

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

ETYCOOL 10 / CAN 25L / 28 KG

Version 3.0

Print Date 06.10.2018

Revision date / valid from 05.10.2018

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

1.1. Product identifier

Trade name : ETYCOOL 10 / CAN 25L / 28 KG

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

Use of the Substance/Mixture : Refrigerant

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 Nordic Oy
 Äyritie 16
 FI 01510 Vantaa
 Telephone : +358 9 5495 640
 Telefax : +358 9 5495 6411
 E-mail address : SDS.FI@brenntag-nordic.com

1.4. Emergency telephone number

Emergency telephone number : In case of personal injury call:
 Denmark: 82 12 12 12 Giftlinien, Bispebjerg Hospital
 Finland: Poison Information Centre: (09) 471 977 (direct) or (09) 47 11 (exchange), open 24h/day
 Norway: 22 59 13 00 Giftinformasjonen (døgnåpent)
 Sweden: +46-8-331231 Giftinformationscentralen (24 hour service)
 Outside these countries: Please call your local emergency services

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

REGULATION (EC) No 1272/2008			
Hazard class	Hazard category	Target Organs	Hazard statements

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Acute toxicity	Category 4	---	H302
Serious eye damage	Category 1	---	H318
Specific target organ toxicity - repeated exposure	Category 2	---	H373
Reproductive toxicity	Category 2	---	H361d

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

Most important adverse effects

- Human Health : Contains organic solvent.
May cause headache and dizziness.
Causes serious eye damage.
May cause dizziness, nausea, gastric pain, muscle weakness and unconsciousness. Kidney disease may occur. There is even a risk for liver disease and brain damage.
- Physical and chemical hazards : Stable under normal conditions.
- Potential environmental effects : According to available data, this product is not harmful to the environment.

2.2. Label elements

Labelling according to Regulation (EC) No 1272/2008

Hazard symbols	:	
Signal word	:	Danger
Hazard statements	:	H302 Harmful if swallowed. H318 Causes serious eye damage. H361d Suspected of damaging the unborn child. H373 May cause damage to organs through prolonged or repeated exposure.
Precautionary statements		
Prevention	:	P264 Wash hands thoroughly after handling. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response	:	P308 + P313 IF exposed or concerned: Get medical advice/ attention. P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse

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Disposal	: P501	mouth. P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor. Dispose of contents/ container in accordance with the local regulations.
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Hazardous components which must be listed on the label:

- ethanediol
- Potassium 2-ethylhexanoate

2.3. Other hazards

For Results of PBT and vPvB assessment see section 12.5.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Hazardous components	Amount [%]	Classification (REGULATION (EC) No 1272/2008)	
		Hazard class / Hazard category	Hazard statements
ethanediol			
Index-No. : 603-027-00-1	> 75	Acute Tox.4 STOT RE2	H302
CAS-No. : 107-21-1			H373
EC-No. : 203-473-3			
EU REACH- : 01-2119456816-28-xxxx			
Reg. No.			
Potassium 2-ethylhexanoate			
CAS-No. : 3164-85-0	≤ 5	Skin Irrit.2 Eye Dam.1 Repr.2	H315
EC-No. : 221-625-7			H318
EU REACH- : 01-2119989496-14-xxxx			H361d
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

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General advice	: Remove from exposure, lie down. If breathing is irregular or stopped, administer artificial respiration. Take off all contaminated clothing immediately. Symptoms of poisoning may not appear for several hours. Keep under medical supervision for at least 48 hours.
If inhaled	: Remove to fresh air. Consult a physician.
In case of skin contact	: Wash off immediately with soap and plenty of water.
In case of eye contact	: Rinse immediately with plenty of water, also under the eyelids, for at least 10 minutes. Call a physician immediately.
If swallowed	: Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. If swallowed, do not induce vomiting - seek medical advice.

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	: 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	: No information available.
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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	: Combustible Liquids, Strong heating may produce combustible vapours which can form explosive mixture with air.
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5.3. Advice for firefighters

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

ETYCOOL 10 / CAN 25L / 28 KG**SECTION 6: Accidental release measures****6.1. Personal precautions, protective equipment and emergency procedures**

Personal precautions : For personal protection see section 8.

6.2. Environmental precautions

Environmental precautions : Do not flush into surface water or sanitary sewer system. If the product contaminates rivers and lakes or drains inform respective authorities.

