Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

AESUB Blue

Version number: 3.1
Replaces version of: 27.01.2025 (2)

Revision: 29.06.2026

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name	**AESUB Blue**
Registration number (REACH)	not relevant (mixture)
Unique formula identifier (UFI)	6XR2-T0PV-200C-YJHR

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

Relevant identified uses: coating

1.3 Details of the supplier of the safety data sheet

Scanningspray Vertriebs GmbH
Johann-Strauß-Str. 13
45657 Recklinghausen
Germany

e-mail: info@aesub.com
Website: www.aesub.com

e-mail (competent person): liese@aesub.com (Max Liese)

1.4 Emergency telephone number

(CCN 994267 / WISAG FMO Cargo Service GmbH & Co. KG)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

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

Section	Hazard class	Category	Hazard class and category	Hazard statement
2.3	aerosols	1	Aerosol 1	H222,H229
3.8D	specific target organ toxicity - single exposure (narcotic effects, drowsiness)	3	STOT SE 3	H336
4.1C	hazardous to the aquatic environment - chronic hazard	3	Aquatic Chronic 3	H412

For full text of abbreviations: see SECTION 16.

The most important adverse physicochemical, human health and environmental effects

Spillage and fire water can cause pollution of watercourses.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

- Signal word: danger
- Pictograms

GHS02, GHS07



- Hazard statements

H222	Extremely flammable aerosol.
H229	Pressurised container: May burst if heated.
H336	May cause drowsiness or dizziness.
H412	Harmful to aquatic life with long lasting effects.

- Precautionary statements

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.
P103	Read carefully and follow all instructions.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P211	Do not spray on an open flame or other ignition source.
P251	Do not pierce or burn, even after use.
P271	Use only outdoors or in a well-ventilated area.
P405	Store locked up.
P410+P412	Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.
P501	Dispose of contents/container to industrial combustion plant.

- Supplemental hazard information

EUH066	Repeated exposure may cause skin dryness or cracking.

Additional labelling according to Directive 75/324/EEC relating to aerosol dispensers

Extremely flammable aerosol. Pressurised container: May burst if heated. If medical advice is needed, have product container or label at hand. Keep out of reach of children. Read carefully and follow all instructions. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not spray on an open flame or other ignition source. Do not pierce or burn, even after use. Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.

- Hazardous ingredients for labelling: cyclopentane, Hydrocarbons, C6-C7, iso-alkanes, cyclic, < 5% n-hexane, Hydrocarbons, C6-C7, n-alkanes, iso-alkanes, cyclic, < 5% n-hexane, Hydrocarbons, C7, n-alkanes, iso-alkanes, cyclic

2.3 Other hazards

Repeated exposure may cause skin dryness or cracking.

Results of PBT and vPvB assessment

Does not contain a PBT-/vPvB-substance at a concentration of ≥ 0,1%.

Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of ≥ 0,1%.

SECTION 3: Composition/information on ingredients

3.1 Substances

Not relevant (mixture)

3.2 Mixtures

Description of the mixture

Hazardous ingredients acc. to GHS

Name of substance	Identifier	Wt%	Classification acc. to GHS	Pictograms	M-Factors
cyclopentane	CAS No 287-92-3 EC No 206-016-6 Index No 601-030-00-2	25 - < 50	Flam. Liq. 2 / H225 STOT SE 3 / H336 Asp. Tox. 1 / H304 Aquatic Chronic 3 / H412		

