SAFETY DATA SHEET
DOW CHEMICAL THAILAND LTD

Product name: DOWSIL™ CE-8411 Smooth Plus Emulsion **Issue Date:** 17.12.2021
Print Date: 18.12.2021

DOW CHEMICAL THAILAND LTD 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. PRODUCT AND COMPANY IDENTIFICATION

Product name: DOWSIL™ CE-8411 Smooth Plus Emulsion

Recommended use of the chemical and restrictions on use
Identified uses: Cosmetics

COMPANY IDENTIFICATION
DOW CHEMICAL THAILAND LTD
75,
SOI SAENGCHAN-RUBIA, SUKHUMVIT ROAD,
PHRA KHANONG, KHLONG TOEY,
BANGKOK 10110
THAILAND

Customer Information Number: (66)2-3657000
SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER
24-Hour Emergency Contact: (66)38-925-400
Local Emergency Contact: 038-925-400

2. HAZARDS IDENTIFICATION

GHS Classification
Skin corrosion/irritation - Category 2
Serious eye damage/eye irritation - Category 2A
Short-term (acute) aquatic hazard - Category 2
Long-term (chronic) aquatic hazard - Category 3

GHS label elements
Hazard pictograms

Signal word: **WARNING!**

Hazard statements
Causes skin irritation.
Causes serious eye irritation.
Toxic to aquatic life.
Harmful to aquatic life with long lasting effects.

Precautionary statements

Prevention
Wash skin thoroughly after handling.
Avoid release to the environment.
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.
Take off contaminated clothing and wash before reuse.

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
Silicone-Polyglycol Polymer, Alkylamine-terminated	1253692-80-6	>= 48.0 - <= 57.0 %
Poly(oxyethylene) 20 sorbitan monolaurate	9005-64-5	>= 1.5 - <= 3.5 %
2-Butyloctanol	3913-02-8	<= 3.0 %
Lactic acid	50-21-5	>= 0.1 - <= 1.4 %
Octamethyl Cyclotetrasiloxane	556-67-2	>= 0.02 - <= 0.47 %

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

Most important symptoms and effects, both acute and delayed:
Causes skin irritation. 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: Alcohol-resistant foam. Carbon dioxide (CO2). Dry chemical. Water spray.

Unsuitable extinguishing media: None known..

Special hazards arising from the substance or mixture

Hazardous combustion products: Silicon oxides. Nitrogen oxides (NOx). Formaldehyde. Carbon oxides.

Unusual Fire and Explosion Hazards: Exposure to combustion products may be a hazard to health..

Advice for firefighters

Fire Fighting Procedures: Use water spray to cool unopened containers.. Evacuate area.. Collect contaminated fire extinguishing water separately. This must not be discharged into drains.. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage..
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Remove undamaged containers from fire area if it is safe to do so.

Special protective equipment for firefighters: In the event of fire, wear self-contained breathing apparatus.. Use personal protective equipment..

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Follow safe handling advice and personal protective equipment recommendations.

Environmental precautions: Do not release the product to the aquatic environment above defined regulatory levels Prevent further leakage or spillage if safe to do so. Prevent spreading over a wide area (e.g. by containment or oil barriers). Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.

Methods and materials for containment and cleaning up: Soak up with inert absorbent material. Clean up remaining materials from spill with suitable absorbant. Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable. For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container.
See sections: 7, 8, 11, 12 and 13.

7. HANDLING AND STORAGE

Precautions for safe handling: Do not get on skin or clothing. Avoid inhalation of vapour or mist. Do not swallow. Do not get in eyes. Take care to prevent spills, waste and minimize release to the environment. Handle in accordance with good industrial hygiene and safety practice. CONTAINERS MAY BE HAZARDOUS WHEN EMPTY. Since emptied containers retain product residue follow all (M)SDS and label warnings even after container is emptied.
Use only with adequate ventilation. See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

Conditions for safe storage: Keep in properly labelled containers. Store locked up. Store in accordance with the particular national regulations.

Do not store with the following product types: Strong oxidizing agents.
Unsuitable materials for containers**:** None known.

