



SAFETY DATA SHEET

DOW EUROPE GMBH

Safety Data Sheet according to Reg. (EU) 2020/878

Product name: DOWCAL™ 200 Heat Transfer Fluid

Revision Date: 13.01.2022

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DOW EUROPE GMBH 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.

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product name: DOWCAL™ 200 Heat Transfer Fluid

UFI: 70K4-R024-5008-SNX9

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses: Intended as a heat transfer fluid for closed-loop systems. 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.

1.3 Details of the supplier of the safety data sheet

COMPANY IDENTIFICATION

DOW EUROPE GMBH
BACHTOBELSTRASSE 4
8810 HORGEN
SWITZERLAND

Customer Information Number:

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c/o

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HERBERT H.DOWWEG 5
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1.4 EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: 00 41 447 28 2820

Local Emergency Contact: 00 32 3575 0330

Latvian toxicological centre: 00371 670 42 468

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008:

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

2.2 Label elements**Labelling according to Regulation (EC) No 1272/2008:**

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

Supplemental information

EUH210 Safety data sheet available on request.

2.3 Other hazards

This product contains no substances assessed to be PBT or vPvB at levels of 0.1% or higher.

Endocrine disrupting properties

Environment: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Human Health: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

This product is a mixture.

CASRN / EC-No. / Index-No.	REACH Registration Number	Concentration	Component	Classification: REGULATION (EC) No 1272/2008
CASRN 57-55-6 EC-No. 200-338-0 Index-No. —	01-2119456809-23	>= 25,0 - <= 96,0 %	Propylene glycol	Not classified Acute toxicity estimate Acute oral toxicity: > 20 000 mg/kg Acute inhalation toxicity: 317,042 mg/l, 2 Hour, dust/mist Acute dermal toxicity: > 2 000 mg/kg
CASRN 7732-18-5 EC-No. 231-791-2	—	<= 75,0 %	Water	Not classified

Index-No. —				
CASRN 532-32-1 EC-No. 208-534-8 Index-No. —	01-2119460683-35	< 3,5 %	Sodium benzoate	Eye Irrit. 2; H319 Acute toxicity estimate Acute oral toxicity: 2 100 - 3 450 mg/kg
CASRN 12045-78-2 EC-No. 601-707-2 Index-No. —	—	< 2,0 %	Boron potassium oxide (B ₄ K ₂ O ₇), tetrahydrate	Repr. 1B; H360 specific concentration limit Repr. 1B; H360 ≥ 4,5 % Acute toxicity estimate Acute oral toxicity: 3 690 mg/kg Acute inhalation toxicity: > 2,03 mg/l, 4 Hour, dust/mist Acute dermal toxicity: > 2 000 mg/kg
CASRN 29385-43-1 EC-No. 249-596-6 Index-No. —	01-2119979081-35	≥ 0,1 - < 0,25 %	Tolyl triazole	Acute Tox. 4; H302 Repr. 2; H361d Aquatic Chronic 2; H411 Acute toxicity estimate Acute oral toxicity: 720 mg/kg Acute dermal toxicity: > 5 000 mg/kg

If present in this product, any not classified components disclosed above for which no country specific OEL value(s) is(are) indicated under Section 8, are being disclosed as voluntarily disclosed components.

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: FIRST AID MEASURES

4.1 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.

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.

4.2 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.

4.3 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.

SECTION 5: FIREFIGHTING MEASURES

5.1 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..

5.2 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: 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..

5.3 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.. Burning liquids may be extinguished by dilution with water.. 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).. If protective equipment is not available or not used, fight fire from a protected location or safe distance..

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures: 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.

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

6.3 Methods and materials for containment and cleaning up: Contain spilled material if possible. Small spills: Absorb with materials such as: Cat litter. Sawdust. Vermiculite. Zorb-all®. Collect in suitable and properly labeled containers. Large spills: Dike area to contain spill. See Section 13, Disposal Considerations, for additional information.