Hazardous ingredients acc. to GHS

Name of substance	Identifier	Wt%	Classification acc. to GHS	Pictograms	M-Factors
	REACH Reg. No 01-2119463053-47				
propane	CAS No 74-98-6 EC No 200-827-9 Index No 601-003-00-5 REACH Reg. No 01-2119486944-21-xxxx	25 - < 50	Flam. Gas 1A / H220 Press. Gas L / H280		
bioethanol	CAS No 64-17-5 EC No 200-578-6 Index No 603-002-00-5 REACH Reg. No 01-2119457610-43-xxxx	10 - < 25	Flam. Liq. 2 / H225 Eye Irrit. 2 / H319		
Tricyclo[3.3.1.13,7]decane	CAS No 281-23-2 EC No 206-001-4 REACH Reg. No 01-2120041464-63-xxxx	5 - < 10	Aquatic Acute 1 / H400 Aquatic Chronic 4 / H413		
Hydrocarbons, C6-C7, iso-alkanes, cyclic, < 5% n-hexane	EC No 926-605-8 REACH Reg. No 01-2119486291-36-xxxx	1 - < 5	Flam. Liq. 2 / H225 STOT SE 3 / H336 Asp. Tox. 1 / H304 Aquatic Chronic 2 / H411 EUH066		
Hydrocarbons, C6-C7, n-alkanes, iso-alkanes, cyclic, < 5% n-hexane	EC No 921-024-6 REACH Reg. No 01-2119475514-35-xxxx	1 - < 5	Flam. Liq. 2 / H225 Skin Irrit. 2 / H315 STOT SE 3 / H336 Asp. Tox. 1 / H304 Aquatic Chronic 2 / H411		
Hydrocarbons, C6, iso-alkanes, <5% n-hexane	EC No 931-254-9 REACH Reg. No 01-2119484651-34-xxxx	1 - < 5	Flam. Liq. 2 / H225 Skin Irrit. 2 / H315 STOT SE 3 / H336 Asp. Tox. 1 / H304 Aquatic Chronic 2 / H411		
Hydrocarbons, C7, n-alkanes, iso-alkanes, cyclic	EC No 927-510-4 REACH Reg. No 01-2119475515-33-xxxx	1 - < 5	Flam. Liq. 2 / H225 Skin Irrit. 2 / H315 STOT SE 3 / H336 Asp. Tox. 1 / H304 Aquatic Chronic 2 / H411		

Hazardous ingredients acc. to GHS

Name of substance	Identifier	Wt%	Classification acc. to GHS	Pictograms	M-Factors
hexane	CAS No 110-54-3 EC No 203-777-6 Index No 601-037-00-0 REACH Reg. No 01-2119480412-44-xxxx	< 1	Flam. Liq. 2 / H225 Skin Irrit. 2 / H315 Repr. 2 / H361f STOT SE 3 / H336 STOT RE 1 / H372 Asp. Tox. 1 / H304 Aquatic Chronic 2 / H411		

Name of substance	Specific Conc. Limits	M-Factors	ATE	Exposure route
bioethanol	Eye Irrit. 2; H319: C ≥ 50 %	-	-	

Remarks

For full text of abbreviations: see SECTION 16

SECTION 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. Provide fresh air.

Following skin contact

Wash with plenty of soap and water. Take off contaminated clothing. Thaw frosted parts with lukewarm water. Do not rub affected area.

Following eye contact

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

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

Narcotic effects.

4.3 Indication of any immediate medical attention and special treatment needed

none

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water spray, BC-powder

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 vapour-air mixture.

Hazardous combustion products

Carbon monoxide (CO), Carbon dioxide (CO2)

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Co-ordinate 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.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Follow emergency procedures such as the need to evacuate the danger area or to consult an expert. Remove persons to safety.

For emergency responders

Wear breathing apparatus if exposed to vapours/dust/spray/gases. Personal protective equipment shall be used when the risks cannot be avoided or sufficiently limited by technical means of collective protection or by measures, methods or procedures of work organization.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it. If substance has entered a water course or sewer, inform the responsible authority.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains

Advice on how to clean up a spill

Equipment required for containment/clean-up

Non-sparking tools and equipment, Collecting basins for spills, Personal protective equipment

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.

SECTION 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. Use only in well-ventilated areas. Prevent from heating up above 50 °C/122 °F. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

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

Managing of associated risks

- Explosive atmospheres

Use local and general ventilation. Prevent from heating up above 50 °C/122 °F. Protect from sunlight.

- Corrosive conditions

Protect from moisture.

- 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. Do not spray on an open flame or other ignition source. Protect from sunlight.

Control of effects

Do not pierce or burn, even after use.

Protect against external exposure, such as

Heat

- Packaging compatibilities

Only packagings which are approved (e.g. acc. to ADR) may be used.

