



Eni Antifreeze Extra

Safety Data Sheet

According to Regulation (EU) No. 830/2015

Revision date: 27/09/2019 Supersedes: 06/12/2016 Version: 4.0

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

1.1. Product identifier

Product form	: Mixture
Trade name	: Eni Antifreeze Extra
Product code	: 1609
Type of product	: Anti-Freeze and De-icing products
Formula	: 2709-2019
Product group	: Trade product

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

1.2.1. Relevant identified uses

Main use category	: Industrial use, Professional use, Consumer use
Industrial/Professional use spec	: Wide dispersive use Used in closed systems
Use of the substance/mixture	: Anti-freezing agents ---- Do not use the product for any purposes that have not been advised by the manufacturer.
Function or use category	: Anti-freezing agents

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

ENI S.p.A.
P.le E. Mattei 1 - 00144 Rome Italy
Phone: (+39) 06 59821
www.eni.com

Contact:
Refining & Marketing

Competent person responsible for the Safety Data Sheet (Reg. EC nr. 1907/2006): SDSInfo@eni.com

1.4. Emergency telephone number

Emergency number	: CNIT +39 0382 24444 (24h) (IT + EN)
	Poison centre (UK): National Poisons Information Service Edinburgh (24h) (+44) 844 892 0111 0870 600 6266 (UK only) (Source: UN-WHO)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [EU-GHS / CLP]

Acute toxicity (oral), Category 4	H302
Specific target organ toxicity — Repeated exposure, Category 2	H373
Full text of H statements	: see section 16

Adverse physicochemical, human health and environmental effects

Harmful if swallowed. May cause damage to organs (kidneys) through prolonged or repeated exposure (Oral). For specific information about the toxicological/ecotoxicological properties and classification of this product, see Sect. 11 and/or Sect. 12.

Eni Antifreeze Extra

Safety Data Sheet

According to Regulation (EU) No. 830/2015

2.2. Label elements

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

Hazard pictograms (CLP) :



GHS07

GHS08

CLP Signal word :

Warning

Hazardous ingredients and/or with relevant occupational exposure limits :

Ethandiol

Hazard statements (CLP) :

H302 - Harmful if swallowed.
H373 - May cause damage to organs (kidneys) through prolonged or repeated exposure (Oral).

Precautionary statements (CLP) :

P102 - Keep out of reach of children.
P260 - Do not breathe mist, spray, Vapours.
P264 - Wash hands thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P301+P312 - IF SWALLOWED: Call a POISON CENTER, a doctor if you feel unwell.
P330 - Rinse mouth.
P501 - Dispose of contents/container to according to national or local regulations.

2.3. Other hazards (not relevant for classification)

Other hazards not contributing to the classification :

The vapours are heavier than air and will accumulate in closed areas and at ground level, with backfire hazard. This material can accumulate static charge by flow or agitation and can be ignited by static discharge. Any substance, in case of accidents involving pressurized circuits and the like, may be accidentally injected under the skin, even without external damage. In such a case, the victim should be brought to an hospital as soon as possible, to get specialized medical treatment. Do not wait for symptoms to develop.

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Notes : Composition/ Information on ingredients:
Ethylene glycol.
Rust inhibitor
Water

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [EU-GHS / CLP]
Ethandiol	(CAS-No.) 107-21-1 (EC-No.) 203-473-3 (EC Index-No.) 603-027-00-1 (REACH-no) 01-2119456816-28	80 - 97	Acute Tox. 4 (Oral), H302 STOT RE 2, H373
disodium tetraborate pentahydrate; borax pentahydrate (see note [*]) Substance included in REACH Candidate List (Disodium tetraborate, anhydrous)	(CAS-No.) 12179-04-3 (EC-No.) 215-540-4 (EC Index-No.) 005-011-02-9 (REACH-no) 01-2119490790-32-0002	0,3 - 1,5	Eye Irrit. 2, H319 Repr. 1B, H360FD

Specific concentration limits:

Name	Product identifier	Specific concentration limits
disodium tetraborate pentahydrate; borax pentahydrate (see note [*])	(CAS-No.) 12179-04-3 (EC-No.) 215-540-4 (EC Index-No.) 005-011-02-9 (REACH-no) 01-2119490790-32-0002	(C >= 6,5) Repr. 1B, H360FD

Notes : Note [*]:
Substance included in REACH Candidate List
Identified in REACH Annex XVII
See Heading 15

Full text of H-statements: see section 16

Eni Antifreeze Extra

Safety Data Sheet

According to Regulation (EU) No. 830/2015

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: In case of doubt or persistent symptoms, consult always a physician.
First-aid measures after inhalation	: Not expected to present a significant hazard under anticipated conditions of normal use. If casualty is unconscious and not breathing: Place in the recovery position. In case of disturbances owing to inhalation of vapours or mists, remove the victim from exposure; keep at rest; if necessary, seek medical attention.
First-aid measures after skin contact	: Take off immediately all contaminated clothing. Wash skin with plenty of water. If inflammation or irritation persists, seek medical advice.
First-aid measures after eye contact	: Remove contact lenses, if present and easy to do so. Rinse eyes thoroughly for at least 15 minutes. Keep eyelids well apart. If irritation persists, seek medical advice.
First-aid measures after ingestion	: Rinse mouth thoroughly with water. In case of spontaneous vomiting, keep head low, to avoid the risk of aspiration into the lungs. Make him/her drink plenty of water. Send the casualty immediately to hospital.