6.3. Methods and materials for containment and cleaning up

Methods and materials for containment and cleaning up : Stop the leakage if it can be done without danger. Keep people away from and upwind of spill/leak. 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).

Further information : Danger of slipping if spilled

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 : Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Provide for good ventilation. Mechanical ventilation can be needed. Pregnant and nursing women may not be exposed to the product. Take in consideration the national regulation. Emergency eye wash fountains and emergency showers should be available in the immediate vicinity.

Hygiene measures : Smoking, eating and drinking should be prohibited in the application area. Wash hands before breaks and at the end of workday.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep away from heat and sources of ignition. Protect against light. Keep container tightly closed in a dry and well-ventilated place. To be stored separately from incompatible substances. See section 10.

7.3. Specific end use(s)

Specific use(s) : No information available.

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SECTION 8: Exposure controls/personal protection
8.1. Control parameters

Component:	ethanediol	CAS-No. 107-21-1
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Derived No Effect Level (DNEL)/Derived Minimal Effect Level (DMEL)

DNEL		
Workers, Long-term - local effects, Inhalation	:	35 mg/m ³
DNEL		
Workers, Long-term - systemic effects, Skin contact	:	106 mg/kg bw/day
DNEL		
Consumers, Long-term - local effects, Inhalation	:	7 mg/m ³
DNEL		
Consumers, Long-term - systemic effects, Skin contact	:	53 mg/kg bw/day

Predicted No Effect Concentration (PNEC)

Fresh water	:	10 mg/l
Marine water	:	1 mg/l
Intermittent releases	:	10 mg/l
Sewage treatment plant (STP)	:	199,5 mg/l
Fresh water sediment	:	20,9 mg/kg
Soil	:	1,53 mg/kg

Other Occupational Exposure Limit Values

Finland. Workplace Exposure Limits, Short Term Exposure Limit (STEL):
40 ppm, 100 mg/m³
Known Harmful Concentration (Liite 1).

Finland. Workplace Exposure Limits, Time Weighted Average (TWA):
20 ppm, 50 mg/m³
Known Harmful Concentration (Liite 1).

Finland. Workplace Exposure Limits, Skin designation:
Can be absorbed through the skin.

EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC,

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2009/161/EU, 2017/164/EU, Time Weighted Average (TWA):
20 ppm, 52 mg/m³
Indicative

EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC,
2009/161/EU, 2017/164/EU, Short Term Exposure Limit (STEL):
40 ppm, 104 mg/m³
Indicative

Component:	Potassium 2-ethylhexanoate	CAS-No. 3164-85-0
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Derived No Effect Level (DNEL)/Derived Minimal Effect Level (DMEL)

DNEL		
Workers, Long-term - systemic effects, Inhalation	:	32 mg/m ³
DNEL		
Workers, Long-term - systemic effects, Skin contact	:	12 mg/kg bw/day
DNEL		
Consumers, Long-term - systemic effects, Inhalation	:	8 mg/m ³
DNEL		
Consumers, Long-term - systemic effects, Skin contact	:	6 mg/kg bw/day
DNEL		
Consumers, Long-term - systemic effects, Ingestion	:	2,5 mg/kg bw/day

Predicted No Effect Concentration (PNEC)

Fresh water	:	0,36 mg/l
Marine water	:	0,036 mg/l
Intermittent releases	:	0,493 mg/l
Sewage treatment plant (STP)	:	71,7 mg/l
Fresh water sediment	:	6,37 mg/kg d.w.
Marine sediment	:	0,637 mg/kg d.w.
Soil	:	1,06 mg/kg d.w.

8.2. Exposure controls

Appropriate engineering controls

Provide for good ventilation. Mechanical ventilation can be needed.

Possibility to wash the eye at the place of work.

