

ALTP-89

Version number: 3.0
Replaces version of: 2024-12-12 (2)

Revision: 2025-02-06

1 Identification

1.1 Product identifier

Trade name **ALTP-89**
Alternative name(s) Graphene Surface Enhancer

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

Relevant identified uses polishing agent

1.3 Details of the supplier of the safety data sheet

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1.4 Emergency telephone number

Emergency information service INFOTRAC 1-800-535-5053, 24 Hours

2 Hazard identification

2.1 Classification of the substance or mixture

Classification acc. to GHS

Section	Hazard class	Category	Hazard class and category	Hazard statement
2.6	flammable liquid	3	Flam. Liq. 3	H226
3.2	skin corrosion/irritation	2	Skin Irrit. 2	H315
3.3	serious eye damage/eye irritation	1	Eye Dam. 1	H318
3.10	aspiration hazard	1	Asp. Tox. 1	H304

For full text of abbreviations: see SECTION 16.

The most important adverse physicochemical, human health and environmental effects

The product is combustible and can be ignited by potential ignition sources.

2.2 Label elements

Labeling

- Signal word danger

- Pictograms

GHS02, GHS05, GHS08



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- Hazard statements

H226	Flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H318	Causes serious eye damage.

- Precautionary statements

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P240	Ground and bond container and receiving equipment.
P241	Use explosion-proof electrical, ventilating and lighting equipment.
P242	Use non-sparking tools.
P243	Take action to prevent static discharges.
P264	Wash hands and face thoroughly after handling.
P280	Wear eye protection or face protection.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P331	Do NOT induce vomiting.
P370+P378	In case of fire: Use sand, carbon dioxide or powder extinguisher to extinguish.
P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents and container in accordance with local, regional, national and international regulations.

2.3 Other hazards

Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) in a concentration of $\geq 0.1\%$.

3 Composition/ Information on ingredients

3.1 Substances

Not relevant (mixture)

3.2 Mixtures

Description of the mixture

Name of substance	Other names or synonyms	Identifier	Wt%	Classification acc. to GHS
Distillates (petroleum), straight-run middle	Mineral seal oil	CAS No 64741-44-2	10 – < 30	Flam. Liq. 3 / H226 Acute Tox. 4 / H332 Asp. Tox. 1 / H304
Quaternary ammonium compounds, dicoco alkyl dimethyl, chlorides	Di-Alkyl Quaternary Ammonium Chloride	CAS No 61789-77-3	5 – < 10	Acute Tox. 4 / H302 Skin Corr. 1C / H314 Eye Dam. 1 / H318
2-butoxyethanol	ethyleneglycol monobutyl ether butyl cellosolve	CAS No 111-76-2	5 – < 10	Flam. Liq. 4 / H227 Acute Tox. 4 / H302 Acute Tox. 3 / H311 Acute Tox. 3 / H331 Skin Irrit. 2 / H315 Eye Irrit. 2 / H319
propan-2-ol	isopropyl alcohol isopropanol Propan-2-ol	CAS No 67-63-0	1 – < 5	Flam. Liq. 2 / H225 Eye Irrit. 2 / H319 STOT SE 3 / H336

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Name of substance	Other names or synonyms	Identifier	Wt%	Classification acc. to GHS
1-Propanaminium, 3-amino-N-(carboxymethyl)-N,N-dimethyl-, N-coco acyl derivs., hydroxides, inner salts	Cocamidopropyl Betaine	CAS No 61789-40-0	1 – < 5	Skin Irrit. 2 / H315 Eye Irrit. 2 / H319
Amines, C10-16-alkyldimethyl, N-oxides	Lauryl Dimethyl Amine Oxide	CAS No 70592-80-2	1 – < 5	Acute Tox. 4 / H302 Skin Irrit. 2 / H315 Eye Dam. 1 / H318
Amines, C14-18 and C16-18-unsatd. alkyl, ethoxylated	Ethoxylated Fatty Acid Amine	CAS No 68155-39-5	1 – < 5	Acute Tox. 3 / H301 Skin Irrit. 2 / H315 Eye Dam. 1 / H318
Alcohols, C9-11, ethoxylated	Alcohol Ethoxylate	CAS No 68439-46-3	1 – < 5	Acute Tox. 4 / H302 Eye Dam. 1 / H318
ethyl acetate	Ethyl acetate	CAS No 141-78-6	1 – < 5	Flam. Liq. 2 / H225 Eye Irrit. 2 / H319 STOT SE 3 / H336
(R)-p-mentha-1,8-diene	4-isopropenyl-1-methylcyclohexene	CAS No 5989-27-5	< 0.1	Flam. Liq. 3 / H226 Skin Irrit. 2 / H315 Skin Sens. 1 / H317 Asp. Tox. 1 / H304

Remarks

The specific chemical identity and/or exact percentage of composition (concentration) has been withheld as a trade secret. For full text of abbreviations: see SECTION 16.

4 First-aid measures

4.1 Description of first-aid measures

General notes

Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth.

Following inhalation

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. In case of respiratory tract irritation, consult a physician. Provide fresh air.

Following skin contact

Wash with plenty of soap and water.

Following eye contact

Remove contact lenses, if present and easy to do. Continue rinsing. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart.

