

SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006**HEATSAVR**

Version 8.1

Print Date 2023/07/31

Revision date / valid from 2023/07/31

MSDS code: MAAE484**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

Trade name : HEATSAVR

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

Use of the Substance/Mixture : Water treatment for swimming pools and spas. Evaporation inhibitor.

Uses advised against : At this moment we have not identified any uses advised against

1.3. Details of the supplier of the safety data sheet

Company : Brenntag UK Limited
Alpha House, Lawnswood Business Park
GB LS16 6QY Leeds

Telephone : +44 (0) 113 3879 200
Telefax : +44 (0) 113 3879 280
E-mail address : msds@brenntag.co.uk

1.4. Emergency telephone numberEmergency telephone number : Emergency only telephone number (open 24 hours):
+44 (0) 1865 407333 (N.C.E.C. Culham)**SECTION 2: Hazards identification****2.1. Classification of the substance or mixture****Classification according to Regulation S.I. 2019/720 (GB CLP)****Regulation S.I. 2019/720 (GB CLP)**

Hazard class	Hazard category	Target Organs	Hazard statements
Flammable liquids	Category 2	---	H225
Eye irritation	Category 2	---	H319

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

Most important adverse effects

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Human Health	:	See section 11 for toxicological information.
Physical and chemical hazards	:	See section 9/10 for physicochemical information.
Potential environmental effects	:	See section 12 for environmental information.

2.2. Label elements

Labelling according to Regulation S.I. 2019/720 (GB CLP)

Hazard symbols	:	 
Signal word	:	Danger
Hazard statements	:	H225 Highly flammable liquid and vapour. H319 Causes serious eye irritation.
Precautionary statements	:	
Prevention	:	P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P233 Keep container tightly closed. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response	:	P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. P337 + P313 If eye irritation persists: Get medical advice/ attention. P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

2.3. Other hazards

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This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher. This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: 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.

Toxicological information: 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

		Classification (Regulation S.I. 2019/720 (GB CLP))		
Hazardous components	Amount [%]	Hazard class / Hazard category	Hazard statements	
ethanol				
Index-No.	: 603-002-00-5	>= 70 - < 90	Flam. Liq.2	H225
CAS-No.	: 64-17-5		Eye Irrit.2	H319
EC-No.	: 200-578-6			
EU REACH-	: 01-2119457610-43-xxxx		specific concentration limit	
Reg. No.			Eye Irrit. 2; H319 >= 50 %	
propan-2-ol				
Index-No.	: 603-117-00-0	>= 10 - < 20	Flam. Liq.2	H225
CAS-No.	: 67-63-0		Eye Irrit.2	H319
EC-No.	: 200-661-7		STOT SE3	H336
EU REACH-	: 01-2119457558-25-xxxx			
Reg. No.				

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 : Take off all contaminated clothing immediately.

If inhaled : Remove to fresh air. If symptoms persist, call a physician.

In case of skin contact : Wash off with soap and water. If skin irritation persists, call a physician. Take off contaminated clothing and shoes immediately.

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In case of eye contact	: If eye irritation persists, consult a specialist. Rinse immediately with plenty of water, also under the eyelids, for at least 5 minutes. Remove contact lenses.
If swallowed	: Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms	: See Section 11 for more detailed information on health effects and symptoms.
Effects	: Health injuries are not known or expected under normal use. See Section 11 for more detailed information on health effects and symptoms.

4.3. Indication of any immediate medical attention and special treatment needed

Treatment	: Treat symptomatically.
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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Unsuitable extinguishing media	: High volume water jet

5.2. Special hazards arising from the substance or mixture

Specific hazards during firefighting	: The vapour may be invisible, heavier than air and spread along ground. Vapours may form explosive mixtures with air. Flash back possible over considerable distance.
Hazardous combustion products	: Carbon monoxide, Carbon dioxide (CO ₂)

5.3. Advice for firefighters

Special protective equipment for firefighters	: In the event of fire, wear self-contained breathing apparatus. Wear personal protective equipment.
Further advice	: Cool closed containers exposed to fire with water spray. Heating will cause a pressure rise - with risk of bursting. Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

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Personal precautions : Keep away from heat and sources of ignition. Use personal protective equipment. Provide adequate ventilation. Avoid contact with skin and eyes.