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

Symptoms/effects after inhalation	: None under normal conditions at ambient temperatures.
Symptoms/effects after skin contact	: Prolonged or repeated skin contact may cause a slight transient irritation.
Symptoms/effects after eye contact	: Contact with eyes may cause a light transient irritation.
Symptoms/effects after ingestion	: Harmful if swallowed. Ingestion of significant quantities (see sect. 11) may cause kidney damages, coma and death. The effects may be delayed.
Symptoms/effects upon intravenous administration	: No information available.
Chronic symptoms	: May cause damage to kidneys through prolonged or repeated exposure if swallowed.

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

Treat symptomatically. Obtain medical attention if casualty has an altered state of consciousness or if symptoms do not resolve.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Small-size fires: carbon dioxide, dry chemicals, alcohol-resistant foam, sand or earth. Large fires: alcohol-resistant foam or water fog (mist). These means should be used by trained personnel only. Other extinguishing gases (according to regulations).
Unsuitable extinguishing media	: None specific.

5.2. Special hazards arising from the substance or mixture

Fire hazard	: Not flammable. The vapours are denser than air and may travel along the ground. Distance ignition possible.
Explosion hazard	: No direct explosion hazard. Heat may build pressure in tank and containers, rupturing closed vessels, spreading fire and increasing risk of burns and injuries.
Hazardous decomposition products in case of fire	: Incomplete combustion will generate poisonous carbon monoxide, carbon dioxide and other toxic gases. Oxygenated compounds (aldehydes, etc.). BOx.

5.3. Advice for firefighters

Firefighting instructions	: Shut off source of product, if possible. Move undamaged containers from immediate hazard area if it can be done safely. Spilled product which is not burning should be covered with sand or foam. Use water sprays to cool containers and surfaces exposed to the flames. If the fire cannot be controlled, evacuate area.
Special protective equipment for firefighters	: Personal protection equipment for firefighters (see also sect. 8). Do not enter fire area without proper protective equipment, including respiratory protection. EN 443. EN 469. EN 659. In case of a large fire or in confined or poorly ventilated spaces, wear full fire resistant protective clothing and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Other information	: In case of fire, do not discharge residual product, waste materials and runoff water: collect separately and use a proper treatment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	: Stop or contain leak at the source, if safe to do so. Eliminate all ignition sources if safe to do so (e.g. electricity, sparks, fires, flares). Avoid accidental sprays on hot surfaces or electrical contacts. Avoid direct contact with released material.
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6.1.1. For non-emergency personnel

Protective equipment	: See Section 8.
Emergency procedures	: Alert emergency personnel. Except in case of small spillages, the feasibility of any actions should always be assessed and advised, if possible, by a trained, competent person in charge of managing the emergency.

Eni Antifreeze Extra

Safety Data Sheet

According to Regulation (EU) No. 830/2015

6.1.2. For emergency responders

- Protective equipment : Small spillages: normal antistatic working clothes are usually adequate. Large spillages: full body suit of chemically resistant and antistatic material. Work gloves (preferably gauntlets) providing adequate chemical resistance. Gloves made of PVA are not water-resistant, and are not suitable for emergency use. Work helmet. Antistatic non-skid safety shoes or boots. Goggles and /or face shield, if splashes or contact with eyes is possible or anticipated. Respiratory protection: A half or full-face respirator with combined dust/organic vapour filter(s), or a Self-Contained Breathing Apparatus (SCBA) can be used according to the extent of spill and predictable amount of exposure. If the situation cannot be completely assessed, or if an oxygen deficiency is possible, only SCBA's should be used.
- Emergency procedures : Notify local authorities according to relevant regulations.

6.2. Environmental precautions

Do not let the product accumulate in confined or underground spaces. Do not let the product flow into sewers or water courses, or in any way contaminate the environment.

6.3. Methods and material for containment and cleaning up

- For containment : Contain spilled liquid with sand, earth or other suitable absorbents. Recover free liquid in suitable containers. Clean contaminated area. Dispose of according to local regulations. If in water: This product is soluble in water, and usually no special measures are feasible. If possible, collect spilled product with mechanical means. Notify official Authorities when required. Dispose of in accordance with relevant local regulations. Do not use solvents or dispersants, unless specifically advised by an expert, and, if required, approved by local authorities.
- Other information : Local regulations may also prescribe or limit actions to be taken. Recommended measures are based on the most likely spillage scenarios for this material; however, local conditions (wind, air temperature, wave/current direction and speed) may significantly influence the choice of appropriate actions. For this reason, local experts should be consulted when necessary.