Following ingestion

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed

Impairment of vision. Production of tissue damage in the eye. Conjunctivitis (pink eye). Localized redness, edema, pruritis and/or pain.

4.3 Indication of any immediate medical attention and special treatment needed

Rinse immediately carefully and thoroughly with eye shower or water. Treat symptomatically.

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5 Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water spray, BC-powder, Carbon dioxide (CO₂)

Unsuitable extinguishing media

Water jet

5.2 Special hazards arising from the substance or mixture

In case of insufficient ventilation and/or in use, may form flammable/explosive vapor-air mixture. Solvent vapors are heavier than air and may spread along floors. Places which are not ventilated, e.g. unventilated below ground level areas such as trenches, conduits and shafts, are particularly prone to the presence of flammable substances or mixtures.

Hazardous combustion products

Nitrogen oxides (NO_x), Carbon monoxide (CO), Carbon dioxide (CO₂)

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Coordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

Special protective equipment for firefighters

Chemical protective clothing, Eye and face protection, Wear self-contained breathing apparatus

6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Remove persons to safety. Prevent skin contact. Wearing of suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing.

For emergency responders

Wear breathing apparatus if exposed to vapors/dust/aerosols/gases.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Eliminate all ignition sources if safe to do so, Set up barriers, Covering of drains

Advice on how to clean up a spill

Wipe up with absorbent material (e.g. cloth, fleece). Collect spillage: sawdust, kieselgur (diatomite), sand, universal binder

Appropriate containment techniques

Use of adsorbent materials.

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

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7 Handling and storage

7.1 Precautions for safe handling

Recommendations

- Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation. Avoidance of ignition sources. Keep away from sources of ignition - No smoking. Take precautionary measures against static discharge. Use only in well-ventilated areas. Due to danger of explosion, prevent leakage of vapours into cellars, flues and ditches. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools.

- Specific notes/details

Places which are not ventilated, e.g. unventilated below ground level areas such as trenches, conduits and shafts, are particularly prone to the presence of flammable substances or mixtures. Vapors are heavier than air, spread along floors and form explosive mixtures with air. Vapors may form explosive mixtures with air.

Advice on general occupational hygiene

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities

- Explosive atmospheres

Keep container tightly closed and in a well-ventilated place. Use local and general ventilation. Keep cool. Protect from sunlight.

- Flammability hazards

Keep away from sources of ignition - No smoking. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharge. Protect from sunlight.

- Incompatible substances or mixtures

Oxidizers

- General rule

Keep out of reach of children. Store in a dry place. Store in a closed container. Store in a well-ventilated place. Keep away from incompatible materials.

- Ventilation requirements

Use local and general ventilation. Ground/bond container and receiving equipment.

7.3 Specific end use(s)

See section 16 for a general overview.

8 Exposure controls/ Personal protection

8.1 Control parameters

Occupational exposure limit values (Workplace Exposure Limits)											
Coun-try	Name of agent	CAS No	Identi-fier	TWA [ppm]	TWA [mg/m³]	STEL [ppm]	STEL [mg/m³]	Ceiling-C [ppm]	Ceiling-C [mg/m³]	Nota-tion	Source
CA	2-butoxyethanol	111-76-2	PEV/VE A	20							Regula-tion OHS
CA	2-butoxyethanol (EGBE)	111-76-2	OEL (BC)	20							"BC Regula-tion"
CA	2-butoxyethanol (EGBE)	111-76-2	OEL (ON-MoL)	20							MoL
CA	2-butoxyethanol (ethylene glycol	111-76-2	OEL (AB)	20	97						OHS Code

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Occupational exposure limit values (Workplace Exposure Limits)											
Country	Name of agent	CAS No	Identifier	TWA [ppm]	TWA [mg/m³]	STEL [ppm]	STEL [mg/m³]	Ceiling-C [ppm]	Ceiling-C [mg/m³]	Notation	Source
	monobutyl ether)										
CA	ethyl acetate	141-78-6	OEL (AB)	400	1,440						OHS Code
CA	ethyl acetate	141-78-6	OEL (BC)	150							"BC Regulation"
CA	ethyl acetate	141-78-6	OEL (ON-MoL)	400							MoL
CA	ethyl acetate	141-78-6	PEV/VE A	400	1,440						Regulation OHS
CA	1,2-propylene glycol	57-55-6	OEL (ON)		10					aerosol	Regulation 833
CA	1,2-propylene glycol	57-55-6	OEL (ON-MoL)		10					aerosol	MoL
CA	1,2-propylene glycol	57-55-6	OEL (ON)	50	155					va	Regulation 833
CA	1,2-propylene glycol	57-55-6	OEL (ON-MoL)	50	155					va	MoL
CA	2-propanol	67-63-0	OEL (ON-MoL)	200		400					MoL
CA	2-propanol (isopropyl alcohol) (propan-2-ol)	67-63-0	OEL (AB)	200	492	400	984				OHS Code
CA	isopropanol (isopropyl alcohol) (2-propanol)	67-63-0	OEL (BC)	200		400					"BC Regulation"
CA	isopropyl alcohol	67-63-0	PEV/VE A	200		400					Regulation OHS