- Storage class (LGK) - TRGS 510

LGK 2 B (aerosol dispensers or lighters)

7.3 Specific end use(s)

Coating

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

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
EU	n-hexane	110-54-3	IOELV	20	72						2006/15/EC

Notation

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)

Relevant DNELs of components of the mixture

Name of substance	CAS No	Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time
cyclopentane	287-92-3	DNEL	3,000 mg/m³	human, inhalatory	worker (industry)	chronic - systemic effects
cyclopentane	287-92-3	DNEL	432 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
cyclopentane	287-92-3	DNEL	643 mg/m³	human, inhalatory	consumer (private households)	chronic - systemic effects
cyclopentane	287-92-3	DNEL	214 mg/kg bw/day	human, dermal	consumer (private households)	chronic - systemic effects
cyclopentane	287-92-3	DNEL	214 mg/kg bw/day	human, oral	consumer (private households)	chronic - systemic effects
bioethanol	64-17-5	DNEL	1,900 mg/m³	human, inhalatory	worker (industry)	acute - local effects
bioethanol	64-17-5	DNEL	343 mg/kg	human, dermal	worker (industry)	chronic - systemic effects
bioethanol	64-17-5	DNEL	950 mg/m³	human, inhalatory	worker (industry)	chronic - systemic effects
bioethanol	64-17-5	DNEL	87 mg/kg	human, oral	consumer (private households)	chronic - systemic effects
bioethanol	64-17-5	DNEL	206 mg/kg	human, dermal	consumer (private households)	chronic - systemic effects

Relevant DNELs of components of the mixture

Name of substance	CAS No	Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time
bioethanol	64-17-5	DNEL	114 mg/m³	human, inhalatory	consumer (private households)	chronic - systemic effects
Hydrocarbons, C6-C7, iso-alkanes, cyclic, < 5% n-hexane		DNEL	13,964 mg/kg	human, dermal	worker (industry)	chronic - systemic effects
Hydrocarbons, C6-C7, iso-alkanes, cyclic, < 5% n-hexane		DNEL	5,306 mg/m³	human, inhalatory	worker (industry)	chronic - systemic effects
Hydrocarbons, C6-C7, iso-alkanes, cyclic, < 5% n-hexane		DNEL	1,301 mg/kg	human, oral	consumer (private households)	chronic - systemic effects
Hydrocarbons, C6-C7, iso-alkanes, cyclic, < 5% n-hexane		DNEL	1,377 mg/kg	human, dermal	consumer (private households)	chronic - systemic effects
Hydrocarbons, C6-C7, iso-alkanes, cyclic, < 5% n-hexane		DNEL	1,131 mg/m³	human, inhalatory	consumer (private households)	chronic - systemic effects
Hydrocarbons, C6-C7, n-alkanes, iso-alkanes, cyclic, < 5% n-hexane		DNEL	2,035 mg/m³	human, inhalatory	worker (industry)	chronic - systemic effects
Hydrocarbons, C6-C7, n-alkanes, iso-alkanes, cyclic, < 5% n-hexane		DNEL	773 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
Hydrocarbons, C6-C7, n-alkanes, iso-alkanes, cyclic, < 5% n-hexane		DNEL	608 mg/m³	human, inhalatory	consumer (private households)	chronic - systemic effects
Hydrocarbons, C6-C7, n-alkanes, iso-alkanes, cyclic, < 5% n-hexane		DNEL	699 mg/kg bw/day	human, dermal	consumer (private households)	chronic - systemic effects
Hydrocarbons, C6-C7, n-alkanes, iso-alkanes, cyclic, < 5% n-hexane		DNEL	699 mg/kg bw/day	human, oral	consumer (private households)	chronic - systemic effects
Hydrocarbons, C6, iso-alkanes, <5% n-hexane		DNEL	5,306 mg/m³	human, inhalatory	worker (industry)	chronic - systemic effects
Hydrocarbons, C6, iso-alkanes, <5% n-hexane		DNEL	13,964 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
Hydrocarbons, C6, iso-alkanes, <5% n-hexane		DNEL	1,131 mg/m³	human, inhalatory	consumer (private households)	chronic - systemic effects
Hydrocarbons, C6, iso-alkanes, <5% n-hexane		DNEL	1,377 mg/kg bw/day	human, dermal	consumer (private households)	chronic - systemic effects
Hydrocarbons, C6, iso-alkanes, <5% n-hexane		DNEL	1,301 mg/kg bw/day	human, oral	consumer (private households)	chronic - systemic effects
Hydrocarbons, C7, n-alkanes, iso-alkanes, cyclic		DNEL	300 mg/kg	human, dermal	worker (industry)	chronic - systemic effects
Hydrocarbons, C7, n-alkanes, iso-alkanes, cyclic		DNEL	2,085 mg/m³	human, inhalatory	worker (industry)	chronic - systemic effects
Hydrocarbons, C7, n-alkanes, iso-alkanes, cyclic		DNEL	149 mg/kg	human, oral	consumer (private households)	chronic - systemic effects
Hydrocarbons, C7, n-alkanes, iso-alkanes,		DNEL	149 mg/kg	human, dermal	consumer (private households)	chronic - systemic effects