6.2. Environmental precautions

Environmental precautions : Do not flush into surface water or sanitary sewer system. Avoid subsoil penetration.

6.3. Methods and materials for containment and cleaning up

Methods and materials for containment and cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

6.4. Reference to other sections

See Section 1 for emergency contact information.
See Section 8 for information on personal protective equipment.
See Section 13 for waste treatment information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling : Keep container tightly closed. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. Handle in accordance with good industrial hygiene and safety practice.

Hygiene measures : Keep away from food, drink and animal feedingstuffs. Smoking, eating and drinking should be prohibited in the application area. Wash hands before breaks and at the end of workday. Take off all contaminated clothing immediately.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Store in original container. Keep in an area equipped with solvent resistant flooring.

Advice on protection against fire and explosion : Keep away from sources of ignition - No smoking. The vapour may be invisible, heavier than air and spread along ground. Vapours may form explosive mixtures with air. Take measures to prevent the build up of electrostatic charge. Use only in an area containing explosion proof equipment.

Further information on storage conditions : Keep tightly closed in a dry and cool place. Keep away from direct sunlight. Keep in a well-ventilated place.

Advice on common storage : Incompatible with oxidizing agents. Do not store together with oxidizing and self-igniting products. Keep away from food, drink and animal feedingstuffs.

7.3. Specific end use(s)

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Specific use(s) : No information available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Component:	ethanol	CAS-No. 64-17-5
Derived No Effect Level (DNEL)/Derived Minimal Effect Level (DMEL)		

DNEL		
Workers, Long-term - systemic effects, Inhalation	:	950 mg/m ³
DNEL		
Workers, Acute - local effects, Inhalation	:	1900 mg/m ³
DNEL		
Workers, Long-term - systemic effects, Skin contact	:	343 mg/kg bw/day
DNEL		
Consumers, Long-term - systemic effects, Inhalation	:	114 mg/m ³
DNEL		
Consumers, Acute - local effects, Inhalation	:	950 mg/m ³
DNEL		
Consumers, Long-term - systemic effects, Skin contact	:	206 mg/kg bw/day
DNEL		
Consumers, Long-term - systemic effects, Ingestion	:	87 mg/kg bw/day

Predicted No Effect Concentration (PNEC)
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Fresh water	:	0.96 mg/l
Marine water	:	0.79 mg/l
Intermittent releases	:	2.75 mg/l
Sewage treatment plant (STP)	:	580 mg/l
Fresh water sediment	:	3.6 mg/kg d.w.
Marine sediment	:	2.9 mg/kg d.w.
Soil	:	0.63 mg/kg d.w.
Secondary poisoning	:	380 mg/kg food

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Other Occupational Exposure Limit Values

UK. EH40 Workplace Exposure Limits (WELs), as amended, Time Weighted Average (TWA):
1,000 ppm, 1,920 mg/m³

ELV (IE), Short Term Exposure Limit (STEL):
1,000 ppm, (15 minutes)

Component:	propan-2-ol	CAS-No. 67-63-0
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Derived No Effect Level (DNEL)/Derived Minimal Effect Level (DMEL)

DNEL

Workers, Long-term - systemic effects, Skin contact : 888 mg/kg bw/day

DNEL

Workers, Long-term - systemic effects, Inhalation : 500 mg/m³

DNEL

Consumers, Long-term - systemic effects, Skin contact : 319 mg/kg bw/day

DNEL

Consumers, Long-term - systemic effects, Inhalation : 89 mg/m³

DNEL

Consumers, Long-term - systemic effects, Ingestion : 26 mg/kg bw/day

Predicted No Effect Concentration (PNEC)

Fresh water : 140.9 mg/l

Marine water : 140.9 mg/l

Intermittent releases : 140.9 mg/l

Sewage treatment plant (STP) : 2251 mg/l

Sediment : 552 mg/kg d.w.

Soil : 28 mg/kg

Secondary poisoning : 160 mg/kg food

Other Occupational Exposure Limit Values

UK. EH40 Workplace Exposure Limits (WELs), as amended, Time Weighted Average (TWA):

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400 ppm, 999 mg/m³

UK. EH40 Workplace Exposure Limits (WELs), as amended, Short Term Exposure Limit (STEL):
500 ppm, 1,250 mg/m³, (15 minutes)

ELV (IE), Skin designation:
Can be absorbed through the skin.