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
Octamethyl Cyclotetrasiloxane	US WEEL	TWA	10 ppm

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. Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). 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: 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, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions, no respiratory protection should be needed; however, if handling at elevated temperatures without sufficient ventilation, use an approved air-purifying respirator.
The following should be effective types of air-purifying respirators: Organic vapor cartridge.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	
Physical state	viscous liquid
Color	white
Odor	slight
Odor Threshold	No data available
pH	3.5

Melting point/range	No data available
Freezing point	No data available
Boiling point (760 mmHg)	> 35 °C
Flash point	**closed cup** >100 °C
Evaporation Rate (Butyl Acetate = 1)	No data available
Flammability (solid, gas)	Not applicable
Lower explosion limit	No data available
Upper explosion limit	No data available
Vapor Pressure	No data available
Relative Vapor Density (air = 1)	No data available
Relative Density (water = 1)	1.0
Water solubility	No data available
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Kinematic Viscosity	10000 mm2/s at 25 °C
Explosive properties	Not explosive
Oxidizing properties	The substance or mixture is not classified as oxidizing.
Molecular weight	No data available
Particle size	Not applicable

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Reactivity: Not classified as a reactivity hazard.

Chemical stability: Stable under normal conditions.

Possibility of hazardous reactions: Can react with strong oxidizing agents. When heated to temperatures above 150 °C (300 °F) in the presence of air, product can form formaldehyde vapours. Safe handling conditions may be maintained by keeping vapour concentrations within the occupational exposure limit for formaldehyde.

Conditions to avoid: None known.

Incompatible materials: Avoid contact with oxidizing materials.

Hazardous decomposition products:
Decomposition products can include and are not limited to: Formaldehyde.

11. TOXICOLOGICAL INFORMATION

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

Information on likely routes of exposure
Inhalation, Eye contact, Skin contact, Ingestion.

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:

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, > 5,000 mg/kg Estimated.

Information for components:

Silicone-Polyglycol Polymer, Alkylamine-terminated
Single dose oral LD50 has not been determined.

Typical for this family of materials. LD50, Rat, > 5,000 mg/kg Estimated.

Poly(oxyethylene) 20 sorbitan monolaurate
LD50, Rat, > 35,000 mg/kg Estimated.

2-Butyloctanol
LD50, Rat, male, 12,930 mg/kg

Lactic acid
LD50, Rat, female, 3,543 mg/kg

LD50, Rat, male, 3,543 mg/kg

Octamethyl Cyclotetrasiloxane
LD50, Rat, male, > 4,800 mg/kg No deaths occurred at this concentration.

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, > 2,000 mg/kg Estimated.

Information for components:

Silicone-Polyglycol Polymer, Alkylamine-terminated
The dermal LD50 has not been determined.

Typical for this family of materials. LD50, Rabbit, > 2,000 mg/kg Estimated.

Poly(oxyethylene) 20 sorbitan monolaurate
LD50, Guinea pig, > 3,000 mg/kg No deaths occurred at this concentration.

2-Butyloctanol
Based on data from similar materials LD50, Rabbit, > 2,000 mg/kg

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

Octamethyl Cyclotetrasiloxane
LD50, Rat, male and female, > 2,400 mg/kg No deaths occurred at this concentration.

Acute inhalation toxicity

Information for the Product:

Brief exposure (minutes) is not likely to cause adverse effects. Vapor from heated material may cause respiratory irritation.

As product: The LC50 has not been determined.

Information for components:

Silicone-Polyglycol Polymer, Alkylamine-terminated
The LC50 has not been determined.

Poly(oxyethylene) 20 sorbitan monolaurate
LC50, Rat, male and female, 4 Hour, dust/mist, > 5.1 mg/l OECD Test Guideline 403
No deaths occurred at this concentration.

2-Butyloctanol
The LC50 has not been determined.

Lactic acid
LC50, Rat, 4 Hour, dust/mist, > 7.94 mg/l

Octamethyl Cyclotetrasiloxane
LC50, Rat, male and female, 4 Hour, dust/mist, 36 mg/l OECD Test Guideline 403

Skin corrosion/irritation

Causes skin irritation.

Information for the Product:

Based on information for component(s):

Brief contact may cause skin irritation with local redness.
May cause drying and flaking of the skin.

Information for components:

Silicone-Polyglycol Polymer, Alkylamine-terminated
For similar material(s):
Brief contact may cause skin irritation with local redness.

Poly(oxyethylene) 20 sorbitan monolaurate
Brief contact may cause slight skin irritation with local redness.
May cause drying and flaking of the skin.

2-Butyloctanol
Brief contact may cause slight skin irritation with local redness.

Lactic acid
Brief contact may cause skin irritation with local redness.
Prolonged exposure may cause moderate to severe skin irritation.
Not classified as corrosive to the skin according to DOT guidelines.

Octamethyl Cyclotetrasiloxane
Brief contact is essentially nonirritating to skin.

Serious eye damage/eye irritation

Causes serious eye irritation.