Relevant DNELs of components of the mixture

Name of substance	CAS No	Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time
cyclic						
Hydrocarbons, C7, n-alkanes, iso-alkanes, cyclic		DNEL	447 mg/m³	human, inhalatory	consumer (private households)	chronic - systemic effects
hexane	110-54-3	DNEL	75 mg/m³	human, inhalatory	worker (industry)	chronic - systemic effects
hexane	110-54-3	DNEL	11 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
hexane	110-54-3	DNEL	16 mg/m³	human, inhalatory	consumer (private households)	chronic - systemic effects
hexane	110-54-3	DNEL	5.3 mg/kg bw/day	human, dermal	consumer (private households)	chronic - systemic effects
hexane	110-54-3	DNEL	4 mg/kg bw/day	human, oral	consumer (private households)	chronic - systemic effects

Relevant PNECs of components

Name of substance	CAS No	Endpoint	Threshold level	Organism	Environmental compartment	Exposure time
bioethanol	64-17-5	PNEC	0.96 mg/l	aquatic organisms	freshwater	short-term (single instance)
bioethanol	64-17-5	PNEC	0.79 mg/l	aquatic organisms	marine water	short-term (single instance)
bioethanol	64-17-5	PNEC	580 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
bioethanol	64-17-5	PNEC	3.6 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
bioethanol	64-17-5	PNEC	0.63 mg/kg	terrestrial organisms	soil	short-term (single instance)
bioethanol	64-17-5	PNEC	2.75 mg/l	aquatic organisms	water	intermittent release

8.2 Exposure controls

Appropriate engineering controls

General ventilation.

Individual protection measures (personal protective equipment)

Personal protective equipment shall be used when the risks cannot be avoided or sufficiently limited by technical means of collective protection or by measures, methods or procedures of work organization.

Eye/face protection

Wear eye/face protection.

Skin protection

- Hand protection

Butyl rubber; Layer thickness: 0.7 mm; Break through time: 240 min. 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. Check leak-tightness/impermeability prior to use. Do not wear gloves near rotary machines or tools.

- Other protection measures

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

Respiratory protection

[In case of inadequate ventilation] wear respiratory protection. Type: AX (gas filters and combined filters against low-boiling point organic compounds, colour code: Brown).

Environmental exposure controls

The disposal by sewage disposal systems is generally not allowed.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	spray aerosol
Colour	colourless - clear
Odour	characteristic
Melting point/freezing point	not determined
Boiling point or initial boiling point and boiling range	not determined
Flammability	flammable aerosol in accordance with GHS criteria
Lower and upper explosion limit	0.6 vol% - 15 vol%
Flash point	-87 °C at 1,013 hPa calculated value, referring to a component of the mixture
Auto-ignition temperature	>200 °C (auto-ignition temperature (liquids and gases))
Decomposition temperature	not relevant
pH (value)	not applicable
Kinematic viscosity	not relevant
Solubility(ies)	not determined
Partition coefficient	
Partition coefficient n-octanol/water (log value)	this information is not available
Vapour pressure	not determined
Density and/or relative density	
Density	0.75 – 0.78 $^{g}/_{cm^3}$ at 20 °C
Relative vapour density	information on this property is not available
Particle characteristics	not relevant (aerosol)
Decomposition temperature	not determined

9.2 Other information

90.6 % by mass of the contents are flammable

Information with regard to physical hazard classes

Aerosols

- Components (flammable)	90.6 %
Other safety characteristics	there is no additional information

SECTION 10: Stability and reactivity

10.1 Reactivity

Concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials". The mixture contains reactive sub-

stance(s). Risk of ignition.