6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection". For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Provide good ventilation in process area to prevent formation of vapour. Keep away from sources of ignition - No smoking. Store the product in cool, well ventilated surroundings. Do not breathe fume/ mist/ vapours.
- Hygiene measures : Ensure that proper housekeeping measures are in place. Avoid contact with skin. Do not breathe fume/ mist/ vapours. Do not ingest. Do not smoke. Do not eat and do not drink during use. Do not clean hands with dirty or oil-soaked rags. Do not re-use clothes, if they are still contaminated. Keep away from food and beverages. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Contaminated work clothing should not be allowed out of the workplace. Separate working clothes from town clothes. Launder separately.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Store in dry, well ventilated area. Keep away from open flames, hot surfaces and sources of ignition. Do not smoke. If the product is supplied in containers: Keep only in the original container in a cool, well ventilated place away from : Keep containers tightly closed and properly labelled.
- Incompatible products : Strong oxidants, strong acids, alkali metals.
- Incompatible materials : Do not use zinc containers. Use only the original containers or others that have been approved for this product.
- Storage area : Storage area layout, tank design, equipment and operating procedures must comply with the relevant European, national or local legislation. Storage installations should be designed with adequate bunds so as to prevent ground and water pollution in case of leaks or spills. Cleaning, inspection and maintenance of internal structure of storage tanks must be done only by properly equipped and qualified personnel as defined by national, local or company regulations.
- Packages and containers: : Store away from direct sunlight or other heat sources. Do not re-use empty containers.
- Packaging materials : Store in glass, stainless steel, or aluminium receptacles. Some synthetic materials may be unsuitable for containers or container linings depending on the material specification and intended use. Compatibility should be checked with the manufacturer, according to the specific use conditions.

7.3. Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Ethandiol (107-21-1)		
EU	IOELV TWA (mg/m ³)	52 mg/m ³ Vapours

Eni Antifreeze Extra

Safety Data Sheet

According to Regulation (EU) No. 830/2015

Ethandiol (107-21-1)		
EU	IOELV TWA (ppm)	20 ppm
EU	IOELV STEL (mg/m ³)	104 mg/m ³ Vapours
EU	IOELV STEL (ppm)	40 ppm
Austria	MAK (mg/m ³)	26 mg/m ³ Vapours
Austria	MAK (ppm)	10 ppm
Austria	MAK Short time value (mg/m ³)	52 mg/m ³ Vapours
Austria	MAK Short time value (ppm)	20 ppm
Belgium	Limit value (mg/m ³)	52 mg/m ³ (Inhalable aerosol)
Belgium	Short time value (mg/m ³)	104 mg/m ³ (Inhalable aerosol)
Denmark	Grænseværdi (langvarig) (mg/m ³)	26 mg/m ³ (Inhalable aerosol)
Denmark	Grænseværdi (langvarig) (ppm)	10 ppm
Denmark	Grænseværdi (kortvarig) (mg/m ³)	52 mg/m ³ (Inhalable aerosol)
Denmark	Grænseværdi (kortvarig) (ppm)	20 ppm
France	VME (mg/m ³)	52 mg/m ³ Vapours
France	VME (ppm)	20 ppm
France	VLE (mg/m ³)	104 mg/m ³ Vapours
France	VLE (ppm)	40 ppm
Germany	TRGS 900 Occupational exposure limit value (mg/m ³)	26 mg/m ³ (Inhalable aerosol) (15 min)
Germany	TRGS 900 Occupational exposure limit value (ppm)	10 ppm
Germany	TRGS 900 Limitation of exposure peaks (mg/m ³)	52 mg/m ³ (Inhalable aerosol) (15 min)
Germany	TRGS 900 Limitation of exposure peaks (ppm)	20 ppm
Ireland	OEL (8 hours ref) (mg/m ³)	52 mg/m ³ Vapours
Ireland	OEL (8 hours ref) (ppm)	20 ppm
Ireland	OEL (15 min ref) (mg/m ³)	104 mg/m ³ Vapours
Ireland	OEL (15 min ref) (ppm)	40 ppm
Italy	OEL TWA (mg/m ³)	52 mg/m ³ Skin
Italy	OEL TWA (ppm)	20 ppm Skin
Italy	OEL STEL (mg/m ³)	104 mg/m ³ Skin
Italy	OEL STEL (ppm)	40 ppm Skin
Netherlands	MAC TGG 8h (mg/m ³)	52 mg/m ³ Vapours
Netherlands	MAC TGG 15 min (mg/m ³)	104 mg/m ³ Vapours
Poland	NDS (mg/m ³)	15 mg/m ³ (Inhalable aerosol)
Spain	VLA-ED (mg/m ³)	52 mg/m ³ (Inhalable aerosol)
Spain	VLA-EC (mg/m ³)	104 mg/m ³ (Inhalable aerosol)
Spain	Notes	skin
Sweden	Nivågränsvärde (NVG) (mg/m ³)	25 mg/m ³ Vapours
Sweden	Nivågränsvärde (NVG) (ppm)	10 ppm
Sweden	Kortidsvärde (KTV) (mg/m ³)	50 mg/m ³ Vapours
Sweden	Kortidsvärde (KTV) (ppm)	20 ppm
United Kingdom	WEL TWA (mg/m ³)	52 mg/m ³ (Inhalable aerosol)
United Kingdom	WEL TWA (ppm)	20 ppm
United Kingdom	WEL STEL (mg/m ³)	104 mg/m ³ (Inhalable aerosol)
United Kingdom	WEL STEL (ppm)	40 ppm
Switzerland	MAK (mg/m ³)	26 mg/m ³ (Inhalable aerosol)
Switzerland	MAK (ppm)	10 ppm (Inhalable aerosol)
Switzerland	VLE (mg/m ³)	52 mg/m ³ (Inhalable aerosol)
Switzerland	VLE (ppm)	20 ppm (Inhalable aerosol)
USA - ACGIH	ACGIH TLV®-STEL Ceiling (mg/m ³)	100 mg/m ³
disodium tetraborate pentahydrate; borax pentahydrate (12179-04-3)		
Belgium	Limit value (mg/m ³)	2 mg/m ³ (Boric acid and sodium borate)
Belgium	Short time value (mg/m ³)	6 mg/m ³ (Boric acid and sodium borate)
Denmark	Grænseværdi (langvarig) (mg/m ³)	1 mg/m ³
Denmark	Grænseværdi (kortvarig) (mg/m ³)	2 mg/m ³
France	VME (mg/m ³)	1 mg/m ³