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Keep the containers closed so far as possible. Place of work and method of working give final shape to avoid direct contact to the product

Personal protective equipment

Respiratory protection

Advice : In case of insufficient ventilation, wear suitable respiratory equipment.
Recommended Filter type:A

Hand protection

Advice : Protective gloves should be replaced at first signs of wear.
Choose right chemical protection as:
Neoprene gloves
Rubber gloves
Nitrile rubber
PVC

Eye protection

Advice : Safety glasses

Skin and body protection

Advice : Protective work clothing

Environmental exposure controls

General advice : Do not flush into surface water or sanitary sewer system.
If the product contaminates rivers and lakes or drains inform respective authorities.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Form	:	viscous liquid
Colour	:	yellow
Odour	:	slight
Odour Threshold	:	no data available
pH	:	7,5 - 10
Freezing point/range	:	ca. -38 °C 50% solution
Freezing point	:	ca. -18 °C 33% solution
Boiling point/boiling range	:	> 165 °C

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Flash point	:	> 100 °C
Evaporation rate	:	no data available
Flammability (solid, gas)	:	no data available
Upper explosion limit	:	no data available
Lower explosion limit	:	no data available
Vapour pressure	:	no data available
Relative vapour density	:	no data available
Density	:	ca. 1,13 g/cm ³ (20 °C)
Water solubility	:	completely soluble
Partition coefficient: n-octanol/water	:	no data available
Auto-ignition temperature	:	no data available
Thermal decomposition	:	no data available
Viscosity, dynamic	:	no data available
Explosivity	:	no data available
Oxidizing properties	:	no data available

9.2. Other information

No further information available.

SECTION 10: Stability and reactivity**10.1. Reactivity**

Advice : Stable under recommended storage conditions.

10.2. Chemical stability

Advice : Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous reactions : May react with strong acids and strong oxidizing agents.

10.4. Conditions to avoid

Conditions to avoid : No information available.

10.5. Incompatible materials

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Materials to avoid : Strong acids, Chlorates, nitrates, Peroxides

10.6. Hazardous decomposition products

Hazardous decomposition products : In case of fire hazardous decomposition products may be produced such as: Aldehydes, Ketones

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Data for the product

Acute toxicity

Oral

Acute toxicity estimate : ca. 540 mg/kg) (Calculation method)

May cause dizziness, nausea, gastric pain, muscle weakness and unconsciousness. Kidney disease may occur. There is even a risk for liver disease and brain damage.

Inhalation

May cause headache and dizziness.

Dermal

no data available

Irritation

Skin

Result : Prolonged skin contact may cause skin irritation.
The product may be absorbed through the skin.

Eyes

Result : Causes serious eye damage.

Sensitisation

Result : Please find this information in the listing of the component/components below in this section.

CMR effects

CMR Properties

Carcinogenicity : Please find this information in the listing of the component/components below in this section.

Mutagenicity : Please find this information in the listing of the component/components below in this section.

Reproductive toxicity : Suspected of damaging the unborn child.

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Specific Target Organ Toxicity
Single exposure

Remarks : no data available

Repeated exposure

Remarks : May cause damage to organs through prolonged or repeated exposure.

Other toxic properties
Repeated dose toxicity

no data available

Aspiration hazard

no data available

Further information

Experience with human exposure : Contains organic solvent.,

Component:	ethanediol	CAS-No. 107-21-1
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Acute toxicity
Inhalation

LC50 : > 2,5 mg/l (Rat; 6 h; dust/mist)

Dermal

LD50 : > 3500 mg/kg (Mouse, male and female)

Sensitisation

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

CMR effects
CMR Properties

Carcinogenicity	:	Animal testing did not show any carcinogenic effects.
Mutagenicity	:	Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
		Animal testing did not show any mutagenic effects.
Teratogenicity	:	Ingestion of excessive amounts by pregnant animals resulted in

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maternal and foetal toxicity.
 Reproductive toxicity : Animal testing did not show any effects on fertility.

Component:	Potassium 2-ethylhexanoate	CAS-No. 3164-85-0
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Sensitisation

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

CMR effects
CMR Properties

Carcinogenicity : Study scientifically not justified.
 Mutagenicity : In vitro tests did not show mutagenic effects
 In vivo tests did not show mutagenic effects
 Reproductive toxicity : The results of animal studies suggest a fertility impairing effect.

Genotoxicity in vitro

Result : negative (In vitro mammalian cell gene mutation test; CHO (Chinese Hamster Ovary) cells; with and without metabolic activation) (OECD Test Guideline 476)Read-across (Analogy)
 negative (Bacterial Reverse Mutation Test; Salmonella typhimurium; with and without metabolic activation) (OECD Test Guideline 471)Read-across (Analogy)
 negative (Chromosome aberration test in vitro; Lymphocytes; with and without metabolic activation) (OECD Test Guideline 473)Read-across (Analogy)

Genotoxicity in vivo

Result : negative (In vivo micronucleus test; Mouse, CD1, male and female) (Oral;) (OECD Test Guideline 474)Read-across (Analogy)