6.4 Reference to other sections: References to other sections, if applicable, have been provided in the previous sub-sections.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling: Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

7.2 Conditions for safe storage, including any incompatibilities: Do not store in: Opened or unlabeled containers. Store in a dry place. Avoid moisture. Store away from direct sunlight. Store in tightly closed container. Use only with adequate ventilation. See Section 10 for more specific information. Additional storage and handling information on this product may be obtained by calling your sales or customer service contact.

7.3 Specific end use(s): See the technical data sheet on this product for further information.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 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
Propylene glycol	US WEEL	TWA	10 mg/m3
	LV OEL	AER 8 st	7 mg/m3
Sodium benzoate	Dow IHG	TWA	10 mg/m3

Recommended monitoring procedures

Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with the Occupational Exposure Limits and the adequacy of exposure controls. For some substances biological monitoring may also be appropriate. Validated exposure measurement methods should be applied by a competent person and samples should be analysed by an accredited laboratory.

Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy); European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents); European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents). Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Examples of sources of recommended exposure measurement methods are given below or contact the supplier. Further national methods may be available.

National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods.

Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods.

Health and Safety Executive (HSE), United Kingdom: Methods for the Determination of Hazardous Substances.

Institut für Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA), Germany.

L'Institut National de Recherche et de Sécurité, (INRS), France.

Derived No Effect Level

Propylene glycol

Workers

Acute systemic effects		Acute local effects		Long-term systemic effects		Long-term local effects	
Dermal	Inhalation	Dermal	Inhalation	Dermal	Inhalation	Dermal	Inhalation
n.a.	n.a.	n.a.	n.a.	n.a.	168 mg/m ³	n.a.	10 mg/m ³

Consumers

Acute systemic effects			Acute local effects		Long-term systemic effects			Long-term local effects	
Dermal	Inhalation	Oral	Dermal	Inhalation	Dermal	Inhalation	Oral	Dermal	Inhalation
n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	50 mg/m ³	n.a.	n.a.	10 mg/m ³

Sodium benzoate

Workers

Acute systemic effects		Acute local effects		Long-term systemic effects		Long-term local effects	
Dermal	Inhalation	Dermal	Inhalation	Dermal	Inhalation	Dermal	Inhalation
n.a.	n.a.	n.a.	n.a.	34,7 mg/kg bw/day	10,4 mg/m ³	4,5 mg/cm ²	6,3 mg/m ³

Consumers

Acute systemic effects			Acute local effects		Long-term systemic effects			Long-term local effects	
Dermal	Inhalation	Oral	Dermal	Inhalation	Dermal	Inhalation	Oral	Dermal	Inhalation

n.a.	n.a.	n.a.	n.a.	n.a.	20,8 mg/kg bw/day	2,1 mg/m3	25 mg/kg bw/day	2,7 mg/cm2	1,3 mg/m3
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Tolyl triazole

Workers

<i>Acute systemic effects</i>		<i>Acute local effects</i>		<i>Long-term systemic effects</i>		<i>Long-term local effects</i>	
Dermal	Inhalation	Dermal	Inhalation	Dermal	Inhalation	Dermal	Inhalation
mg/kg bw/day	n.a.	mg/kg bw/day	n.a.	0,3 mg/kg bw/day	21,2 mg/m3	mg/kg bw/day	n.a.

Consumers

<i>Acute systemic effects</i>			<i>Acute local effects</i>		<i>Long-term systemic effects</i>			<i>Long-term local effects</i>	
Dermal	Inhalation	Oral	Dermal	Inhalation	Dermal	Inhalation	Oral	Dermal	Inhalation
mg/kg bw/day	n.a.	mg/kg bw/day	mg/kg bw/day	n.a.	0,01 mg/kg bw/day	0,35 mg/m3	0,01 mg/kg bw/day	mg/kg bw/day	n.a.