Notation

aerosol	as aerosols
Ceiling-C	ceiling value is a limit value above which exposure should not occur
STEL	short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)
TWA	time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours
	time-weighted average (unless otherwise specified)
va	as vapors and aerosols

Relevant DNELs of components						
Name of substance	CAS No	Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time
Distillates (petroleum), straight-run middle	64741-44-2	DNEL	16.4 mg/m³	human, inhalatory	worker (industry)	chronic - systemic effects
Distillates (petro-	64741-44-2	DNEL	1,501 mg/m³	human, inhalatory	worker (industry)	acute - systemic ef-

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Relevant DNELs of components						
Name of substance	CAS No	Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time
leum), straight-run middle						fects
Distillates (petroleum), straight-run middle	64741-44-2	DNEL	2.91 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
2-butoxyethanol	111-76-2	DNEL	98 mg/m ³	human, inhalatory	worker (industry)	chronic - systemic effects
2-butoxyethanol	111-76-2	DNEL	1,091 mg/m ³	human, inhalatory	worker (industry)	acute - systemic effects
2-butoxyethanol	111-76-2	DNEL	246 mg/m ³	human, inhalatory	worker (industry)	acute - local effects
propan-2-ol	67-63-0	DNEL	500 mg/m ³	human, inhalatory	worker (industry)	chronic - systemic effects
propan-2-ol	67-63-0	DNEL	888 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
1-Propanaminium, 3-amino-N-(carboxymethyl)-N,N-dimethyl-, N-coco acyl derivs., hydroxides, inner salts	61789-40-0	DNEL	8.22 mg/m ³	human, inhalatory	worker (industry)	chronic - systemic effects
1-Propanaminium, 3-amino-N-(carboxymethyl)-N,N-dimethyl-, N-coco acyl derivs., hydroxides, inner salts	61789-40-0	DNEL	2.33 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
Alcohols, C9-11, ethoxylated	68439-46-3	DNEL	294 mg/m ³	human, inhalatory	worker (industry)	chronic - systemic effects
Alcohols, C9-11, ethoxylated	68439-46-3	DNEL	2,080 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
ethyl acetate	141-78-6	DNEL	734 mg/m ³	human, inhalatory	worker (industry)	chronic - systemic effects
ethyl acetate	141-78-6	DNEL	1,468 mg/m ³	human, inhalatory	worker (industry)	acute - systemic effects
ethyl acetate	141-78-6	DNEL	734 mg/m ³	human, inhalatory	worker (industry)	chronic - local effects
ethyl acetate	141-78-6	DNEL	1,468 mg/m ³	human, inhalatory	worker (industry)	acute - local effects
ethyl acetate	141-78-6	DNEL	63 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
(R)-p-mentha-1,8-diene	5989-27-5	DNEL	66.7 mg/m ³	human, inhalatory	worker (industry)	chronic - systemic effects
(R)-p-mentha-1,8-diene	5989-27-5	DNEL	9.5 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects

Relevant PNECs of components						
Name of substance	CAS No	Endpoint	Threshold level	Organism	Environmental compartment	Exposure time
2-butoxyethanol	111-76-2	PNEC	8.8 mg/l	aquatic organisms	freshwater	short-term (single instance)

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Relevant PNECs of components						
Name of substance	CAS No	Endpoint	Threshold level	Organism	Environmental compartment	Exposure time
2-butoxyethanol	111-76-2	PNEC	0.88 mg/l	aquatic organisms	marine water	short-term (single instance)
2-butoxyethanol	111-76-2	PNEC	463 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
2-butoxyethanol	111-76-2	PNEC	34.6 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
2-butoxyethanol	111-76-2	PNEC	3.46 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
2-butoxyethanol	111-76-2	PNEC	2.33 mg/kg	terrestrial organisms	soil	short-term (single instance)
propan-2-ol	67-63-0	PNEC	140.9 mg/l	aquatic organisms	freshwater	short-term (single instance)
propan-2-ol	67-63-0	PNEC	140.9 mg/l	aquatic organisms	marine water	short-term (single instance)
propan-2-ol	67-63-0	PNEC	2,251 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
propan-2-ol	67-63-0	PNEC	552 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
propan-2-ol	67-63-0	PNEC	552 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
propan-2-ol	67-63-0	PNEC	28 mg/kg	terrestrial organisms	soil	short-term (single instance)
1-Propanaminium, 3-amino-N-(carboxymethyl)-N,N-dimethyl-, N-coco acyl derivs., hydroxides, inner salts	61789-40-0	PNEC	3.2 µg/l	aquatic organisms	freshwater	short-term (single instance)
1-Propanaminium, 3-amino-N-(carboxymethyl)-N,N-dimethyl-, N-coco acyl derivs., hydroxides, inner salts	61789-40-0	PNEC	0.32 µg/l	aquatic organisms	marine water	short-term (single instance)
1-Propanaminium, 3-amino-N-(carboxymethyl)-N,N-dimethyl-, N-coco acyl derivs., hydroxides, inner salts	61789-40-0	PNEC	300 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
1-Propanaminium, 3-amino-N-(carboxymethyl)-N,N-dimethyl-, N-coco acyl derivs., hydroxides, inner salts	61789-40-0	PNEC	0.219 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
1-Propanaminium, 3-amino-N-(carboxymethyl)-N,N-dimethyl-, N-coco acyl derivs., hydroxides, inner salts	61789-40-0	PNEC	21.9 µg/kg	aquatic organisms	marine sediment	short-term (single instance)
1-Propanaminium, 3-amino-N-(carboxymethyl)-N,N-dimethyl-, N-coco acyl derivs., hydroxides, inner salts	61789-40-0	PNEC	41.9 µg/kg	terrestrial organisms	soil	short-term (single instance)