10.2 Chemical stability

See below "Conditions to avoid".

10.3 Possibility of hazardous reactions

No known hazardous reactions.

10.4 Conditions to avoid

Do not spray on an open flame or other ignition source. Keep away from heat.

Hints to prevent fire or explosion

Protect from sunlight.

10.5 Incompatible materials

Oxidisers

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.

SECTION 11: Toxicological information

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

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 according to GHS (1272/2008/EC, CLP)

Acute toxicity

Shall not be classified as acutely toxic.
GHS of the United Nations, annex 4: May be harmful if swallowed or if inhaled.

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.

Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Shall not be classified as carcinogenic.

Reproductive toxicity

Shall not be classified as a reproductive toxicant.

Specific target organ toxicity - single exposure

May cause drowsiness or dizziness.

Specific target organ toxicity - repeated exposure

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

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

Other information

Repeated exposure may cause skin dryness or cracking.

11.2 Information on other hazards

There is no additional information.

SECTION 12: Ecological information

12.1 Toxicity

Harmful to aquatic life with long lasting effects.

Aquatic toxicity (acute) of components

Name of substance	CAS No	Endpoint	Value	Species	Exposure time
cyclopentane	287-92-3	LL50	29.3 mg/l	fish	96 h
cyclopentane	287-92-3	EL50	51.15 mg/l	aquatic invertebrates	48 h
propane	74-98-6	LC50	27.98 mg/l	fish	96 h
propane	74-98-6	EC50	7.71 mg/l	algae	96 h
bioethanol	64-17-5	LC50	15,400 mg/l	fish	96 h
bioethanol	64-17-5	EC50	12,700 mg/l	fish	96 h
bioethanol	64-17-5	ErC50	22,000 mg/l	algae	96 h
Hydrocarbons, C6-C7, iso-alkanes, cyclic, < 5% n-hexane		LL50	12 mg/l	fish	96 h
Hydrocarbons, C6-C7, iso-alkanes, cyclic, < 5% n-hexane		EL50	17.06 mg/l	aquatic invertebrates	48 h
Hydrocarbons, C6-C7, n-alkanes, iso-alkanes, cyclic, < 5% n-hexane		LL50	15.8 mg/l	fish	72 h
Hydrocarbons, C6-C7, n-alkanes, iso-alkanes, cyclic, < 5% n-hexane		LC50	0.11 mg/l	fish	96 h
Hydrocarbons, C6-C7, n-alkanes, iso-alkanes, cyclic, < 5% n-hexane		EL50	12 mg/l	aquatic invertebrates	24 h
Hydrocarbons, C6-C7, n-alkanes, iso-alkanes, cyclic, < 5% n-hexane		EC50	0.64 mg/l	aquatic invertebrates	48 h
Hydrocarbons, C6, iso-alkanes, <5% n-hexane		LL50	18.27 mg/l	fish	96 h
Hydrocarbons, C6, iso-alkanes, <5% n-hexane		EL50	31.9 mg/l	aquatic invertebrates	48 h
Hydrocarbons, C7, n-alkanes, iso-alkanes, cyclic		LL50	>13.4 mg/l	fish	96 h
hexane	110-54-3	LL50	12 mg/l	rainbow trout (Oncorhynchus mykiss)	96 h
hexane	110-54-3	LC50	>1,000 mg/l	japanese ricefish/medaka (Oryzias latipes)	48 h
hexane	110-54-3	EL50	12 mg/l	daphnia magna	24 h

Aquatic toxicity (chronic) of components

Name of substance	CAS No	Endpoint	Value	Species	Exposure time
bioethanol	64-17-5	EC50	22.6 $^{g}/_{l}$	algae	10 d
bioethanol	64-17-5	LC50	1,806 $^{mg}/_{l}$	aquatic invertebrates	10 d
bioethanol	64-17-5	ErC50	675 $^{mg}/_{l}$	algae	4 d
Hydrocarbons, C6-C7, n-alkanes, iso-alkanes, cyclic, < 5% n-hexane		EL50	1.6 $^{mg}/_{l}$	aquatic invertebrates	21 d
Hydrocarbons, C6-C7, n-alkanes, iso-alkanes, cyclic, < 5% n-hexane		EC50	0.23 $^{mg}/_{l}$	aquatic invertebrates	21 d