Predicted No Effect Concentration

Propylene glycol

Compartment	PNEC
Fresh water	260 mg/l
Marine water	26 mg/l
Intermittent use/release	183 mg/l
Sewage treatment plant	20000 mg/l
Fresh water sediment	572 mg/kg dry weight (d.w.)
Marine sediment	57,2 mg/kg dry weight (d.w.)
Soil	50 mg/kg dry weight (d.w.)

Tolyl triazole

Compartment	PNEC
Fresh water	0,008 mg/l
Intermittent use/release	0,086 mg/l
Marine water	0,02 mg/l
Intermittent use/release	0,053 mg/l
Sewage treatment plant	39,4 mg/l
Fresh water sediment	0,117 mg/kg dry weight (d.w.)
Marine sediment	0,292 mg/kg dry weight (d.w.)
Soil	0,0187 mg/kg dry weight (d.w.)

8.2 Exposure controls

Engineering controls: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure

limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

Individual protection measures

Eye/face protection: Use safety glasses (with side shields). Safety glasses (with side shields) should be consistent with EN 166 or equivalent. If there is a potential for exposure to particles which could cause eye discomfort, wear chemical goggles. Chemical goggles should be consistent with EN 166 or equivalent.

Skin protection

Hand protection: Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Use chemical resistant gloves classified under Standard EN374: Protective gloves against chemicals and micro-organisms. Examples of preferred glove barrier materials include: Butyl rubber. Natural rubber ("latex"). Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl alcohol ("PVA"). Polyvinyl chloride ("PVC" or "vinyl"). Examples of acceptable glove barrier materials include: Neoprene. When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374) is recommended. When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374) is recommended. Glove thickness alone is not a good indicator of the level of protection a glove provides against a chemical substance as this level of protection is also highly dependent on the specific composition of the material that the glove is fabricated from. The thickness of the glove must, depending on model and type of material, generally be more than 0.35 mm to offer sufficient protection for prolonged and frequent contact with the substance. As an exception to this general rule it is known that multilayer laminate gloves may offer prolonged protection at thicknesses less than 0.35 mm. Other glove materials with a thickness of less than 0.35 mm may offer sufficient protection when only brief contact is expected. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Other protection: Wear clean, body-covering clothing.

Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator. Use the following CE approved air-purifying respirator: Organic vapor cartridge with a particulate pre-filter, type AP2 (meeting standard EN 14387).

Environmental exposure controls

See SECTION 7: Handling and storage and SECTION 13: Disposal considerations for measures to prevent excessive environmental exposure during use and waste disposal.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance

Physical state	Liquid.
Color	Color is variable
Odor	Characteristic
Odor Threshold	No test data available
pH	7,2 - 8,2 50% <i>Literature</i>
Melting point/freezing point	
Melting point/range	Not applicable to liquids
Freezing point	-51 - -12 °C <i>Literature</i>
Boiling point or initial boiling point and boiling range	
Boiling point (760 mmHg)	170 °C <i>Literature</i>
Flash point	closed cup 101 °C at 760 mmHg <i>Literature</i>
Flammability (solid, gas)	Not applicable to liquids
Flammability (liquids)	Not expected to be a static-accumulating flammable liquid.
Lower explosion limit	2,6 % vol <i>Literature</i> (based on major component)
Upper explosion limit	12,5 % vol <i>Literature</i> (based on major component)
Vapor Pressure	3 mbar <i>Literature</i>
Relative Vapor Density (air = 1)	>1,0 <i>Literature</i>
Relative Density (water = 1)	1,045 - 1,055 at 20 °C / 20 °C <i>Literature</i>
Solubility(ies)	
Water solubility	completely miscible
Partition coefficient: n-octanol/water	not determined
Auto-ignition temperature	420 °C <i>Literature</i> Propylene glycol
Decomposition temperature	No test data available
Kinematic Viscosity	50 - 75 mm ² /s at 20 °C <i>Literature</i>
Particle characteristics	
Particle size	Not applicable, liquid
9.2 Other information	
Molecular weight	No test data available
Explosive properties	Not explosive
Oxidizing properties	No Oxidizing
Evaporation Rate (Butyl Acetate = 1)	<0,5 <i>Estimated.</i>