Eni Antifreeze Extra

Safety Data Sheet

According to Regulation (EU) No. 830/2015

disodium tetraborate pentahydrate; borax pentahydrate (12179-04-3)		
Germany	TRGS 900 Occupational exposure limit value (mg/m ³)	5 mg/m ³ (Inhalable aerosol)
Germany	TRGS 900 Limitation of exposure peaks (mg/m ³)	5 mg/m ³ (Inhalable aerosol)
Ireland	OEL (8 hours ref) (mg/m ³)	1 mg/m ³
Spain	VLA-ED (mg/m ³)	2 mg/m ³ (Boric acid and sodium borate)
Spain	VLA-EC (mg/m ³)	6 mg/m ³ (Boric acid and sodium borate)
United Kingdom	WEL TWA (mg/m ³)	1 mg/m ³
Switzerland	MAK (mg/m ³)	1 mg/m ³ (Inhalable aerosol)
Switzerland	VLE (mg/m ³)	1 mg/m ³ (Inhalable aerosol)
USA - ACGIH	ACGIH TLV®-TWA (mg/m ³)	2 mg/m ³ (Borates, inorganic)
USA - ACGIH	ACGIH TLV®-STEL (mg/m ³)	6 (Borates, inorganic)
USA - NIOSH	NIOSH REL (TWA) (mg/m ³)	1 mg/m ³

Monitoring methods

Monitoring methods	Monitoring procedures should be chosen according to the indications set by national authorities or labour contracts, Refer to relevant legislation and in any case to the good practice of industrial hygiene.
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Eni Antifreeze Extra

DNEL/DMEL (additional information)	
Additional information	Not applicable
PNEC (additional information)	
Additional information	Not applicable

Ethandiol (107-21-1)

DNEL/DMEL (Workers)	
Long-term - systemic effects, dermal	106 mg/kg bodyweight/day
Long-term - local effects, inhalation	35 mg/m ³
DNEL/DMEL (General population)	
Acute - local effects, inhalation	7 mg/m ³
Long-term - systemic effects, dermal	53 mg/kg bodyweight/day
PNEC (Water)	
PNEC aqua (freshwater)	10 mg/l
PNEC aqua (marine water)	1 mg/l
PNEC aqua (intermittent, freshwater)	10 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	37 mg/kg dwt
PNEC sediment (marine water)	3,7 mg/kg dwt
PNEC (Soil)	
PNEC soil	1,53 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	199,5 mg/l

disodium tetraborate pentahydrate; borax pentahydrate (12179-04-3)

DNEL/DMEL (Workers)	
Acute - local effects, inhalation	17 mg/m ³
Long-term - systemic effects, dermal	32432 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	6,7 mg/m ³
DNEL/DMEL (General population)	
Long-term - systemic effects, oral	0,79 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	3,4 mg/m ³
Long-term - systemic effects, dermal	159,5 mg/kg bodyweight/day
PNEC (Water)	
PNEC aqua (freshwater)	2,9 mg/l
PNEC aqua (marine water)	2,9 mg/l
PNEC aqua (intermittent, freshwater)	13,7 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	1,8 mg/kg dwt
PNEC sediment (marine water)	1,8 mg/kg dwt
PNEC (Soil)	
PNEC soil	5,7 mg/kg dwt
PNEC (Oral)	