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Relevant PNECs of components						
Name of substance	CAS No	Endpoint	Threshold level	Organism	Environmental compartment	Exposure time
, N-coco acyl derivs., hydroxides, inner salts						
Alcohols, C9-11, ethoxylated	68439-46-3	PNEC	0.104 mg/l	aquatic organisms	freshwater	short-term (single instance)
Alcohols, C9-11, ethoxylated	68439-46-3	PNEC	0.104 mg/l	aquatic organisms	marine water	short-term (single instance)
Alcohols, C9-11, ethoxylated	68439-46-3	PNEC	1.4 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
Alcohols, C9-11, ethoxylated	68439-46-3	PNEC	13.7 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
Alcohols, C9-11, ethoxylated	68439-46-3	PNEC	13.7 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
Alcohols, C9-11, ethoxylated	68439-46-3	PNEC	1 mg/kg	terrestrial organisms	soil	short-term (single instance)
ethyl acetate	141-78-6	PNEC	0.24 mg/l	aquatic organisms	freshwater	short-term (single instance)
ethyl acetate	141-78-6	PNEC	0.024 mg/l	aquatic organisms	marine water	short-term (single instance)
ethyl acetate	141-78-6	PNEC	650 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
ethyl acetate	141-78-6	PNEC	1.15 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
ethyl acetate	141-78-6	PNEC	0.115 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
ethyl acetate	141-78-6	PNEC	0.148 mg/kg	terrestrial organisms	soil	short-term (single instance)
(R)-p-mentha-1,8-diene	5989-27-5	PNEC	14 µg/l	aquatic organisms	freshwater	short-term (single instance)
(R)-p-mentha-1,8-diene	5989-27-5	PNEC	1.4 µg/l	aquatic organisms	marine water	short-term (single instance)
(R)-p-mentha-1,8-diene	5989-27-5	PNEC	1.8 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
(R)-p-mentha-1,8-diene	5989-27-5	PNEC	3.85 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
(R)-p-mentha-1,8-diene	5989-27-5	PNEC	0.385 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
(R)-p-mentha-1,8-diene	5989-27-5	PNEC	0.763 mg/kg	terrestrial organisms	soil	short-term (single instance)

8.2 Exposure controls

Appropriate engineering controls

General ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection

Wear eye/face protection. Use protective eyewear to guard against splash of liquids.

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Skin protection

- Hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. Check leak-tightness/impermeability prior to use. In the case of wanting to use the gloves again, clean them before taking off and air them well. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

- Other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended. Wash hands thoroughly after handling.

Body protection

Protective clothing against liquid chemicals.

Respiratory protection

Full face mask/half mask/quarter mask (EN 136/140). Type : A (against organic gases and vapors with a boiling point of > 65 °C , color code: Brown).

Environmental exposure controls

Avoid release to the environment. Keep away from drains, surface and ground water.

9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	liquid
Color	dark violet
Odor	Grape
Odor threshold	no data available
Melting point/freezing point	not determined
Boiling point or initial boiling point and boiling range	not determined
Evaporation rate	not determined
Flammability	flammable liquid in accordance with GHS criteria
Lower and upper explosion limit	not determined
Flash point	53 °C (Product does not sustain combustion per UN SUSTAINED COMBUSTIBILITY TEST prescribed in the Manual of Tests and Criteria, Part III, sub-section 32.5.2)
Auto-ignition temperature	not determined
Decomposition temperature	not relevant
pH (value)	7 – 9 (23 °C)
Kinematic viscosity	not determined
Solubility(ies)	not determined

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Partition coefficient

Partition coefficient n-octanol/water (log value)	this information is not available
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Vapor pressure	not determined
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Density and/or relative density

Density	not determined
Relative vapour density	information on this property is not available
Relative density	0.95 (water = 1)

Particle characteristics	not relevant (liquid)
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9.2 Other information

Information with regard to physical hazard classes	there is no additional information
Other safety characteristics	there is no additional information

10 Stability and reactivity

10.1 Reactivity

This material is not reactive under normal ambient conditions. Concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials". The mixture contains reactive substance(s). Risk of ignition.

If heated:

Risk of ignition

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure. See below "Conditions to avoid".

10.3 Possibility of hazardous reactions

No known hazardous reactions.

10.4 Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Hints to prevent fire or explosion

Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools. Take precautionary measures against static discharge.

10.5 Incompatible materials

Oxidizers

10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

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11 Toxicological information

11.1 Information on toxicological effects

Test data are not available for the complete mixture.

Classification procedure

The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

Classification acc. to GHS

Acute toxicity

Shall not be classified as acutely toxic.

GHS of the United Nations, annex 4: May be harmful if swallowed or if inhaled.