Information for the Product:

Based on information for component(s):
May cause moderate eye irritation.
May cause moderate corneal injury.

Information for components:

Silicone-Polyglycol Polymer, Alkylamine-terminated
For similar material(s):
May cause moderate eye irritation.
May cause moderate corneal injury.

Poly(oxyethylene) 20 sorbitan monolaurate
May cause slight eye irritation.

2-Butyloctanol
May cause slight temporary eye irritation.

Lactic acid
Liquid may cause severe eye irritation with corneal injury. Corneal burns may occur.

Octamethyl Cyclotetrasiloxane
Essentially nonirritating to eyes.

Sensitization

For skin sensitization:
Not classified based on available information.

For respiratory sensitization:
Not classified based on available information.

Information for the Product:

For the minor component(s):
Contains component(s) which have demonstrated the potential for contact allergy in mice.

For respiratory sensitization:
No relevant data found.

Information for components:

Silicone-Polyglycol Polymer, Alkylamine-terminated
For skin sensitization:
No relevant data found.

For respiratory sensitization:
No relevant data found.

Poly(oxyethylene) 20 sorbitan monolaurate
For skin sensitization:
Did not cause allergic skin reactions when tested in humans.
Did not cause allergic skin reactions when tested in guinea pigs.
Has demonstrated the potential for contact allergy in mice.

For respiratory sensitization:
No relevant data found.

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

For respiratory sensitization:
No relevant data found.

Lactic acid
Did not demonstrate the potential for contact allergy in mice.

For respiratory sensitization:
No relevant data found.

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

For respiratory sensitization:
No relevant data found.

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:

Silicone-Polyglycol Polymer, Alkylamine-terminated
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Poly(oxyethylene) 20 sorbitan monolaurate
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

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

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

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

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:

Silicone-Polyglycol Polymer, Alkylamine-terminated
Based on available information, aspiration hazard could not be determined.

Poly(oxyethylene) 20 sorbitan monolaurate
Based on physical properties, not likely to be an aspiration hazard.

2-Butyloctanol
Based on available information, aspiration hazard could not be determined.

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

Octamethyl Cyclotetrasiloxane
May be harmful if swallowed and enters airways.

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:

Silicone-Polyglycol Polymer, Alkylamine-terminated
No relevant data found.

Poly(oxyethylene) 20 sorbitan monolaurate
Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

2-Butyloctanol
For similar material(s):
Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

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

Octamethyl Cyclotetrasiloxane
In animals, effects have been reported on the following organs:
Kidney.
Liver.
Respiratory tract.
Female reproductive organs.

Carcinogenicity

Not classified based on available information.

Information for the Product:

Product test data not available.

Information for components:

Silicone-Polyglycol Polymer, Alkylamine-terminated
No relevant data found.

Poly(oxyethylene) 20 sorbitan monolaurate
Did not cause cancer in laboratory animals.

2-Butyloctanol
No relevant data found.

Lactic acid
Did not cause cancer in laboratory animals.

Octamethyl Cyclotetrasiloxane
Results from a 2 year repeated vapour inhalation exposure study to rats of octamethylcyclotetrasiloxane (D4) indicate effects (benign uterine adenomas) in the uterus

of female animals. This finding occurred at the highest exposure dose (700 ppm) only. Studies to date have not demonstrated if these effects occur through pathways that are relevant to humans. Repeated exposure in rats to D4 resulted in protoporphyrin accumulation in the liver. Without knowledge of the specific mechanism leading to the protoporphyrin accumulation the relevance of this finding to humans is unknown.

Teratogenicity

Not classified based on available information.

Information for the Product:

Product test data not available.

Information for components:

Silicone-Polyglycol Polymer, Alkylamine-terminated
No relevant data found.

Poly(oxyethylene) 20 sorbitan monolaurate
Did not cause birth defects or any other fetal effects in laboratory animals.

2-Butyloctanol
No relevant data found.

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

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

Reproductive toxicity

Not classified based on available information.

Information for the Product:

Product test data not available.

Information for components:

Silicone-Polyglycol Polymer, Alkylamine-terminated
No relevant data found.

Poly(oxyethylene) 20 sorbitan monolaurate
No relevant data found.

2-Butyloctanol
No relevant data found.

Lactic acid
No relevant data found.

Octamethyl Cyclotetrasiloxane

In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals. In animal studies, has been shown to interfere with fertility.

Mutagenicity

Not classified based on available information.

Information for the Product:

Product test data not available.

Information for components:

Silicone-Polyglycol Polymer, Alkylamine-terminated
No relevant data found.