Eni Antifreeze Extra

Safety Data Sheet

According to Regulation (EU) No. 830/2015

disodium tetraborate pentahydrate; borax pentahydrate (12179-04-3)

PNEC oral (secondary poisoning) 79 mg/kg bodyweight

PNEC (STP)

PNEC sewage treatment plant 10 mg/l

Note : The Derived No Effect Level (DNEL) is an estimated safe level of exposure that is derived from toxicity data in accord with specific guidance within the European REACH regulation. The DNEL may differ from an Occupational Exposure Limit (OEL) for the same chemical. OELs may be recommended by an individual company, a governmental regulatory body or an expert organization, such as the Scientific Committee for Occupational Exposure Limits (SCOEL) or the American Conference of Governmental Industrial Hygienists (ACGIH). OELs are considered to be safe exposure levels for a typical worker in an occupational setting for an 8-hour work shift, 40 hour work week, as a time weighted average (TWA) or a 15 minute short-term exposure limit (STEL). While also considered to be protective of health, OELs are derived by a process different from that of REACH.

8.2. Exposure controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

Personal protective equipment (for industrial or professional use):

Gloves. Protective clothing. Safety glasses. Safety shoes or boots.

Hand protection:

Protective gloves. Adequate materials: nitrile (NBR) or neoprene with a protection index ≥ 5 (permeation time ≥ 240 mins). Thickness of glove material: $> 0,4$ mm. Personal hygiene is a key element for an effective hand care. Gloves must be worn only with clean hands. After wearing gloves, hands must be carefully washed and dried. Use gloves respecting all the conditions and within the limits set by the manufacturer. Replace gloves immediately in case of cuts, holes or other signs of damages or degradation. If necessary, refer to the EN 374 standard.

Eye protection:

Safety glasses. DIN EN 166

Skin and body protection:

Long-sleeved overalls. If necessary, refer to the EN 340 and related standards, for definition of characteristics and performance according to the risk rating of the area. Wash contaminated clothing before reuse.

Respiratory protection:

Not necessary with sufficient ventilation. Independently from other possible actions (technical modifications, operating procedures, and other means to limit the exposure of workers), personal protection equipment can be used according to necessity. Open or well ventilated spaces: if the product is handled without adequate containment: use full or half-face masks with adequate filter for mists and organic vapours. (EN 136/140/145). Closed or confined areas (e.g. tank interiors): the use of protection measures for airways (masks or self-contained breathing apparatus), must be assessed according to the specific activity, as well as level and duration of predicted exposure. (EN 136/140/145). Combination filter device (DIN EN 141). Combined gas/dust mask with filter type: Type A. Filter P (white)

Personal protective equipment symbol(s):



Thermal hazard protection:

None in normal use conditions.

Environmental exposure controls:

Storage areas/installations should be designed with adequate bunds so as to prevent ground and water pollution in case of leaks or spills. Do not discharge the product into the environment. Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

Consumer exposure controls:

Ensure adequate ventilation.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid
Appearance : Liquid, bright & clear.
Molecular mass : Not applicable for mixtures
Colour : Turquoise blue.
Odour : Glycol.

Eni Antifreeze Extra

Safety Data Sheet

According to Regulation (EU) No. 830/2015

Odour threshold	: No data available
pH	: 7 - 9
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: 163 - 185 °C (ASTM D 1120)
Flash point	: > 112 °C (ASTM D 92)
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Not applicable
Vapour pressure	: < 0,1 mPa (20°C)
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Density	: 1,108 - 1,116 kg/l (ASTM D 1122)
Solubility	: Water: Complete.
Log Pow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: None.
Oxidising properties	: None.
Explosive limits	: 3 - 53 vol % (Ethylene glycol)

9.2. Other information

Bulk density	: 1,1 - 1,14 (20°C) (ASTM D 4052)
Additional information	: No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

This mixture does not offer any further hazard for reactivity, except what is reported in the following paragraphs.

10.2. Chemical stability

Stable product, according to its intrinsic properties (in normal conditions of storage and handling).

10.3. Possibility of hazardous reactions

None (in normal conditions of storage and handling). Contact with strong oxidizers (peroxides, chromates, etc.) or alkali metals may cause a fire hazard. Sensitivity to heat, friction or shock cannot be assessed in advance.

10.4. Conditions to avoid

Keep away from open flames, hot surfaces and sources of ignition. Avoid the build-up of electrostatic charge.

10.5. Incompatible materials

Strong oxidants, strong acids, alkali metals.

10.6. Hazardous decomposition products

Thermal decomposition generates : Oxygenated compounds (aldehydes, etc.), Carbon dioxide, Carbon monoxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Oral: Harmful if swallowed.
Acute toxicity (dermal)	: Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (inhalation)	: Not classified (Based on available data, the classification criteria are not met)
Additional information	: (according to composition) The toxic (fatal) dose for pure ethylene glycol has been estimated 1.4 ml/kg wt (about 100 ml for an adult person).