Acute toxicity estimate (ATE) of components			
Name of substance	CAS No	Exposure route	ATE
Distillates (petroleum), straight-run middle	64741-44-2	inhalation: vapour	11 mg/l/4h
Distillates (petroleum), straight-run middle	64741-44-2	inhalation: dust/mist	>2.53 mg/l/4h
Quaternary ammonium compounds, dicoco alkyl dimethyl, chlorides	61789-77-3	oral	500 mg/kg
2-butoxyethanol	111-76-2	oral	530 mg/kg
2-butoxyethanol	111-76-2	dermal	667 mg/kg
2-butoxyethanol	111-76-2	inhalation: vapour	≥3.9 mg/l/4h
Amines, C10-16-alkyldimethyl, N-oxides	70592-80-2	oral	>600 mg/kg
Amines, C14-18 and C16-18-unsatd. alkyl, ethoxylated	68155-39-5	oral	300 mg/kg
Alcohols, C9-11, ethoxylated	68439-46-3	oral	500 mg/kg

Acute toxicity of components					
Name of substance	CAS No	Exposure route	Endpoint	Value	Species
Distillates (petroleum), straight-run middle	64741-44-2	inhalation: dust/mist	LC50	>2.53 mg/l/4h	rat
Distillates (petroleum), straight-run middle	64741-44-2	dermal	LD50	>2,000 mg/kg	rabbit
2-butoxyethanol	111-76-2	oral	LD50	530 mg/kg	rat
2-butoxyethanol	111-76-2	inhalation: vapour	LC50	≥3.9 mg/l/4h	rat
2-butoxyethanol	111-76-2	inhalation: vapour	LC50	2.175 mg/l/4h	rat
2-butoxyethanol	111-76-2	dermal	LD50	667 – 1,060 mg/kg	rabbit
2-butoxyethanol	111-76-2	dermal	LD50	400 – 500 mg/kg	rabbit
1-Propanaminium, 3-amino-N-(carboxymethyl)-N,N-dimethyl-, N-coco acyl derivs., hydroxides, inner salts	61789-40-0	oral	LD50	>5,000 mg/kg	rat
Amines, C10-16-alkyldimethyl, N-oxides	70592-80-2	oral	LD50	>600 mg/kg	rat
Amines, C10-16-alkyldimethyl, N-oxides	70592-80-2	oral	LD50	>520 mg/kg	rabbit

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Acute toxicity of components					
Name of substance	CAS No	Exposure route	Endpoint	Value	Species
Amines, C14-18 and C16-18-unsatd. alkyl, ethoxylated	68155-39-5	oral	LD50	300 – 2,000 mg/kg	rat
Alcohols, C9-11, ethoxylated	68439-46-3	oral	LD50	<2,000 mg/kg	rat
Alcohols, C9-11, ethoxylated	68439-46-3	dermal	LD50	>2,000 mg/kg	rabbit
ethyl acetate	141-78-6	dermal	LD50	>20,000 mg/kg	rabbit
(R)-p-mentha-1,8-diene	5989-27-5	oral	LD50	>2,000 mg/kg	rat

Skin corrosion/irritation

Causes skin irritation. In vitro skin corrosion: human skin model test. Shall not be classified as corrosive to skin.

Serious eye damage/eye irritation

Causes serious eye damage.

Respiratory or skin sensitization

Shall not be classified as a respiratory or skin sensitizer.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Shall not be classified as carcinogenic.

- IARC Monographs (WHO)

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans			
Name of substance	CAS No	Classification	Number
2-butoxyethanol	111-76-2	3	
propan-2-ol	67-63-0	3	
(R)-p-mentha-1,8-diene	5989-27-5	3	

Legend

3 Not classifiable as to carcinogenicity in humans

Reproductive toxicity

Shall not be classified as a reproductive toxicant.

Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard

May be fatal if swallowed and enters airways.

Information on likely routes of exposure

If on skin, If inhaled, If in eyes

Symptoms related to the physical, chemical and toxicological characteristics

If swallowed:

Diarrhoea, Vomiting, Abdominal pain

If in eyes:

Causes tears, Production of tissue damage in the eye, Conjunctivitis (pink eye), Risk of blindness

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If inhaled:

Cough, Headache

If on skin:

Pruritis, Localized redness

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation and significant inflammation of the skin (dermatitis) due to the defatting properties of the product may be caused by repeated or prolonged exposure.

12 Ecological information

12.1 Toxicity

Toxic to aquatic life with long lasting effects.