ELV (IE), Time Weighted Average (TWA):
200 ppm

8.2. Exposure controls

Appropriate engineering controls

Refer to protective measures listed in sections 7 and 8.

Personal protective equipment

Respiratory protection

Advice : In case of insufficient ventilation, wear suitable respiratory equipment.
Respiratory protection complying with EN 141.
Recommended Filter type:AX

Hand protection

Advice : Protective gloves complying with EN 374.
Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves.
Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.
Protective gloves should be replaced at first signs of wear.

Material : Nitrile rubber
Break through time : 240 min
Glove thickness : 0.5 mm

Eye protection

Advice : Safety goggles
Equipment should conform to EN 166

Skin and body protection

Advice : Wear personal protective equipment.

Environmental exposure controls

General advice : Do not flush into surface water or sanitary sewer system.
Avoid subsoil penetration.

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Form	: Liquid
Physical state	: liquid
Colour	: blue
Odour	: alcohol-like
Odour Threshold	: No data available
Melting point/range	: ca. -120 °C
Boiling point/boiling range	: 80.5 °C
Flammability (solid, gas)	: Highly flammable.
Upper explosion limit / Upper flammability limit	: Upper flammability limit ≤ 13 %(V)
Lower explosion limit / Lower flammability limit	: Lower flammability limit ca. 2 %(V)
Flash point	: < 23 °C
Auto-ignition temperature	: > 400 °C
Decomposition temperature	: No data available
Self-Accelerating decomposition temperature (SADT)	: No data available
pH	: No data available
Viscosity	
Viscosity, dynamic	: No data available
Viscosity, kinematic	: 3.12 mm ² /s
Flow time	: No data available
Solubility(ies)	
Water solubility	: miscible
Solubility in other solvents	: No data available
Dissolution Rate	: No data available

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Partition coefficient: n-octanol/water	: Pow: 0.1
Dispersion Stability	: No data available
Vapour pressure	: 50 hPa (20 °C)
Relative density	: 0.785 (20 °C)
Density	: 0.826 g/cm ³ (20 °C)
Bulk density	: No data available
Relative vapour density	: 1.84 (Air = 1.0)
Particle characteristics	No data available

9.2 Other information

Explosives	: No data available
	Formation of explosive air/vapour mixtures is possible.
Oxidizing properties	: not oxidising

SECTION 10: Stability and reactivity

10.1. Reactivity

Advice	: No decomposition if stored and applied as directed.
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10.2. Chemical stability

Advice	: Stable under recommended storage conditions.
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10.3. Possibility of hazardous reactions

Hazardous reactions	: Incompatible products
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10.4. Conditions to avoid

Conditions to avoid	: Heat, flames and sparks. : Keep away from heat and sources of ignition. Heat, flames and sparks. Keep away from direct sunlight. Take precautionary measures against static discharges.
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10.5. Incompatible materials

Materials to avoid	: Strong oxidizing agents : , Strong oxidizing agents, Strong acids
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10.6. Hazardous decomposition products

Hazardous decomposition	: Under fire conditions: Carbon oxides
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products

: , Carbon oxides, Formaldehyde, Alcohols

SECTION 11: Toxicological information

11.1. Information on the hazard classes within the meaning of Regulation (EC) No. 1272/2008

Data for the product

Acute toxicity

Oral

No data available

Inhalation

No data available

Dermal

No data available

Irritation

Skin

No data available

Eyes

No data available

Sensitisation

No data available

CMR effects

CMR Properties

Carcinogenicity : No data available

Mutagenicity : No data available

Reproductive toxicity : No data available

Specific Target Organ Toxicity

Single exposure

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No data available

Repeated exposure

No data available

Other toxic properties

Repeated dose toxicity

No data available

Aspiration hazard

No data available

Component:	ethanol	CAS-No. 64-17-5
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Acute toxicity

Oral

LD50 : 10470 mg/kg (Rat, male and female) (OECD Test Guideline 401)

Inhalation

LC50 : 51 mg/l (Rat; 4 h; vapour) (OECD Test Guideline 403)

Dermal

LD50 : > 2000 mg/kg (Rabbit) (OECD Test Guideline 402)

Irritation

Skin

Result : No skin irritation (Rabbit) (OECD Test Guideline 404)