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

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity: No data available

10.2 Chemical stability: Stable under recommended storage conditions. See Storage, Section 7.
Hygroscopic

10.3 Possibility of hazardous reactions: Polymerization will not occur.

10.4 Conditions to avoid: Exposure to elevated temperatures can cause product to decompose. Generation of gas during decomposition can cause pressure in closed systems. Avoid direct sunlight or ultraviolet sources.

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

10.6 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.. Organic acids..

SECTION 11: TOXICOLOGICAL INFORMATION

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

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

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, > 20 000 mg/kg

Information for components:

Propylene glycol

LD50, Rat, > 20 000 mg/kg

Sodium benzoate

Estimated. LD50, Rat, male and female, 2 100 - 3 450 mg/kg

Boron potassium oxide (B4K2O7), tetrahydrate

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, male, 3 690 mg/kg

Tolyl triazole

LD50, Rat, male and female, 720 mg/kg OECD Test Guideline 401

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, > 2 000 mg/kg

Information for components:

Propylene glycol

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

Sodium benzoate

The dermal LD50 has not been determined.

Boron potassium oxide (B4K2O7), tetrahydrate

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

Typical for this family of materials. LD50, Rat, male and female, > 2 000 mg/kg No deaths occurred at this concentration.

Tolyl triazole

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.

As product: The LC50 has not been determined.

Information for components:

Propylene glycol

LC50, Rabbit, 2 Hour, dust/mist, 317,042 mg/l No deaths occurred at this concentration.

Sodium benzoate

The LC50 has not been determined.

Boron potassium oxide (B4K2O7), tetrahydrate

No adverse effects are anticipated from single exposure to dust. Dust may cause irritation to upper respiratory tract (nose and throat).

Typical for this family of materials. LC50, Rat, male and female, 4 Hour, dust/mist, > 2,03 mg/l OECD Test Guideline 403 No deaths occurred at this concentration.

Tolyl triazole

The LC50 has not been determined.

Skin corrosion/irritation

Information for the Product:

Based on information for component(s):

Prolonged contact is essentially nonirritating to skin.

Repeated contact may cause flaking and softening of skin.

Information for components:

Propylene glycol

Prolonged contact is essentially nonirritating to skin.

Repeated contact may cause flaking and softening of skin.

Sodium benzoate

Brief contact is essentially nonirritating to skin.

Boron potassium oxide (B₄K₂O₇), tetrahydrate

Brief contact is essentially nonirritating to skin.

Tolyl triazole

Brief contact is essentially nonirritating to skin.

Serious eye damage/eye irritation

Information for the Product:

Based on information for component(s):

May cause slight eye irritation.

Corneal injury is unlikely.

Mist may cause eye irritation.

Information for components:

Propylene glycol

May cause slight temporary eye irritation.

Corneal injury is unlikely.

Mist may cause eye irritation.

Sodium benzoate

May cause severe eye irritation.

Corneal injury is unlikely.

Boron potassium oxide (B₄K₂O₇), tetrahydrate

May cause slight eye irritation.

Corneal injury is unlikely.

Tolyl triazole

May cause slight eye irritation.

Sensitization

Information for the Product:

Based on information for component(s):

For skin sensitization:

Skin contact may cause an allergic skin reaction in a small proportion of individuals.

For respiratory sensitization:

No relevant data found.

Information for components:

Propylene glycol

Did not cause allergic skin reactions when tested in humans.

For respiratory sensitization:

No relevant data found.

Sodium benzoate

Skin contact may cause an allergic skin reaction in a small proportion of individuals.