ATE (oral)	520 mg/kg bodyweight
Ethandiol (107-21-1)	
LD50 oral rat	7712 mg/kg bodyweight
LD50 dermal	> 3500 mg/kg (mouse)
LC50 inhalation rat (mg/l)	> 2,5 mg/l (6h)
disodium tetraborate pentahydrate; borax pentahydrate (12179-04-3)	
LD50 oral rat	3450 - 4080 mg/kg (anhydrous form)

Eni Antifreeze Extra

Safety Data Sheet

According to Regulation (EU) No. 830/2015

disodium tetraborate pentahydrate; borax pentahydrate (12179-04-3)	
LD50 dermal rabbit	> 2000 mg/kg (anhydrous form)
LC50 inhalation rat (mg/l)	> 2,04 mg/l/4h (LOAEL)

Skin corrosion/irritation : Not classified (Based on available data, the classification criteria are not met)
pH: 7 - 9

Additional information : (according to composition)
Not irritating

Serious eye damage/irritation : Not classified (Based on available data, the classification criteria are not met)
pH: 7 - 9

Additional information : (according to composition)
Not irritating

Respiratory or skin sensitisation : Not classified (Based on available data, the classification criteria are not met)

Additional information : (according to composition)

Germ cell mutagenicity : Not classified (Based on available data, the classification criteria are not met)

Additional information : (according to composition)

Carcinogenicity : Not classified (Based on available data, the classification criteria are not met)

Additional information : (according to composition)

Ethandiol (107-21-1)	
NOAEL (chronic, oral, animal/male, 2 years)	1500 mg/kg bodyweight Mouse

Reproductive toxicity : Not classified (Based on available data, the classification criteria are not met)

Additional information : (according to composition)
This product contains components with a Specific Concentration Limit (SCL).
This product contains a substance (disodium tetraborate pentahydrate) classified as Repr. 1B, H360fd (CLP) according to the criteria of EU. Specific concentration limit (SCL): ≥ 6.5 % m/m.
May damage fertility. May damage the unborn child.

STOT-single exposure : Not classified (Based on available data, the classification criteria are not met)

Additional information : (according to composition)

STOT-repeated exposure : May cause damage to kidneys through prolonged or repeated exposure if swallowed.

Additional information : (according to composition)
The ethylene glycol present in this formulation may cause intoxication, central nervous system depression (incoordination, dizziness), respiratory failure, liver and kidney damage.

Ethandiol (107-21-1)	
NOAEL (oral, rat, 90 days)	150 mg/kg bodyweight/day 12 months.

Aspiration hazard : Not classified (Based on available data, the classification criteria are not met)

Additional information : (according to composition)

Potential adverse human health effects and symptoms : Harmful if swallowed. May cause damage to kidneys through prolonged or repeated exposure if swallowed. Prolonged and repeated skin contact may cause reddening, irritation and dermatitis. Contact with eyes may cause temporary reddening and irritation.

Other information : None.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment. An uncontrolled release to the environment may nevertheless produce a contamination of different environmental compartments (soil, underground, surface water bodies, aquifers). Handle according to general working hygiene practices to avoid pollution and release into the environment.

Ecology - water : This product is soluble in water.

Acute aquatic toxicity : Not classified (Based on available data, the classification criteria are not met)

Chronic aquatic toxicity : Not classified (Based on available data, the classification criteria are not met)

Eni Antifreeze Extra	
EC50 Daphnia 1	≥ 100 mg/l (Calculated data). This evaluation is based on the information provided by the suppliers.
ErC50 (algae)	≥ 100 mg/l (Calculated data). This evaluation is based on the information provided by the suppliers.

ethanediol; ethylene glycol (107-21-1)	
LC50 fish 1	15380 mg/l (LC10 - 96h)
LC50 fish 2	72860 mg/l (Pimephales promelas)
EC50 Daphnia 1	8590 mg/l (EC10 - 48h)

Eni Antifreeze Extra

Safety Data Sheet

According to Regulation (EU) No. 830/2015

ethanediol; ethylene glycol (107-21-1)	
EC50 Daphnia 2	100 mg/l
EC50 96h algae (1)	3536 - 13000 mg/l
ErC50 (algae)	≥ 100 mg/l (EC10)
NOEC (chronic)	15380 - 32000 mg/l

disodium tetraborate pentahydrate; borax pentahydrate (12179-04-3)	
LC50 fish 1	74 - 79,7 mg/l
LC50 fish 2	79,7 mg/l (Pimephales promelas)
LC50 other aquatic organisms 1	64 - 544 mg/l (96h)
LC50 other aquatic organisms 2	133 mg/l (Daphnia Magna) (48h)
EC50 72h algae (1)	40,2 - 66 mg/l

12.2. Persistence and degradability

Eni Antifreeze Extra	
Persistence and degradability	The most significant constituents of the product should be considered as "readily biodegradable".

ethanediol; ethylene glycol (107-21-1)	
Persistence and degradability	Readily biodegradable.
Biochemical oxygen demand (BOD)	0,36 - 0,4 g O ₂ /g substance
Chemical oxygen demand (COD)	1,21 g O ₂ /g substance
ThOD	1,26 g O ₂ /g substance

disodium tetraborate pentahydrate; borax pentahydrate (12179-04-3)	
Persistence and degradability	Inherently biodegradable.