Eyes

Result : Causes serious eye irritation. (Rabbit) (OECD Test Guideline 405)

Sensitisation

Result : not sensitizing (Guinea pig) (Maximisation Test)
not sensitizing (Mouse) (OECD Test Guideline 429)
not sensitizing (Inhalation; Rat)

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CMR effects

Carcinogenicity

NOAEL	:	> 4,000 mg/kg bw/day (Mouse, female)(Target Organs: Liver)(Oral; 105 weeks; Frequency of treatment: 5 days/week)
NOAEL	:	> 4,250 mg/kg bw/day (Mouse, male)(Target Organs: Liver)(Oral; 105 weeks; Frequency of treatment: 5 days/week)(OPPTS 870.4200)
NOAEL	:	> 3,000 mg/kg bw/day (Rat)(OECD Test Guideline 451)

CMR Properties

Carcinogenicity	:	Animal testing did not show any carcinogenic effects.
Mutagenicity	:	In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects
Teratogenicity	:	It is not considered teratogenic.
Reproductive toxicity	:	It is not considered toxic for reproduction.

Genotoxicity in vitro

Result	:	negative (Ames test; Salmonella typhimurium) (OECD Test Guideline 471) negative (Mouse Lymphoma Cells) (OECD Test Guideline 476) Positive as well as negative results were obtained. (Bacterial Reverse Mutation Test; Escherichia coli) (No guideline followed)
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Genotoxicity in vivo

Result	:	Positive as well as negative results were obtained. (Dominant lethal assay; Mouse, male) (Oral; 5 days) (OECD Test Guideline 478) negative (Chromosome aberration test in vivo; Hamster, male and female) (Oral;) (OECD Test Guideline 475) negative (In vivo micronucleus test; Mouse) (OECD Test Guideline 475)
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Teratogenicity

LOAEL Develop.	:	8,200 mg/kg bw/day (Rat, Sprague-Dawley)(6 Weeks)(No guideline followed)Reduced skeletal ossification.
NOAEL Develop.	:	5,200 mg/kg bw/day (Rat, Sprague-Dawley)(6 Weeks)(No guideline followed)
NOAEL Maternal	:	>= 20,000 ppm

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NOAEL : 16,000 ppm
 Teratog.
 (Rat, Sprague-Dawley)(Inhalation; 10,000, 16,000, 20,000 ppm; 7 hours/day)(OECD Test Guideline 414)Reduced maternal food consumption

Reproductive toxicity

NOAEL : 21.5 mg/kg bw/day
 Parent
 (Mouse, male and female)(OECD Test Guideline 416)No negative effects.
 NOAEL : 13.8 mg/kg bw/day
 F1
 (Mouse, male and female)(OECD Test Guideline 416)Reduction in sperm motility.

Specific Target Organ Toxicity

Single exposure

Remarks : The substance or mixture is not classified as specific target organ toxicant, single exposure.

Repeated exposure

Remarks : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Other toxic properties

Repeated dose toxicity

NOAEL : 1730 mg/kg bw/day
 (Rat, female)(Oral; 90-day) (OECD Test Guideline 408), Target Organs: Liver
 NOAEL : > 20 mg/l
 (Rat, male)(Inhalation; 21 days) (OECD Test Guideline 403)

Aspiration hazard

No aspiration toxicity classification,

Further information

Other relevant toxicity information : Exposure to ethanol vapors may result in irritation of the eyes and nose, drowsiness and headache. Other symptoms may include

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stupor, nausea, mental excitement or depression, vomiting, flushing and coma. It can cause irritation of the respiratory tract, intra ocular tension, ataxia, sleepiness, narcosis, impaired perception and incoordination. It can also cause lowered inhibitions, dizziness, shallow respiration, unconsciousness and death.