For respiratory sensitization:

No relevant data found.

Boron potassium oxide (B4K2O7), tetrahydrate

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

For respiratory sensitization:

No relevant data found.

Tolyl triazole

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)

Information for the Product:

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

Information for components:

Propylene glycol

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

Sodium benzoate

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

Boron potassium oxide (B4K2O7), tetrahydrate

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

Tolyl triazole

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:

Propylene glycol

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

Sodium benzoate

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

Boron potassium oxide (B4K2O7), tetrahydrate

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

Tolyl triazole

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 humans, symptoms may include:

Respiratory effects

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

Liver.

Testes

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

Information for components:

Propylene glycol

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

Sodium benzoate

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

Liver.

Boron potassium oxide (B4K2O7), tetrahydrate

For this family of materials:

In humans, symptoms may include:

Respiratory effects.

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

Central nervous system.

Testes.

Tolyl triazole

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

Carcinogenicity

Information for the Product:

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

Information for components:

Propylene glycol

Did not cause cancer in laboratory animals.

Sodium benzoate

No relevant data found.

Boron potassium oxide (B₄K₂O₇), tetrahydrate

For this family of materials: Did not cause cancer in laboratory animals.

Tolyl triazole

No relevant data found.

Teratogenicity

Information for the Product:

Contains component(s) which caused birth defects in laboratory animals. In laboratory animals, boron compounds have caused birth defects only at doses toxic to the mother and have been toxic to the fetus at doses nontoxic to the mother.

Information for components:

Propylene glycol

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

Sodium benzoate

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

Boron potassium oxide (B₄K₂O₇), tetrahydrate

In laboratory animals, boron compounds have caused birth defects only at doses toxic to the mother and have been toxic to the fetus at doses nontoxic to the mother.

Tolyl triazole

Has caused birth defects in laboratory animals.

Reproductive toxicity

Information for the Product:

For the major component(s): In animal studies, did not interfere with reproduction. In animal studies, did not interfere with fertility.

For the minor component(s): In animal studies, boron compounds have been shown to interfere with fertility in males, and to a lesser degree in females.

Information for components:

Propylene glycol

In animal studies, did not interfere with reproduction. In animal studies, did not interfere with fertility.

Sodium benzoate

No relevant data found.

Boron potassium oxide (B₄K₂O₇), tetrahydrate

In animal studies, boron compounds have been shown to interfere with fertility in males, and to a lesser degree in females.

Tolyl triazole

No relevant data found.

Mutagenicity

Information for the Product:

Contains component(s) which were negative in some in vitro genetic toxicity studies and positive in others. Genetic toxicity studies in animals were negative for component(s) tested.

Information for components:

Propylene glycol

In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

Sodium benzoate

In vitro genetic toxicity studies were negative in some cases and positive in other cases. Animal genetic toxicity studies were negative.

Boron potassium oxide (B₄K₂O₇), tetrahydrate

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

Tolyl triazole

In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

11.2 Information on other hazards

Endocrine disrupting properties

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Information for components:**Propylene glycol**

The substance is not considered to have endocrine disrupting properties according to REACH Article 57(f), Commission Regulation (EU) 2018/605 or Commission Delegated Regulation (EU) 2017/2100.

Water

The substance is not considered to have endocrine disrupting properties according to REACH Article 57(f), Commission Regulation (EU) 2018/605 or Commission Delegated Regulation (EU) 2017/2100.

Sodium benzoate

The substance is not considered to have endocrine disrupting properties according to REACH Article 57(f), Commission Regulation (EU) 2018/605 or Commission Delegated Regulation (EU) 2017/2100.

Boron potassium oxide (B₄K₂O₇), tetrahydrate

The substance is not considered to have endocrine disrupting properties according to REACH Article 57(f), Commission Regulation (EU) 2018/605 or Commission Delegated Regulation (EU) 2017/2100.