Poly(oxyethylene) 20 sorbitan monolaurate
In vitro genetic toxicity studies were negative.

2-Butyloctanol
In vitro genetic toxicity studies were negative.

Lactic acid
In vitro genetic toxicity studies were negative.

Octamethyl Cyclotetrasiloxane
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.

Ecotoxicity

Silicone-Polyglycol Polymer, Alkylamine-terminated

Acute toxicity to aquatic invertebrates
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).
Expert judgement
EC50, 48 Hour, > 100 mg/l

Poly(oxyethylene) 20 sorbitan monolaurate

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).
LL50, Danio rerio (zebra fish), Static, 96 Hour, > 100 mg/l, OECD Test Guideline 203
LC50, Oncorhynchus mykiss (rainbow trout), Static, 96 Hour, 216 mg/l

Acute toxicity to aquatic invertebrates
LC50, Daphnia magna (Water flea), semi-static test, 96 Hour, > 100 mg/l

Acute toxicity to algae/aquatic plants
EL50, Pseudokirchneriella subcapitata (green algae), Static, 72 Hour, Growth rate, 58.84 mg/l, OECD Test Guideline 201

Toxicity to bacteria
NOEC, activated sludge, Static, 14 Days, Respiration rates., 100 mg/l

Chronic toxicity to aquatic invertebrates
NOEC, Daphnia magna (Water flea), semi-static test, 21 d, number of offspring, 10 mg/l

2-Butyloctanol

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, 0.48 mg/l, OECD Test Guideline 203

Acute toxicity to aquatic invertebrates
EC50, Daphnia magna (Water flea), Static, 48 Hour, 0.14 mg/l, OECD Test Guideline 202

Acute toxicity to algae/aquatic plants
ErC50, Pseudokirchneriella subcapitata (green algae), Static, 72 Hour, Growth, 2.1 mg/l, OECD Test Guideline 201
NOEC, Pseudokirchneriella subcapitata (green algae), Static, 72 Hour, Growth, 0.38 mg/l, OECD Test Guideline 201

Toxicity to bacteria
Based on data from similar materials
EC0, activated sludge, Static, 3 Hour, >= 1,000 mg/l, OECD Test Guideline 209

Chronic toxicity to aquatic invertebrates
Based on data from similar materials
NOEC, Daphnia magna (Water flea), 21 d, number of offspring, 14 µg/l

Lactic acid

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, 130 mg/l, Method Not Specified.
LC50, Bluegill sunfish (Lepomis macrochirus), static test, 96 Hour, 130 mg/l, Method Not Specified.

Acute toxicity to aquatic invertebrates
EC50, Daphnia magna, static test, 48 Hour, 240 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants
ErC50, Algae (Selenastrum capricornutum), static test, 70 Hour, Growth rate, 3.5 mg/l, OECD Test Guideline 201 or Equivalent
NOEC, Algae (Selenastrum capricornutum), static test, 70 Hour, Growth rate, 1.9 mg/l, OECD Test Guideline 201 or Equivalent

Toxicity to bacteria
EC50, 3 Hour, > 100 mg/l, OECD Test Guideline 209

Octamethyl Cyclotetrasiloxane

Acute toxicity to fish
Not expected to be acutely toxic to aquatic organisms.
No toxicity at the limit of solubility
LC50, Oncorhynchus mykiss (rainbow trout), flow-through, 96 Hour, > 0.022 mg/l
No toxicity at the limit of solubility
LC50, Cyprinodon variegatus (sheepshead minnow), flow-through, 14 d, > 0.0063 mg/l

Acute toxicity to aquatic invertebrates
No toxicity at the limit of solubility
EC50, Mysidopsis bahia (opossum shrimp), flow-through test, 96 Hour, > 0.0091 mg/l
No toxicity at the limit of solubility
EC50, Daphnia magna (Water flea), flow-through test, 48 Hour, > 0.015 mg/l

Acute toxicity to algae/aquatic plants
No toxicity at the limit of solubility
ErC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, Growth rate, > 0.022 mg/l

Chronic toxicity to fish
No toxicity at the limit of solubility
NOEC, Oncorhynchus mykiss (rainbow trout), 93 d, >= 0.0044 mg/l

Chronic toxicity to aquatic invertebrates
No toxicity at the limit of solubility
NOEC, Daphnia magna (Water flea), 21 d, >= 0.0079 mg/l

Persistence and degradability

Silicone-Polyglycol Polymer, Alkylamine-terminated
Biodegradability: No relevant data found.