Chronic symptoms of ingestion and/or vapor exposure may include weight loss, cirrhosis of the liver, gastroenteritis, anorexia, diarrhea, polyneuritis with pain, motor and sensory loss in the extremities, optic atrophy and loss or impairment of other abilities, excitement, acute and chronic gastritis, malabsorption syndrome, acute and chronic pancreatitis, anemia due to acute or chronic blood myopathy, alcoholic cardiomyopathy, lactic acidosis, hypomagnesemia, hypouricemia, hyperlipidemia, pulmonary aspiration and respiratory infections. Chronic exposure may also result in serious neurological and mental disorders (e.g. brain damage, memory loss, sleep disturbances, and psychoses). Other symptoms include mucous membrane irritation, central nervous system depression, giddiness, jaundice, pain in upper abdomen on the right side and staggering gait. It may cause liver, kidney and heart damage. The pupils are sometimes widely dilated and unreactive to light. The liquid can defat the skin, producing a dermatitis characterized by drying and fissuring. It rarely causes temporary blindness. Ingestion of this compound can enhance the effects of coumarin, anticoagulants, antihistamines, hypnotics, sedatives, tranquilizers, insulin, monoamine oxidase inhibitors, and antidepressants. Can cause reproductive and teratogenic effects

Experience with human exposure : Repeated and prolonged exposure to solvents may cause brain and nervous system damage.,

Component:	propan-2-ol	CAS-No. 67-63-0
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Acute toxicity

Oral

LD50 : 5840 mg/kg (Rat) (OECD Test Guideline 401)

Inhalation

LC50 : > 25 mg/l (Rat; 6 h; vapour) (OECD Test Guideline 403)

Dermal

LD50 : 13900 mg/kg (Rabbit) (OECD Test Guideline 402)

Irritation

Skin

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Result : No skin irritation (OECD Test Guideline 404) Decreases the skin which may cause dry and rough. Prolonged or repeated skin contact may result in dermatitis.

Eyes

Result : Eye irritation (OECD Test Guideline 405) Splashes in eyes may cause strong pain. Vapour acts irritant.

Sensitisation

Result : not sensitizing (Buehler Test; Dermal; Guinea pig) (OECD Test Guideline 406)

CMR effects

Carcinogenicity

NOEL : 5,000 ppm
(negative, Mouse, male and female)(Inhalation; 0, 500, 2500, 5000 ppm; 78 weeks; Frequency of treatment: 5 days/week)(OECD Test Guideline 451)

CMR Properties

Carcinogenicity : Based on available data, the classification criteria are not met.
Mutagenicity : In vitro tests did not show mutagenic effects
In vivo tests did not show mutagenic effects
Teratogenicity : No effects on or via lactation
Reproductive toxicity : Based on available data, the classification criteria are not met.

Genotoxicity in vitro

Result : negative (Bacterial Reverse Mutation Test; Salmonella typhimurium; with and without metabolic activation) (OECD Test Guideline 471)
negative (In vitro gene mutation study in mammalian cells; CHO (Chinese Hamster Ovary) cells; with and without metabolic activation) (OECD Test Guideline 476)

Genotoxicity in vivo

Result : negative (In vivo micronucleus test; Mouse, male and female) (intraperitoneal;) (OECD Test Guideline 474)

Teratogenicity

NOAEL : 400 mg/kg bw/day

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Maternal
NOAEL : 400 mg/kg bw/day
Develop.
(Rat, Sprague-Dawley)(Oral)(OECD Test Guideline 414)No adverse effects

Reproductive toxicity

NOAEL : 853 mg/kg bw/day
Parent
(One-Generation Reproduction Toxicity Study; Rat, wistar, male and female)(Oral)(OECD Test Guideline 415)No negative effects.
NOAEL : 500 mg/kg bw/day
Parent
(Two-generation reproductive toxicity; Rat, Sprague-Dawley, male and female)(Oral)(OECD Test Guideline 416)No negative effects.

Specific Target Organ Toxicity

Single exposure

Inhalation : Target Organs: Central nervous systemMay cause drowsiness or dizziness.

Repeated exposure

Remarks : Oral and inhalation repeated exposure studies demonstrated target organ effects in male rats (kidney) and male and female mice (thyroid) by mechanisms of action that are not relevant to humans

Other toxic properties

Aspiration hazard

Aspiration hazard if swallowed - can enter lungs and cause damage.
Aspiration may cause pulmonary oedema and pneumonitis.
Based on available data, the classification criteria are not met.,

11.2. Information on other hazards

Data for the product

Endocrine disrupting properties

Assessment : 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.