Teratogenicity

NOAEL : 300 mg/kg bw/day
 Maternal (reproductive and developmental toxicity study; Rat, wistar)(Oral; 100, 300, 600 mg/kg bw/day)(No guideline followed)Fetotoxicity at highest dose were observed.Read-across (Analogy)

Reproductive toxicity

NOAEL : 300 mg/kg bw/day
 Parent (reproductive and developmental toxicity study; Rat, wistar, male and female)(Oral)(No guideline followed)Effects on fertilityRead-across (Analogy)

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SECTION 12: Ecological information
12.1. Toxicity

Component:	ethanediol	CAS-No. 107-21-1
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Acute toxicity
Fish

LC50 : 72860 mg/l (Pimephales promelas; 96 h) (static test; EPA OPP 72-1)

Toxicity to daphnia and other aquatic invertebrates

EC50 : > 100 mg/l (Daphnia magna; 48 h) (OECD Test Guideline 202)

algae

EC50 : 6500 - 13000 mg/l (Selenastrum capricornutum; 96 h) (End point: Growth rate)

12.2. Persistence and degradability

Component:	ethanediol	CAS-No. 107-21-1
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Persistence and degradability
Biodegradability

Result : 90 - 100 % (aerobic; activated sludge; 53 mg/l; Related to: Dissolved organic carbon (DOC); Exposure Time: 10 d)(OECD Test Guideline 301A)Readily biodegradable.

12.3. Bioaccumulative potential

Component:	ethanediol	CAS-No. 107-21-1
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Bioaccumulation

Result : log Kow ca. -1,36 (23 °C) ((calculated))
: Bioaccumulation is not expected.

12.4. Mobility in soil
Data for the product
Mobility

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Result : The product is water soluble.

12.5. Results of PBT and vPvB assessment

Component:	ethanediol	CAS-No. 107-21-1
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. Other adverse effects

Data for the product
Additional ecological information

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

SECTION 13: Disposal considerations**13.1. Waste treatment methods**

- Product : Eliminate waste in conditions authorized by the regulations. Store waste in containers provided for this purpose. Do not dump in drains, water sheets or the ground.
- Contaminated packaging : Dispose of contaminated packaging in the same way as the product.
- 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

Not dangerous goods for ADR, RID, IMDG and IATA.

14.1. UN number

Not applicable.

14.2. UN proper shipping name

Not applicable.

ETYCOOL 10 / CAN 25L / 28 KG**14.3. Transport hazard class(es)**

Not applicable.

14.4. Packaging group

Not applicable.

14.5. Environmental hazards

Not applicable.

14.6. Special precautions for user

Not applicable.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

IMDG : Not applicable.

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****Data for the product**

Other regulations : Exposure limits in accordance to local regulations
As a principal rule, persons under 18 years are not allowed to work with this substance.
Pregnant and nursing women may not be exposed to the product. Take in consideration the national regulation.
Only persons, who are thoroughly instructed in the dangerous properties and the necessary safety precautions of the substance, are allowed to work with it.

15.2. Chemical safety assessment

no data available

SECTION 16: Other information**Full text of H-Statements referred to under sections 2 and 3.**

H302	Harmful if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H361d	Suspected of damaging the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.

ETYCOOL 10 / CAN 25L / 28 KG**Abbreviations and Acronyms**

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
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
GHS	Globally Harmonized System of Classification and Labelling of Chemicals
LC50	median lethal concentration
LOAEC	lowest observed adverse effect concentration
LOAEL	lowest observed adverse effect level
LOEL	lowest observed effect level
NLP	no-longer polymer
NOAEC	no observed adverse effect concentration
NOAEL	no observed adverse effect level
NOEC	no observed effect concentration
NOEL	no observed effect level
OECD	Organisation for Economic Cooperation and Development
OEL	occupational exposure limit
PBT	persistent, bioaccumulative and toxic
REACH Auth. No.:	REACH Authorisation Number
REACH AppC. No.:	REACH Application Consultation Number
PNEC	predicted no-effect concentration
STOT	specific target organ toxicity
SVHC	substance of very high concern
UVCB	substance of unknown or variable composition, complex reaction products or biological materials
vPvB	very persistent and very bioaccumulative

Key literature references : 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

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regulations for the training of workers in the handling of hazardous materials must be adhered to.

|| Indicates updated section.

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.

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.