12.2 Persistence and degradability

Degradability of components

Name of substance	CAS No	Process	Degradation rate	Time	Method	Source
cyclopentane	287-92-3	carbon dioxide generation	0 %	28 d		ECHA
bioethanol	64-17-5	oxygen depletion	69 %	5 d		ECHA
Hydrocarbons, C6-C7, iso-alkanes, cyclic, < 5% n-hexane		oxygen depletion	83 %	10 d		ECHA
Hydrocarbons, C6-C7, n-alkanes, iso-alkanes, cyclic, < 5% n-hexane		oxygen depletion	83 %	16 d		ECHA
Hydrocarbons, C6, iso-alkanes, <5% n-hexane		oxygen depletion	83 %	10 d		ECHA
hexane	110-54-3	oxygen depletion	83 %	10 d		ECHA Chem

12.3 Bioaccumulative potential

Data are not available.

Bioaccumulative potential of components

Name of substance	CAS No	BCF	Log KOW	BOD5/COD
cyclopentane	287-92-3	70.8	3 (pH value: 7, 25 °C)	
propane	74-98-6		1.09 (pH value: 7, 20 °C)	
bioethanol	64-17-5		-0.77	0.6211
Tricyclo[3.3.1.13,7]decane	281-23-2		4.24	
Hydrocarbons, C6-C7, n-alkanes, iso-alkanes, cyclic, < 5% n-hexane		≥26.26 – ≤315.7	≥2.96 – ≤3.78 (pH value: ~7, 20 °C)	
Hydrocarbons, C6, iso-alkanes, <5% n-hexane		501.2	3.6 (pH value: 7, 20 °C)	
hexane	110-54-3	≥26.26 – ≤316	5.8 (20 °C)	

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

Does not contain a PBT-/vPvB-substance at a concentration of ≥ 0,1%.

12.6 Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of ≥ 0,1%.

12.7 Other adverse effects

Data are not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

The disposal by sewage disposal systems is generally not allowed.

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/packagings

It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used. Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

Relevant provisions relating to waste

List of wastes	16 05 04

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.

SECTION 14: Transport information

14.1 UN number or ID number

ADR/RID	UN 1950
IMDG-Code	UN 1950
ICAO-TI	UN 1950

14.2 UN proper shipping name

ADR/RID	AEROSOLS
IMDG-Code	AEROSOLS
ICAO-TI	Aerosols, flammable

14.3 Transport hazard class(es)

ADR/RID	2
IMDG-Code	2.1
ICAO-TI	2.1

14.4 Packing group

not assigned

14.5 Environmental hazards

non-environmentally hazardous acc. to the dangerous goods regulations

14.6 Special precautions for user

Provisions for dangerous goods (ADR) should be complied within the premises.

14.7 Maritime 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

Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) - Additional information

Classification code	5F
Danger label(s)	2.1



Special provisions (SP)	190, 327, 344, 625
Excepted quantities (EQ)	E0
Limited quantities (LQ)	1 L
Transport category (TC)	2
Tunnel restriction code (TRC)	D

Regulations concerning the International Carriage of Dangerous Goods by Rail (RID) - Additional information

Classification code	5F
Danger label(s)	2.1



Special provisions (SP)	190, 327, 344, 625
Excepted quantities (EQ)	E0
Limited quantities (LQ)	1 L
Transport category (TC)	2
Hazard identification No	23

International Maritime Dangerous Goods Code (IMDG) - Additional information

Marine pollutant	-
Danger label(s)	2.1



Special provisions (SP)	63, 190, 277, 327, 344, 381, 959
Excepted quantities (EQ)	E0
Limited quantities (LQ)	1 L
EmS	F-D, S-U
Stowage category	-

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

Danger label(s)	2.1



Special provisions (SP)	A145, A167
Excepted quantities (EQ)	E0
Limited quantities (LQ)	30 kg

SECTION 15: Regulatory information

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

Relevant provisions of the European Union (EU)

List of substances subject to authorisation (REACH, Annex XIV) / SVHC - candidate list

none of the ingredients are listed

Restrictions of occupation

Directive 94/33/EC on the protection of young people at work / Observe national regulations on protection of young people at work.