Aquatic toxicity (acute) of components					
Name of substance	CAS No	Endpoint	Value	Species	Exposure time
Distillates (petroleum), straight-run middle	64741-44-2	LL50	>100 mg/l	fish	24 h
Distillates (petroleum), straight-run middle	64741-44-2	EL50	>1,000 mg/l	aquatic invertebrates	24 h
Quaternary ammonium compounds, dicoco alkyl dimethyl, chlorides	61789-77-3	LC50	1.04 mg/l	bluegill (Lepomis macrochirus)	96 h
Quaternary ammonium compounds, dicoco alkyl dimethyl, chlorides	61789-77-3	LC50	0.16 mg/l	daphnia magna	48 h
Quaternary ammonium compounds, dicoco alkyl dimethyl, chlorides	61789-77-3	EC50	0.46 mg/l	algae	96 h
2-butoxyethanol	111-76-2	LC50	1,474 mg/l	fish	96 h
2-butoxyethanol	111-76-2	EC50	1,550 mg/l	aquatic invertebrates	48 h
2-butoxyethanol	111-76-2	ErC50	1,840 mg/l	algae	72 h
propan-2-ol	67-63-0	LC50	10,000 mg/l	fish	96 h
1-Propanaminium, 3-amino-N-(carboxymethyl)-N,N-dimethyl-, N-coco acyl derivs., hydroxides, inner salts	61789-40-0	LC50	2 mg/l	fish	96 h
1-Propanaminium, 3-amino-N-(carboxymethyl)-N,N-dimethyl-, N-coco acyl derivs., hydroxides, inner salts	61789-40-0	EC50	6.4 mg/l	aquatic invertebrates	48 h
Amines, C10-16-alkyl dimethyl, N-oxides	70592-80-2	LC50	1,010 µg/l	daphnia magna	96 h
Amines, C10-16-alkyl dimethyl, N-oxides	70592-80-2	LC50	2.6 – 3.5 mg/l	fish	96 h
Amines, C14-18 and C16-18-unsatd. alkyl, ethoxylated	68155-39-5	LC50	>0.1 – 1 mg/l	rainbow trout (Oncorhynchus mykiss)	96 h
Amines, C14-18 and C16-18-unsatd. alkyl, ethoxylated	68155-39-5	EC50	>0.1 – 1 mg/l	daphnia magna	48 h
Alcohols, C9-11, eth-	68439-46-3	LC50	7 mg/l	fish	96 h

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Aquatic toxicity (acute) of components

Name of substance	CAS No	Endpoint	Value	Species	Exposure time
oxylated					
Alcohols, C9-11, eth-oxylated	68439-46-3	EC50	2.5 mg/l	aquatic invertebrates	48 h
ethyl acetate	141-78-6	LC50	230 mg/l	fish	96 h
ethyl acetate	141-78-6	EC50	220 mg/l	fish	96 h
(R)-p-mentha-1,8-diene	5989-27-5	LC50	720 µg/l	fish	96 h
(R)-p-mentha-1,8-diene	5989-27-5	EC50	688 µg/l	fish	96 h
(R)-p-mentha-1,8-diene	5989-27-5	ErC50	0.32 mg/l	algae	72 h

Aquatic toxicity (chronic) of components

Name of substance	CAS No	Endpoint	Value	Species	Exposure time
Distillates (petroleum), straight-run middle	64741-44-2	EL50	>1,000 mg/l	microorganisms	40 h
2-butoxyethanol	111-76-2	EC50	297 mg/l	aquatic invertebrates	21 d
Alcohols, C9-11, eth-oxylated	68439-46-3	EC50	140 mg/l	microorganisms	3 h
(R)-p-mentha-1,8-diene	5989-27-5	EC50	<0.67 mg/l	fish	8 d
(R)-p-mentha-1,8-diene	5989-27-5	LC50	0.41 mg/l	fish	8 d

12.2 Persistence and degradability

Biodegradation

The surfactant contained in this preparation complies with the biodegradability criteria as laid down in Regulation (EC) No 648/2004 on detergents.

Degradability of components

Name of substance	CAS No	Process	Degradation rate	Time	Method	Source
Distillates (petroleum), straight-run middle	64741-44-2	oxygen depletion	57.5 %	28 d		ECHA
2-butoxyethanol	111-76-2	carbon dioxide generation	18.3 %	3 d		ECHA
propan-2-ol	67-63-0	oxygen depletion	53 %	5 d		ECHA
Amines, C14-18 and C16-18-unsatd. alkyl, eth-oxylated	68155-39-5	DOC removal	60 %	28 d		
ethyl acetate	141-78-6	oxygen depletion	62 %	5 d		ECHA
(R)-p-mentha-1,8-diene	5989-27-5	carbon dioxide generation	58.8 %	14 d		ECHA
(R)-p-mentha-1,8-diene	5989-27-5	oxygen depletion	80 %	28 d		ECHA

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12.3 Bioaccumulative potential

Data are not available.

Bioaccumulative potential of components				
Name of substance	CAS No	BCF	Log KOW	BOD5/COD
2-butoxyethanol	111-76-2		0.81 (pH value: 7, 25 °C)	
1-Propanaminium, 3-amino-N-(carboxymethyl)-N,N-dimethyl-, N-coco acyl derivs., hydroxides, inner salts	61789-40-0		-1.28	
Amines, C14-18 and C16-18-unsatd. alkyl, ethoxylated	68155-39-5	<500		
Alcohols, C9-11, ethoxylated	68439-46-3	12.7		
ethyl acetate	141-78-6	30	0.68 (pH value: 7, 25 °C)	
(R)-p-mentha-1,8-diene	5989-27-5		4.38 (pH value: 7.2, 37 °C)	

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

Data are not available.

12.6 Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) in a concentration of $\geq 0.1\%$.

12.7 Other adverse effects

Data are not available.

13 Disposal considerations

13.1 Waste treatment methods

Dispose of contents/container in accordance with local/regional/national/international regulations.