Tolyl triazole

The substance is not considered to have endocrine disrupting properties according to REACH Article 57(f), Commission Regulation (EU) 2018/605 or Commission Delegated Regulation (EU) 2017/2100.

SECTION 12: ECOLOGICAL INFORMATION

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

12.1 Toxicity**Propylene glycol****Acute toxicity to fish**

Material is not classified as dangerous to aquatic organisms (LC₅₀/EC₅₀/IC₅₀/LL₅₀/EL₅₀ greater than 100 mg/L in most sensitive species).

LC₅₀, Oncorhynchus mykiss (rainbow trout), static test, 96 Hour, 40 613 mg/l, OECD Test Guideline 203

Acute toxicity to aquatic invertebrates

LC₅₀, Ceriodaphnia dubia (water flea), static test, 48 Hour, 18 340 mg/l, OECD Test Guideline 202

Acute toxicity to algae/aquatic plants

ErC50, *Pseudokirchneriella subcapitata* (green algae), 96 Hour, Growth rate inhibition, 19 000 mg/l, OECD Test Guideline 201

Toxicity to bacteria

NOEC, *Pseudomonas putida*, 18 Hour, > 20 000 mg/l

Chronic toxicity to aquatic invertebrates

NOEC, *Ceriodaphnia dubia* (water flea), semi-static test, 7 d, number of offspring, 13 020 mg/l

Sodium benzoate

Acute toxicity to fish

Material is not classified as dangerous to aquatic organisms (LC50/EC50/IC50/LL50/EL50 greater than 100 mg/L in most sensitive species).

LC50, *Pimephales promelas* (fathead minnow), static test, 96 Hour, > 100 mg/l

Acute toxicity to aquatic invertebrates

EC50, *Daphnia magna* (Water flea), static test, 96 Hour, > 100 mg/l

Acute toxicity to algae/aquatic plants

ErC50, *Pseudokirchneriella subcapitata* (green algae), static test, 72 Hour, > 100 mg/l

Boron potassium oxide (B4K2O7), tetrahydrate

Acute toxicity to fish

Material is harmful to aquatic organisms (LC50/EC50/IC50 between 10 and 100 mg/L in the most sensitive species).

Material is not classified as dangerous to aquatic organisms (LC50/EC50/IC50/LL50/EL50 greater than 100 mg/L in most sensitive species).

For this family of materials:

LC50, *Limanda limanda*, flow-through, 96 Hour, 523 mg/l

Acute toxicity to aquatic invertebrates

For this family of materials:

LC50, *Daphnia magna* (Water flea), static test, 48 Hour, 939 mg/l, OECD Test Guideline 202 or Equivalent

Tolyl triazole

Acute toxicity to fish

Material is toxic to aquatic organisms (LC50/EC50/IC50 between 1 and 10 mg/L in the most sensitive species).

LC50, *Cyprinodon variegatus* (sheepshead minnow), semi-static test, 96 Hour, 55 mg/l, OECD Test Guideline 203

Acute toxicity to aquatic invertebrates

LC50, copepod *Acartia tonsa*, static test, 48 Hour, 55 mg/l

For similar material(s):

EC50, *Daphnia galeata* (water flea), static test, 48 Hour, 8,58 mg/l

For similar material(s):

EC50, *Daphnia galeata* (water flea), static test, 48 Hour, 15,8 mg/l

Acute toxicity to algae/aquatic plants

EC50, *Skeletonema costatum* (marine diatom), static test, 72 Hour, Growth rate inhibition, 53 mg/l

NOEC, Skeletonema costatum (marine diatom), static test, 72 Hour, Growth rate inhibition, 30 mg/l

For similar material(s):

EC10, Desmodesmus subspicatus (green algae), 72 Hour, Growth rate inhibition, 2,86 mg/l

For similar material(s):

NOEC, Desmodesmus subspicatus (green algae), 72 Hour, Growth rate inhibition, 2,5 mg/l