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SECTION 12: Ecological information

12.1. Toxicity

Component:	ethanol	CAS-No. 64-17-5
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Acute toxicity

Fish

LC50	:	15,300 mg/l (Pimephales promelas (fathead minnow); 96 h) (flow-through test; US-EPA)
LC50	:	11,200 mg/l (Salmo gairdneri; 24 h) (flow-through test; US-EPA)
LC50	:	13,000 mg/l (Oncorhynchus mykiss; 96 h) (OECD Test Guideline 203)

Toxicity to daphnia and other aquatic invertebrates

EC50	:	858 mg/l (Artemia salina; 24 h) (OECD Test Guideline 202)Marine water
EC50	:	12,340 mg/l (Daphnia magna (Water flea); 48 h) (ASTM E 729-80)Fresh water
LC50	:	5,012 mg/l (Ceriodaphnia dubia (water flea); 48 h) (static test; ASTM E 729-80)Fresh water

algae

EC50	:	275 mg/l (Chlorella vulgaris (Fresh water algae); 72 h) (static test; End point: Growth rate; OECD Test Guideline 201)Fresh water
EC10	:	11.5 mg/l (Chlorella vulgaris (Fresh water algae); 72 h) (static test; OECD Test Guideline 201)

Bacteria

EC50	:	5800 mg/l (Paramecium caudatum; 4 h) (static test; No guideline followed)
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Chronic toxicity

Fish

NOEC	:	245 mg/l (30 d) (QSAR)
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Aquatic invertebrates

NOEC	9.6 mg/l (Ceriodaphnia dubia (water flea); 10 d) (semi-static test; End point: Reproduction; No guideline followed)
NOEC	79 mg/l (Palaemonetes pugio; 12 d) (static test)

Component:	propan-2-ol	CAS-No. 67-63-0
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Acute toxicity

Fish

LC50	: 9,640 mg/l (Pimephales promelas, mortality; 96 h) (flow-through test; OECD Test Guideline 203)
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Toxicity to daphnia and other aquatic invertebrates

LC50	: 9,714 mg/l (Daphnia magna, mortality; 24 h) (static test; OECD Test Guideline 202)
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algae

EC50	: > 100 mg/l (Scenedesmus subspicatus; 72 h)
LOEC	1000 mg/l (algae; 8 d)

Bacteria

EC50	: > 100 mg/l (Bacteria) no harming action
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12.2. Persistence and degradability

Component:	ethanol	CAS-No. 64-17-5
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Persistence and degradability

Persistence

Result	: (Related to: Water) non-significant hydrolysis
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Biodegradability

Result	: 97 % (aerobic; activated sludge; Related to: CO ₂ formation (% of the theoretical value).; Exposure Time: 28 d)(OECD Test Guideline 301B)Readily biodegradable.
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Component:	propan-2-ol	CAS-No. 67-63-0
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Persistence and degradability

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Persistence

Result : Transformation due to hydrolysis not expected to be significant.
Transformation due to photolysis not expected to be significant.

Biodegradability

Result : 53 % (aerobic; domestic sewage; Related to: O₂ consumption;
Exposure Time: 5 d)(Directive 67/548/EEC, Annex V, C.5) Readily biodegradable.

12.3. Bioaccumulative potential

Component:	ethanol	CAS-No. 64-17-5
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Bioaccumulation

Result : log Kow -0.35 (24 °C; pH 7.4) (OECD Test Guideline 107)
: BCF: 0.66; Does not bioaccumulate.

Component:	propan-2-ol	CAS-No. 67-63-0
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Bioaccumulation

Result : log Kow 0.05 (25 °C)
: Bioaccumulation is not expected.

12.4. Mobility in soil

Component:	ethanol	CAS-No. 64-17-5
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Mobility

Water : The product is water soluble.
Air : The product evaporates readily.
Soil : Not expected to adsorb on soil.

Component:	propan-2-ol	CAS-No. 67-63-0
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Mobility

Water : The product is water soluble.
Soil : Mobile in soils

12.5. Results of PBT and vPvB assessment

Data for the product

Results of PBT and vPvB assessment

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- Result : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
- Result : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Component:	ethanol	CAS-No. 64-17-5
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Results of PBT and vPvB assessment

- Result : This substance is not considered to be persistent, bioaccumulating nor toxic (PBT)., This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Component:	propan-2-ol	CAS-No. 67-63-0
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Results of PBT and vPvB assessment

- Result : This substance is not considered to be persistent, bioaccumulating nor toxic (PBT)., This substance is not considered to be very persistent and very bioaccumulating (vPvB).

