubation Time	BOD
5 d	6.000 %
10 d	13.000 %
20 d	24.000 %

Polyalkylene glycol monobutyl ether

Biodegradability: Based on information for a similar material: Material has inherent, primary biodegradability according to OECD test (s) guidelines (reaches > 20% biodegradation in OECD test(s)).

2,5-Furandione, dihydro-3-(tetrapropenyl)-

Biodegradability: Biodegradation under aerobic static laboratory conditions is low (BOD20 or BOD28/ThOD between 2.5 and 10%).

10-day Window: Fail

Biodegradation: 9.9 %

Exposure time: 28 d

Method: OECD Test Guideline 301D

Photodegradation

Sensitization: OH radicals

Atmospheric half-life: 1.7 - 1.9 Hour

Method: Estimated.

Photodegradation

Sensitization: Ozone.

Atmospheric half-life: 1.4 - 2.1 Hour

Method: Estimated.

N-phenyl-alpha-naphthylamine

Biodegradability: Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.

10-day Window: Not applicable

Biodegradation: 0 %

Exposure time: 28 d

Method: OECD Test Guideline 301C or Equivalent

10-day Window: Not applicable

Biodegradation: 0 %

Exposure time: 14 d

Method: OECD Test Guideline 301C or Equivalent

Theoretical Oxygen Demand: 2.99 mg/mg

Biological oxygen demand (BOD)

Incubation	BOD
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Time	
5 d	< 5 %
10 d	< 5 %
20 d	< 5 %

Photodegradation**Test Type:** Half-life (indirect photolysis)**Sensitization:** OH radicals**Atmospheric half-life:** 0.031 d**Method:** Estimated.**Bioaccumulative potential****Polyalkylene glycol monobutyl ether****Bioaccumulation:** For this family of materials: No bioconcentration is expected because of the relatively high molecular weight (MW greater than 1000).**Polyalkylene glycol monobutyl ether****Bioaccumulation:** For this family of materials: No bioconcentration is expected because of the relatively high molecular weight (MW greater than 1000).**2,5-Furandione, dihydro-3-(tetrapropenyl)-****Bioaccumulation:** Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).**Partition coefficient: n-octanol/water(log Pow):** > 4.39 OECD Test Guideline 107**N-phenyl-alpha-naphthylamine****Bioaccumulation:** Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).**Partition coefficient: n-octanol/water(log Pow):** 4.20 Measured**Bioconcentration factor (BCF):** 427 - 2,730 Fish Measured**Mobility in soil****Polyalkylene glycol monobutyl ether**

No relevant data found.

Polyalkylene glycol monobutyl ether

No relevant data found.

2,5-Furandione, dihydro-3-(tetrapropenyl)-**Partition coefficient (Koc):** 825 Measured**N-phenyl-alpha-naphthylamine****Partition coefficient (Koc):** 21000 Estimated.

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):

**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

Acute toxicity (any route of exposure)

Respiratory or skin sensitisation

Specific target organ toxicity (single or repeated exposure)

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

WARNING: This product can expose you to chemicals including Aniline, Naphthalenamine, Naphthylamine, which is/are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

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
3	1	0

Revision

Identification Number: 167491 / A001 / Issue Date: 10/27/2021 / Version: 9.0

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

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 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; 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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