Poly(oxyethylene) 20 sorbitan monolaurate
Biodegradability: Material is expected to be readily biodegradable.
10-day Window: Not applicable
Biodegradation: 62.5 %
Exposure time: 28 d
Method: OECD Test Guideline 301F

2-Butyloctanol
Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.
10-day Window: Pass
Biodegradation: 84 %
Exposure time: 28 d
Method: OECD Test Guideline 301B

Lactic acid
Biodegradability: Material is expected to be readily biodegradable.
10-day Window: Pass
Biodegradation: 88 %
Exposure time: 30 d
Method: Method Not Specified.

Chemical Oxygen Demand: 0.9 mg/mg

Octamethyl Cyclotetrasiloxane

Biodegradability: Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.
10-day Window: Not applicable
Biodegradation: 3.7 %
Exposure time: 28 d
Method: OECD Test Guideline 310

Stability in Water (1/2-life)
Hydrolysis, DT50, 69.3 - 144 Hour, pH 7, Half-life Temperature 24.6 °C, OECD Test Guideline 111

Photodegradation
Atmospheric half-life: 16 d
Method: Estimated.

Bioaccumulative potential

Silicone-Polyglycol Polymer, Alkylamine-terminated

Bioaccumulation: No relevant data found.

Poly(oxyethylene) 20 sorbitan monolaurate

Bioaccumulation: No relevant data found.

2-Butyloctanol

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): 5.5
Bioconcentration factor (BCF): 1.92 Estimated.

Lactic acid

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): -0.62
Bioconcentration factor (BCF): 3.2 Fish Calculated.

Octamethyl Cyclotetrasiloxane

Bioaccumulation: Bioconcentration potential is high (BCF > 3000 or Log Pow between 5 and 7).
Partition coefficient: n-octanol/water(log Pow): 6.49 Measured
Bioconcentration factor (BCF): 12,400 Pimephales promelas (fathead minnow) Measured

Mobility in Soil

Silicone-Polyglycol Polymer, Alkylamine-terminated

No relevant data found.

Poly(oxyethylene) 20 sorbitan monolaurate

No relevant data found.

2-Butyloctanol

No relevant data found.

Lactic acid

Partition coefficient (Koc): < 20.9

Octamethyl Cyclotetrasiloxane

Partition coefficient (Koc): 16596 OECD Test Guideline 106

Results of PBT and vPvB assessment

Silicone-Polyglycol Polymer, Alkylamine-terminated

This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Poly(oxyethylene) 20 sorbitan monolaurate

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

2-Butyloctanol

This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Lactic acid

This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Octamethyl Cyclotetrasiloxane

Octamethylcyclotetrasiloxane (D4) meets the current criteria for PBT and vPvB under REACh Annex XIII or other regionally specific criteria. However, D4 does not behave similarly to known PBT/vPvB substances. The weight of scientific evidence from field studies shows that D4 is not biomagnifying in aquatic and terrestrial food webs. D4 in air will degrade by reaction with naturally occurring hydroxyl radicals in the atmosphere. Any D4 in air that does not degrade by reaction with hydroxyl radicals is not expected to deposit from the air to water, to land, or to living organisms.

Other adverse effects

Silicone-Polyglycol Polymer, Alkylamine-terminated

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Poly(oxyethylene) 20 sorbitan monolaurate

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

2-Butyloctanol

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Lactic acid

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Octamethyl Cyclotetrasiloxane

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

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: Recycler. Reclaimer. Incinerator or other thermal destruction device.

14. TRANSPORT INFORMATION

Classification for ROAD and Rail transport:

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

Emergency Decree on Controlling the Use of Volatile Substances B.E. 2533
Not applicable

Hazardous Substance Act B.E. 2535
This product may subject restriction or prohibition under below authorities due to certain applications. For details, please refer to local regulations to decide if any actions (of notification, registration, and/or license in accordance with the determined specific rules and procedure) are needed before business activity happen (production, import, export or to have it in possession for transport and/or storage).
Department of Agriculture
Not applicable

Department of Energy Business
Not applicable

Department of Livestock
Banned and/or restricted

Department of Industrial Works
Not applicable

Food and Drug Administration
Banned and/or restricted

Department of Fisheries
Not applicable

16. OTHER INFORMATION

Revision
Identification Number: 6022573 / A176 / Issue Date: 17.12.2021 / Version: 7.0
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
AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; 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; 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; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; 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; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; 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; WHMIS - Workplace Hazardous Materials Information System

DOW CHEMICAL THAILAND LTD 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.
TH