12.6. Endocrine disrupting properties

Data for the product

- Endocrine disrupting potential : 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.

12.7. Other adverse effects

Data for the product

Additional ecological information

- Result : Do not flush into surface water or sanitary sewer system.
Avoid subsoil penetration.

Component:	ethanol	CAS-No. 64-17-5
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Biochemical Oxygen Demand (BOD)

- Result : 100 mg/g

Chemical Oxygen Demand (COD)

- Result : 1900 mg/g

Additional ecological information

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Result : Do not flush into surface water or sanitary sewer system.
Avoid subsoil penetration.

Component:	propan-2-ol	CAS-No. 67-63-0
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Additional ecological information

Result : Do not flush into surface water or sanitary sewer system.
Avoid subsoil penetration.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product : Disposal together with normal waste is not allowed. Special disposal required according to local regulations. Do not let product enter drains. Contact waste disposal services.

Contaminated packaging : Empty contaminated packagings thoroughly. They can be recycled after thorough and proper cleaning. If recycling is not practicable, dispose of in compliance with local regulations. Do not burn, or use a cutting torch on, the empty drum. Risk of explosion.

European Waste Catalogue Number : No waste code according to the European Waste Catalogue can be assigned for this product, as the intended use dictates the assignment. The waste code is established in consultation with the regional waste disposer.

SECTION 14: Transport information

14.1. UN number or ID number

1987

14.2. UN proper shipping name

ADR : ALCOHOLS SOLUTION, N.O.S.
II (Ethanol, Isopropanol)
Special Provision 640D

RID : ALCOHOLS SOLUTION, N.O.S.
II (Ethanol, Isopropanol)
Special Provision 640D

IMDG : ALCOHOLS SOLUTION, N.O.S.
II (Ethanol, Isopropanol)

14.3. Transport hazard class(es)

ADR-Class : 3
(Labels; Classification Code; Hazard 3; F1; 33; (D/E)
Identification Number; Tunnel restriction
code)

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RID-Class : 3
 (Labels; Classification Code; Hazard Identification Number) 3; F1; 33
 IMDG-Class : 3
 (Labels; EmS) 3; F-E, S-D

14.4. Packaging group

ADR : II
 RID : II
 IMDG : II

14.5. Environmental hazards

Environmentally hazardous according to ADR : no
 Environmentally hazardous according to RID : no
 Marine Pollutant according to IMDG-Code : no

14.6. Special precautions for user

Not applicable.

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

Component:	ethanol	CAS-No. 64-17-5
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EU. Chemicals Subject : ; The substance/mixture does not fall under this legislation.
 to PIC Procedure:
 Regulation 649/2012/EU
 on export and import of
 dangerous chemicals, as
 amended

EU. REACH, Annex XVII, : Point Nos.: , 3; Listed
 Marketing and Use
 Restrictions (Regulation
 1907/2006/EC)

Point Nos.: , 40; Listed

EU. Regulation No : EC Number: , 200-578-6; Listed
 1451/2007 [Biocides],

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Annex I, OJ (L 325)

EU. Directive 2012/18/EU (SEVESO III) on major accident hazards involving dangerous substances, Annex I : Qualifying quantity for the application of Lower-tier requirements: 5,000 tonnes; Part 1: Categories of dangerous substances; Flammable liquids, Categories 2 or 3 not covered by P5a and P5b, The information given is valid if the product is stored below the boiling point and at a pressure of 1013 hPa.

Qualifying quantity for the application of Upper-tier requirements: 50,000 tonnes; Part 1: Categories of dangerous substances; Flammable liquids, Categories 2 or 3 not covered by P5a and P5b, The information given is valid if the product is stored below the boiling point and at a pressure of 1013 hPa.

Component:	propan-2-ol	CAS-No. 67-63-0
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EU. Chemicals Subject to PIC Procedure: Regulation 649/2012/EU on export and import of dangerous chemicals, as amended : ; The substance/mixture does not fall under this legislation.