15.2 Chemical safety assessment

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

SECTION 16: Other information

Indication of changes (revised safety data sheet)

Section	Former entry (text/value)	Actual entry (text/value)	Safety-relevant
2.2		- Precautionary statements: change in the listing (table)	yes
2.2		- Supplemental hazard information: change in the listing (table)	yes
2.2	Additional labelling according to Directive 75/324/EEC relating to aerosol dispensers: Extremely flammable. Pressurized container: may burst if heated. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not pierce or burn, even after use. Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.	Additional labelling according to Directive 75/324/EEC relating to aerosol dispensers: Extremely flammable aerosol. Pressurised container: May burst if heated. If medical advice is needed, have product container or label at hand. Keep out of reach of children. Read carefully and follow all instructions. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not spray on an open flame or other ignition source. Do not pierce or burn, even after use. Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.	yes
2.3	Other hazards: There is no additional information.	Other hazards: Repeated exposure may cause skin dryness or cracking.	yes
11.1		Other information: Repeated exposure may cause skin dryness or cracking.	yes
14.3	ADR/RID: 2 (2.1)	ADR/RID: 2	yes

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
2006/15/EC	Commission Directive establishing a second list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC and amending Directives 91/322/EEC and 2000/39/EC
ADR	Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road)
Aquatic Acute	Hazardous to the aquatic environment - acute hazard
Aquatic Chronic	Hazardous to the aquatic environment - chronic hazard
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
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures
COD	Chemical oxygen demand
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 50 % changes in response (e.g. on growth) during a specified time interval
EC No	The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union)
ED	Endocrine disruptor
EINECS	European Inventory of Existing Commercial Chemical Substances
EL50	Effective Loading 50 %: the EL50 corresponds to the loading rate required to produce a response in 50% of the test organisms
ELINCS	European List of Notified Chemical Substances
EmS	Emergency Schedule
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. Gas	Flammable gas
Flam. Liq.	Flammable liquid
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
ICAO-TI	Technical instructions for the safe transport of dangerous goods by air
IMDG	International Maritime Dangerous Goods Code
IMDG-Code	International Maritime Dangerous Goods Code
index No	The Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008

Abbr.	Descriptions of used abbreviations
IOELV	Indicative occupational exposure limit value
LC50	Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval
LGK	Lagerklasse (storage class according to TRGS 510, Germany)
LL50	Lethal Loading 50 %: the LL50 corresponds to the loading rate causing 50 % lethality
log KOW	n-Octanol/water
NLP	No-Longer Polymer
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
ppm	Parts per million
Press. Gas	Gas under pressure
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
Repr.	Reproductive toxicity
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)
Skin Corr.	Corrosive to skin
Skin Irrit.	Irritant to skin
STEL	Short-term exposure limit
STOT RE	Specific target organ toxicity - repeated exposure
STOT SE	Specific target organ toxicity - single exposure
SVHC	Substance of Very High Concern
TRGS	Technische Regeln für Gefahrstoffe (technical rules for hazardous substances, Germany)
TWA	Time-weighted average
vPvB	Very Persistent and very Bioaccumulative

Key literature references and sources for data

Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures. Regulation (EC) No. 1907/2006 (REACH), amended by 2020/878/EU.

Agreement concerning the International Carriage of Dangerous Goods by Road (ADR). Regulations concerning the International Carriage of Dangerous Goods by Rail (RID). 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
H220	Extremely flammable gas.
H222	Extremely flammable aerosol.
H225	Highly flammable liquid and vapour.
H229	Pressurised container: May burst if heated.
H280	Contains gas under pressure; may explode if heated.
H304	May be fatal if swallowed and enters airways.

Code	Text
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
H361f	Suspected of damaging fertility.
H372	Causes damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
H413	May cause long lasting harmful effects to aquatic life.

Disclaimer

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