12.3. Bioaccumulative potential

Eni Antifreeze Extra	
Bioaccumulative potential	Low bioaccumulation potential.

ethanediol; ethylene glycol (107-21-1)	
Log Pow	-1,36

disodium tetraborate pentahydrate; borax pentahydrate (12179-04-3)	
Log Pow	-1,53

12.4. Mobility in soil

Eni Antifreeze Extra	
Ecology - soil	No data available.

12.5. Results of PBT and vPvB assessment

Eni Antifreeze Extra	
This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII	
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII	
Results of PBT-vPvB assessment	The components in this formulation do not meet the criteria for classification as PBT or vPvB. The product should be considered as "Not persistent" in the environment, according to the REACH Annex XIII criteria (point 1.1)
Component	
disodium tetraborate pentahydrate; borax pentahydrate (12179-04-3)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

12.6. Other adverse effects

Other adverse effects : None.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

- Waste treatment methods : Do not dispose of the product, either new or used, by discharging into sewers, tunnels, lakes or water courses. Deliver to a qualified official collector.
- Sewage disposal recommendations : Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed. Dispose of in a safe manner in accordance with local/national regulations.
- Product/Packaging disposal recommendations : European Waste Catalogue code(s) (Decision 2001/118/CE): 16 01 14* (antifreeze fluids containing dangerous substances). This EWC code is only a general indication, and takes into account the original composition of the product and its intended use. The user has the responsibility of choosing the right EWC code, considering the actual use of the product, alterations and contaminations.

Eni Antifreeze Extra

Safety Data Sheet

According to Regulation (EU) No. 830/2015

Additional information	: Do not cut, weld, drill, burn or incinerate empty containers or drums, unless they have been cleaned, and declared safe.
Ecology - waste materials	: The product as it is does not contain halogenated substances.
EURAL code (EWC)	: 16 01 14* - antifreeze fluids containing dangerous substances

SECTION 14: Transport information

In accordance with ADN / ADR / IATA / IMDG / RID

ADR	IMDG	IATA	ADN	RID
14.1. UN number				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.2. UN proper shipping name				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.3. Transport hazard class(es)				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.4. Packing group				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.5. Environmental hazards				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
None.				

14.6. Special precautions for user

- Overland transport

Not regulated

- Transport by sea

Not regulated

- Air transport

Not regulated

- Inland waterway transport

Not regulated

- Rail transport

Not regulated

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

IBC code : Not applicable.

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

The following restrictions are applicable according to Annex XVII of the REACH Regulation (EC) No 1907/2006:

3(b) Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10	Eni Antifreeze Extra - Ethandiol
30. Substances which are classified as reproductive toxicant category 1A or 1B in Part 3 of Annex VI to Regulation (EC) No 1272/2008 and are listed in Appendix 5 or Appendix 6, respectively.	disodium tetraborate pentahydrate; borax pentahydrate

Contains a substance on the REACH candidate list in concentration $\geq 0.1\%$ or with a lower specific limit: disodium tetraborate pentahydrate; borax pentahydrate (EC 215-540-4, CAS 12179-04-3)

Contains no REACH Annex XIV substances

Eni Antifreeze Extra

Safety Data Sheet

According to Regulation (EU) No. 830/2015

Other information, restriction and prohibition regulations : Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). (et sequens). Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (et sequens). Directives 89/391/CEE, 89/654/CEE, 89/655/CEE, 89/656/CEE, 90/269/CEE, 90/270/CEE, 90/394/CEE, 90/679/CEE, 93/88/CEE, 95/63/CE, 97/42/CE, 98/24/CE, 99/38/CE, 99/92/CE, 2001/45/CE, 2003/10/CE, 2003/18/CE (Health and safety on the workplace). Directive 2012/18/CE (Control of major-accident hazards involving dangerous substances). Directive 2004/42/CE (Limitation of emissions of Volatile Organic Compounds). Directive 98/24/EC (protection of the health and safety of workers from the risks related to chemical agents at work). Directive 92/85/CE (measures to encourage improvements in the safety and health at work of pregnant workers and workers who have recently given birth or are breastfeeding). Substances Depleting the Ozone layer (1005/2009) - Annex I Substances (ODP). Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC. Regulation EU (649/2012) - Export and Import of hazardous chemicals (PIC).

15.1.2. National regulations

National adoption of EU Directives concerning health and safety on the workplace.

Relevant national laws on protection of the health of pregnant workers (National adoption of Dir. 92/85/EEC).

National adoption of EU Directives concerning control of major-accident hazards involving dangerous substances (2012/18/CE).