EU. REACH, Annex XVII, Marketing and Use Restrictions (Regulation 1907/2006/EC) : Point Nos.: , 40; For professional users only.; Listed

Point Nos.: , 75; Listed
Point Nos.: , 3; Listed

EU. Regulation No 1451/2007 [Biocides], Annex I, OJ (L 325) : EC Number: , 200-661-7; Listed

EU. Directive 2012/18/EU (SEVESO III) on major accident hazards involving dangerous substances, Annex I : Qualifying quantity for the application of Lower-tier requirements: 5,000 tonnes; Part 1: Categories of dangerous substances; Flammable liquids, Categories 2 or 3 not covered by P5a and P5b, The information given is valid if the product is stored below the boiling point and at a pressure of 1013 hPa.

Qualifying quantity for the application of Upper-tier requirements: 50,000 tonnes; Part 1: Categories of dangerous substances; Flammable liquids, Categories 2 or 3 not covered by P5a and P5b, The information given is valid if the product is stored below the boiling point and at a pressure of 1013 hPa.

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15.2. Chemical safety assessment

No data available

SECTION 16: Other information

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

H225	Highly flammable liquid and vapour.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.

Full text of the Notes referred to under section 3.

Abbreviations and Acronyms

AU AIICL	Australia. Industrial Chemicals Act (AIIC) List
BCF	bioconcentration factor
BOD	biochemical oxygen demand
CAS	Chemical Abstracts Service
CLP	Classification, Labelling and Packaging
CMR	carcinogenic, mutagenic or toxic to reproduction
COD	chemical oxygen demand
DNEL	derived no-effect level
DSL	Canada. Environmental Protection Act, Domestic Substances List
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
ENCS (JP)	Japan. Kashin-Hou Law List
GHS	Globally Harmonized System of Classification and Labelling of Chemicals
IECSC	China. Inventory of Existing Chemical Substances
INSQ	Mexico. National Inventory of Chemical Substances
ISHL (JP)	Japan. Inventory of Industrial Safety & Health
KECI (KR)	Korea. Existing Chemicals Inventory
LC50	median lethal concentration
LOAEC	lowest observed adverse effect concentration
LOAEL	lowest observed adverse effect level
LOEL	lowest observed effect level
NDSL	Canada. Environmental Protection Act. Non-Domestic Substances List
NLP	no-longer polymer
NOAEC	no observed adverse effect concentration
NOAEL	no observed adverse effect level

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NOEC	no observed effect concentration
NOEL	no observed effect level
NZIOC	New Zealand. Inventory of Chemicals
OECD	Organisation for Economic Cooperation and Development
OEL	occupational exposure limit
ONT INV	Canada. Ontario Inventory List
PBT	persistent, bioaccumulative and toxic
PHARM (JP)	Japan. Pharmacopoeia Listing
PICCS (PH)	Philippines. Inventory of Chemicals and Chemical Substances
PNEC	predicted no-effect concentration
REACH Auth. No.:	REACH Authorisation Number
REACH AuthAppC. No.	REACH Authorisation Application Consultation Number
UK REACH Auth. No.:	UK REACH Authorisation Number
UK REACH AuthAppC. No.	UK REACH Authorisation Application Consultation Number
UK REACH-Reg.No	UK REACH Registration Number
STOT	specific target organ toxicity
SVHC	substance of very high concern
TCSI	Taiwan. Existing Chemicals Inventory
TH INV	Thailand. Existing Chemicals Inventory from FDA
TSCA	US. Toxic Substances Control Act
UVCB	substance of unknown or variable composition, complex reaction products or biological materials
VN INVL	Vietnam. National Chemical Inventory
vPvB	very persistent and very bioaccumulative

Further information

Key literature references and sources for data	:	Supplier information and data from the "Database of registered substances" of the European Chemicals Agency (ECHA) were used to create this safety data sheet.
Methods used for product classification	:	The classification for human health, physical and chemical hazards and environmental hazards were derived from a combination of calculation methods and if available test data.
Hints for trainings	:	The workers have to be trained regularly on the safe handling of the products based on the information provided in the Safety Data Sheet and the local conditions of the workplace. National regulations for the training of workers in the handling of hazardous materials must be adhered to.
Other information	:	The information provided in this Safety Data Sheet is correct to our knowledge at the date of its revision. The information given only describes the products with regard to safety arrangements and is not to be considered as a warranty or quality specification and does not constitute a legal relationship.

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The information contained in this Safety Data Sheet relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

|| Indicates updated section.