For similar material(s):

EC10, Desmodesmus subspicatus (green algae), 72 Hour, Growth rate inhibition, 1,18 mg/l

For similar material(s):

NOEC, Desmodesmus subspicatus (green algae), 72 Hour, Growth rate inhibition, 1,2 mg/l

Chronic toxicity to aquatic invertebrates

NOEC, Daphnia magna (Water flea), semi-static test, 21 d, Reproduction, 18,4 mg/l

For similar material(s):

EC10, Daphnia galeata (water flea), 21 d, Reproduction, 0,4 mg/l

For similar material(s):

EC10, Daphnia galeata (water flea), 21 d, Reproduction, 0,97 mg/l

12.2 Persistence and degradability

Propylene glycol

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Biodegradation may occur under anaerobic conditions (in the absence of oxygen).

10-day Window: Pass

Biodegradation: 81 %

Exposure time: 28 d

Method: OECD Test Guideline 301F or Equivalent

10-day Window: Not applicable

Biodegradation: 96 %

Exposure time: 64 d

Method: OECD Test Guideline 306 or Equivalent

Sodium benzoate

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

10-day Window: Pass

Biodegradation: > 74 %

Exposure time: 28 d

Method: OECD Test Guideline 301B or Equivalent

Boron potassium oxide (B4K2O7), tetrahydrate

Biodegradability: Biodegradation is not applicable.

Tolyl triazole

Biodegradability: Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.

Biodegradation: 4 %

Exposure time: 28 d

12.3 Bioaccumulative potential

Propylene glycol

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient: n-octanol/water(log Pow): -1,07 Measured

Bioconcentration factor (BCF): 0,09 Estimated.

Sodium benzoate

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient: n-octanol/water(log Pow): -2,27 Estimated.

Boron potassium oxide (B4K2O7), tetrahydrate

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

Tolyl triazole

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient: n-octanol/water(log Pow): 1,71 Estimated.

Bioconcentration factor (BCF): 4,17 Estimated.

12.4 Mobility in soil**Propylene glycol**

Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

Partition coefficient (Koc): < 1 Estimated.

Sodium benzoate

No relevant data found.

Boron potassium oxide (B4K2O7), tetrahydrate

No relevant data found.

Tolyl triazole

Partition coefficient (Koc): 1647 Estimated.

12.5 Results of PBT and vPvB assessment**Propylene glycol**

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).

Sodium benzoate

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

Boron potassium oxide (B4K2O7), tetrahydrate

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

Tolyl triazole

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).

12.6 Endocrine disrupting properties

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Propylene glycol

The substance is not considered to have endocrine disrupting properties according to REACH Article 57(f), Commission Regulation (EU) 2018/605 or Commission Delegated Regulation (EU) 2017/2100.

Water

The substance is not considered to have endocrine disrupting properties according to REACH Article 57(f), Commission Regulation (EU) 2018/605 or Commission Delegated Regulation (EU) 2017/2100.

Sodium benzoate

The substance is not considered to have endocrine disrupting properties according to REACH Article 57(f), Commission Regulation (EU) 2018/605 or Commission Delegated Regulation (EU) 2017/2100.

Boron potassium oxide (B4K2O7), tetrahydrate

The substance is not considered to have endocrine disrupting properties according to REACH Article 57(f), Commission Regulation (EU) 2018/605 or Commission Delegated Regulation (EU) 2017/2100.

Tolyl triazole

The substance is not considered to have endocrine disrupting properties according to REACH Article 57(f), Commission Regulation (EU) 2018/605 or Commission Delegated Regulation (EU) 2017/2100.

12.7 Other adverse effects

Propylene glycol

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

Sodium benzoate

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

Boron potassium oxide (B4K2O7), tetrahydrate

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

Tolyl triazole

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

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

This product, when being disposed of in its unused and uncontaminated state should be treated as a hazardous waste according to EC Directive 2008/98/EC. Any disposal practices must be in compliance with all national and provincial laws and any municipal or local by-laws governing

hazardous waste. For used, contaminated and residual materials additional evaluations may be required. Do not dump into any sewers, on the ground, or into any body of water.