Waste treatment-relevant information

Solvent reclamation/regeneration.

Sewage disposal-relevant information

Do not empty into drains. Avoid release to the environment. Refer to special instructions/safety data sheets.

Waste treatment of containers/packages

Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

Remarks

Please consider the relevant national or regional provisions. Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities.

14 Transport information

14.1 UN number	not subject to transport regulations
14.2 UN proper shipping name	not relevant
14.3 Transport hazard class(es)	none
14.4 Packing group	not assigned
14.5 Environmental hazards	non-environmentally hazardous acc. to the dangerous goods regulations

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14.6 Special precautions for user

There is no additional information.

14.7 Transport in bulk according to IMO instruments

The cargo is not intended to be carried in bulk.

Information for each of the UN Model Regulations

Transport information - National regulations - Additional information (UN RTDG)

Not subject to transport regulations: UN RTDG

International Maritime Dangerous Goods Code (IMDG) - Additional information

Not subject to IMDG.

International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information

Not subject to ICAO-IATA.

15 Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

National regulations (United States)

Toxic Substance Control Act (TSCA)

all ingredients are listed (ACTIVE) or exempt from listing

Superfund Amendment and Reauthorization Act (SARA TITLE III)

- Specific Toxic Chemical Listings (EPCRA Section 313)

Toxics Release Inventory: Specific Toxic Chemical Listings			
Name of substance	CAS No	Remarks	Effective date
propan-2-ol	67-63-0	only persons who manufacture by the strong acid process are subject, supplier notification not required	1986-12-31

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

- List of Hazardous Substances and Reportable Quantities (CERCLA section 102a) (40 CFR 302.4)

Name of substance	CAS No	Remarks	Statutory code	Final RQ pounds (Kg)
ethyl acetate	141-78-6		4	5000 (2270)

Legend

4 "4" indicates that the source is section 3001 of the Resource Conservation and Recovery Act (RCRA)

Right to Know Hazardous Substance List

- Cleaning Product Right to Know Act Substance List (CA-RTK)

Name of substance	CAS No	Functionality	Authoritative Lists
Quaternary ammonium compounds, dicoco alkyl dimethyl, chlorides	61789-77-3		CECBP - Priority Chemicals
2-butoxyethanol	111-76-2		ATSDR Neurotoxics OEHA RELs
propan-2-ol	67-63-0		OEHA RELs
(R)-p-mentha-1,8-diene	5989-27-5		EU Fragrance Allergens

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- Toxic or Hazardous Substance List (MA-TURA)

Name of substance	CAS No	DEP CODE	PBT / HHS / LHS	PBT / HHS Threshold	De Minimis Concentration Threshold
2-butoxyethanol		1022			1.0 %
propan-2-ol	67-63-0				1.0 %
ethyl acetate	141-78-6				1.0 %

- Hazardous Substances List (MN-ERTK)

Name of substance	CAS No	References	Remarks
2-butoxyethanol	111-76-2	A, O	skin
propan-2-ol	67-63-0	A, N, O	
ethyl acetate	141-78-6	A, O	

Legend

- A American Conference of Governmental Industrial Hygienists (ACGIH), "Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices for 1992-93", available from ACGIH
- N National Institute for Occupational Safety and Health (NIOSH), "Recommendations for Occupational Safety and Health Standards," August 1988, available from NIOSH, Publications Dissemination Office, Division of Standards Development and Technology Transfer
- O Occupational Safety and Health Administration (OSHA), Safety and Health Standards, Code of Federal Regulations, title 29, part 1910, subpart Z, "Toxic and Hazardous Substances, 1990." General information: Minnesota Department of Labor and Industry, Occupational Safety and Health Division
- skin If a potential for absorption from skin contact merits special consideration, the word "skin" follows the substance name.

- Hazardous Substance List (NJ-RTK)

Name of substance	CAS No	Remarks	Classifications
2-butoxyethanol	111-76-2		CA F2
propan-2-ol	67-63-0		F3
ethyl acetate	141-78-6		F3
(R)-p-mentha-1,8-diene	138-86-3		F2

Legend

- CA Carcinogenic
- F2 Flammable - Second Degree
- F3 Flammable - Third Degree

- Hazardous Substance List (Chapter 323) (PA-RTK)

Name acc. to inventory	CAS No	Classification
ETHANOL, 2-BUTOXY-	111-76-2	
2-PROPANOL	67-63-0	E
ACETIC ACID ETHYL ESTER	141-78-6	E

Legend

- E Environmental hazard

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- Hazardous Substance List (RI-RTK)

Name of substance	CAS No	References
2-butoxyethanol	111-76-2	T
2-butoxyethanol	111-76-2	T
propan-2-ol	67-63-0	T, F
ethyl acetate	141-78-6	T, F

Legend

F Flammability (NFPA®)
T Toxicity (ACGIH®)

California Environmental Protection Agency (Cal/EPA): Proposition 65 - Safe Drinking Water and Toxic Enforcement Act of 1987

Proposition 65 List of chemicals			
Name acc. to inventory	CAS No	Conc.	Type of the toxicity
dichloroacetic acid	79-43-6	0.0003898 wt%	cancer
dichloroacetic acid	79-43-6	0.0003898 wt%	developmental, male
dichloromethane (methylene chloride)	75-09-2	0.01499 wt%	cancer

Industry or sector specific available guidance(s)

NPCA-HMIS® III

Hazardous Materials Identification System. American Coatings Association.

Category	Rating	Description
Chronic	*	chronic (long-term) health effects may result from repeated overexposure
Health	3	major injury likely unless prompt action is taken and medical treatment is given
Flammability	2	material that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur
Physical hazard	0	material that is normally stable, even under fire conditions, and will not react with water, polymerize, decompose, condense, or self-react. Non-explosive
Personal protection	-	

NFPA® 704

National Fire Protection Association: Standard System for the Identification of the Hazards of Materials for Emergency Response (United States).

Category	Degree of hazard	Description
Flammability	2	material that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur
Health	3	material that, under emergency conditions, can cause serious or permanent injury
Instability	0	material that is normally stable, even under fire conditions
Special hazard		

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National regulations (Canada)

Domestic Substances List (DSL)/Non-domestic Substances List (NDSL)

all ingredients are listed

National inventories

Country	Inventory	Status
EU	REACH Reg.	not all ingredients are listed
US	TSCA	all ingredients are listed (ACTIVE)
CA	DSL/NDSL	all ingredients are listed

Legend

DSL/NDSL Domestic Substances List (DSL)/Non-domestic Substances List (NDSL)
REACH Reg. REACH registered substances
TSCA Toxic Substance Control Act

15.2 Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.

16 Other information

Indication of changes (revised safety data sheet)

Revision. 2025-02-06.

Section	Former entry (text/value)	Actual entry (text/value)	Safety-relevant
12.5	Results of PBT and vPvB assessment: According to the results of its assessment, this substance is not a PBT or a vPvB.	Results of PBT and vPvB assessment: Data are not available.	yes
16	Indication of changes (revised safety data sheet): Revision. 2024-12-12.	Indication of changes (revised safety data sheet): Revision. 2025-02-06.	yes

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
"BC Regulation"	OHS Regulation: Section 5.48 (British Columbia)
ACGIH®	American Conference of Governmental Industrial Hygienists
Acute Tox.	Acute toxicity
Asp. Tox.	Aspiration hazard
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BOD	Biochemical Oxygen Demand
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
Ceiling-C	Ceiling value
COD	Chemical oxygen demand
DEP CODE	Department of Environmental Protection Code
DGR	Dangerous Goods Regulations (see IATA/DGR)
DNEL	Derived No-Effect Level
EC50	Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing

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Abbr.	Descriptions of used abbreviations
	50 % changes in response (e.g. on growth) during a specified time interval
ED	Endocrine disruptor
EL50	Effective Loading 50 %: the EL50 corresponds to the loading rate required to produce a response in 50% of the test organisms
ErC50	≡ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control
Eye Dam.	Seriously damaging to the eye
Eye Irrit.	Irritant to the eye
Flam. Liq.	Flammable liquid
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
HHS	Higher hazard substance
IARC	International Agency for Research on Cancer
IARC Monographs	IARC Monographs on the Evaluation of Carcinogenic Risks to Humans
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods Code
LC50	Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval
LD50	Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval
LHS	Lower hazard substance
LL50	Lethal Loading 50 %: the LL50 corresponds to the loading rate causing 50 % lethality
log KOW	n-Octanol/water
MoL	Ministry of Labor: Current Occupational Exposure Limits for Ontario Workplaces Required under Regulation 833
NFPA®	National Fire Protection Association (United States)
NPCA-HMIS® III	National Paint and Coatings Association: Hazardous Materials Identification System - HMIS® III, Third Edition
OHS Code	Occupational Health and Safety Code: Occupational exposure limits for chemical substances (Alberta)
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
ppm	Parts per million
Regulation 833	R.R.O. 1990, Reg. 833: Control of exposure to biological or chemical agents (Ontario)
Regulation OHS	Regulation respecting occupational health and safety: Permissible exposure values for airborne contaminants (Quebec)
RTECS	Registry of Toxic Effects of Chemical Substances (database of NIOSH with toxicological information)
Skin Corr.	Corrosive to skin
Skin Irrit.	Irritant to skin
Skin Sens.	Skin sensitization
STEL	Short-term exposure limit
STOT SE	Specific target organ toxicity - single exposure

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Abbr.	Descriptions of used abbreviations
TWA	Time-weighted average
UN RTDG	UN Recommendations on the Transport of Dangerous Good
vPvB	Very Persistent and very Bioaccumulative

Key literature references and sources for data

Hazardous Products Regulations (HPR)
SOR/2022-272: Regulations Amending the Hazardous Products Regulations (GHS, Seventh Revised Edition)
UN Recommendations on the Transport of Dangerous Good. International Maritime Dangerous Goods Code (IMDG).
Dangerous Goods Regulations (DGR) for the air transport (IATA).

Classification procedure

Physical and chemical properties: The classification is based on tested mixture.
Health hazards, Environmental hazards: The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

List of relevant phrases (code and full text as stated in section 2 and 3)

Code	Text
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H227	Combustible liquid.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H336	May cause drowsiness or dizziness.

Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.