The definitive assignment of this material to the appropriate EWC group and thus its proper EWC code will depend on the use that is made of this material. Contact the authorized waste disposal services.

SECTION 14: TRANSPORT INFORMATION

Classification for ROAD and Rail transport (ADR/RID):

- | | | |
|------|------------------------------|---|
| 14.1 | UN number or ID number | Not applicable |
| 14.2 | UN proper shipping name | Not regulated for transport |
| 14.3 | Transport hazard class(es) | Not applicable |
| 14.4 | Packing group | Not applicable |
| 14.5 | Environmental hazards | Not considered environmentally hazardous based on available data. |
| 14.6 | Special precautions for user | No data available. |

Classification for SEA transport (IMO-IMDG):

- | | | |
|------|---|---|
| 14.1 | UN number or ID number | Not applicable |
| 14.2 | UN proper shipping name | Not regulated for transport |
| 14.3 | Transport hazard class(es) | Not applicable |
| 14.4 | Packing group | Not applicable |
| 14.5 | Environmental hazards | Not considered as marine pollutant based on available data. |
| 14.6 | Special precautions for user | No data available. |
| 14.7 | Maritime transport in bulk according to IMO instruments | Consult IMO regulations before transporting ocean bulk |

Classification for AIR transport (IATA/ICAO):

- | | | |
|------|------------------------------|-----------------------------|
| 14.1 | UN number or ID number | Not applicable |
| 14.2 | UN proper shipping name | Not regulated for transport |
| 14.3 | Transport hazard class(es) | Not applicable |
| 14.4 | Packing group | Not applicable |
| 14.5 | Environmental hazards | Not applicable |
| 14.6 | Special precautions for user | No data available. |

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.

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

REACH Regulation (EC) No 1907/2006

This product contains only components that have been either registered, are exempt from registration, are regarded as registered or are not subject to registration according to Regulation (EC) No. 1907/2006 (REACH). Polymers are exempted from registration under REACH. All relevant starting materials and additives have been either registered or are exempt from registration according to Regulation (EC) No. 1907/2006 (REACH). The aforementioned indications of the REACH registration status are provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. It is the buyer's/user's responsibility to ensure that his/her understanding of the regulatory status of this product is correct.

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

Listed in Regulation: Not applicable

Further information

Cabinet Regulation No.325 of 15 May 2007 (as amended) "Labour Protection Requirements when Coming in Contact with Chemical Substances at Workplaces".

Cabinet Regulation No.494 of 7 August 2018 on Procedures for recording of waste shipments

Cabinet Regulation No.795 of 22 December 2015 on Procedures for Registration of Chemical Substances and Mixtures and Their Database.

15.2 Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance/mixture.

SECTION 16: OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

H302	Harmful if swallowed.
H319	Causes serious eye irritation.
H360	May damage fertility or the unborn child.
H361d	Suspected of damaging the unborn child.
H411	Toxic to aquatic life with long lasting effects.

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) No 1272/2008

This product is not classified as dangerous according to EC criteria.

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

Legend

AER 8 st	Limit value measured and calculated for an 8-hour period
Dow IHG	Dow Industrial Hygiene Guideline
LV OEL	Latvia. Occupational exposure limit values
TWA	Time weighted average
US WEEL	USA. Workplace Environmental Exposure Levels (WEEL)
Acute Tox.	Acute toxicity
Aquatic Chronic	Long-term (chronic) aquatic hazard
Eye Irrit.	Eye irritation
Repr.	Reproductive toxicity

Full text of other abbreviations

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AIIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; 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; 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; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; 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; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Information Source and References

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

DOW EUROPE GMBH 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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