Relevant national laws on prevention of water pollution.

Germany

Reference to AwSV : Water hazard class (WGK) (D) 1, Slightly hazardous to water (Classification according to AwSV, Annex 1)

WGK remark : Classification based on the components in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS)

VbF class (D) : Not applicable.

Storage class (LGK) (D) : LGK 12 - Non-combustible liquids

Employment restrictions : Employment prohibitions or restrictions on the protection of young people at work according to § 22 JArbSchG in the case of formation of hazardous substances have to be observed.

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Other information, restrictions and prohibition regulations : TRGS 400: Hazard assessment for activities involving Hazardous Substances
TRGS 401: Risks resulting from skin contact - identification, assessment, measures
TRGS 402: Identification and Assessment of the Risks from Activities involving Hazardous Substances: Inhalation Exposure
TRGS 500: Protective measures
TRGS 555: Working instruction and information for workers
TRGS 900: Occupational Exposure Limits
TRGS 905: List of carcinogenic, mutagenic or toxic for reproduction substances

Netherlands

Saneringsinspanningen : C - Minimize discharge

SZW-lijst van kankerverwekkende stoffen : ethanediol; ethylene glycol is listed

SZW-lijst van mutagene stoffen : None of the components are listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : None of the components are listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : disodium tetraborate pentahydrate; borax pentahydrate is listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : disodium tetraborate pentahydrate; borax pentahydrate is listed

Denmark

Danish National Regulations : Young people under 18 years are not allowed to use the product
Pregnant/breastfeeding women working with the product must not be in direct contact with it
The requirements from the Danish Working Environment Authorities regarding work with carcinogens must be followed during use and disposal

15.2. Chemical safety assessment

For this mixture a chemical safety assessment has been not carried out

A chemical safety assessment has been carried out for the following components of this mixture:

Ethandiol
disodium tetraborate pentahydrate; borax pentahydrate

Eni Antifreeze Extra

Safety Data Sheet

According to Regulation (EU) No. 830/2015

SECTION 16: Other information

Indication of changes:

Section	Changed item	Change	Notes
1.1	Formula	Modified	
1.1	Type of product	Added	
1.1	Trade name	Modified	
1.1	Name	Modified	
1.2	Use of the substance/mixture	Added	
1.2	Use of the substance/mixture	Removed	
2.1	Adverse physicochemical, human health and environmental effects	Modified	
2.3	Other hazards not contributing to the classification	Added	
3	Composition/information on ingredients	Modified	
3.2	Comments	Added	
3.2	Notes	Added	
4.1	First-aid measures after ingestion	Modified	
4.1	First-aid measures after eye contact	Modified	
4.1	First-aid measures after skin contact	Modified	
4.1	First-aid measures after inhalation	Modified	
4.1	First-aid measures general	Modified	
4.2	Symptoms/effects after skin contact	Modified	
4.2	Symptoms/effects after eye contact	Modified	
4.2	Symptoms/effects after ingestion	Modified	
4.2	Symptoms/effects after inhalation	Modified	
4.2	Symptoms / injuries (general indications)	Removed	
4.3	Other medical advice or treatment	Modified	
5.2	Hazardous decomposition products in case of fire	Added	
5.2	Fire hazard	Modified	
5.2	Explosion hazard	Modified	
5.3	Special protective equipment for firefighters	Modified	
5.3	Firefighting instructions	Modified	
6.1	Protective equipment	Modified	
6.3	For containment	Modified	
7.1	Precautions for safe handling	Modified	
7.1	Hygiene measures	Modified	
7.2	Packages and containers:	Added	
7.2	Packaging materials	Modified	
8.1	DNEL/DMEL and PNEC values	Added	
8.2	Materials for protective clothing	Removed	
8.2	Respiratory protection	Modified	
8.2	Hand protection	Modified	
8.2	Eye protection	Modified	
8.2	Thermal hazard protection	Modified	
8.2	Consumer exposure controls	Modified	
8.2	Personal protective equipment (for industrial or professional use)	Modified	
8.2	Appropriate engineering controls	Modified	
9.1	Density	Added	
9.1	Flammability (solid, gas)	Added	
9.2	Bulk density	Modified	
10.3	Possibility of hazardous reactions	Modified	

Eni Antifreeze Extra

Safety Data Sheet

According to Regulation (EU) No. 830/2015

10.4	Conditions to avoid	Modified	
11.1	Additional information	Modified	
11.1	Potential adverse human health effects and symptoms	Modified	
12.1	Ecology - air	Removed	
12.1	Ecology - general	Modified	
14.6	Special transport precautions	Removed	
14.7	IBC code	Modified	
15.1	Saneringsinspanningen	Added	
15.1	Other information, restrictions and prohibition regulations	Added	
15.1	Employment restrictions	Added	
15.1	REACH Annex XVII	Modified	
15.1	Other information, restriction and prohibition regulations	Added	
16	Indication of changes	Added	

Abbreviations and acronyms:

	Complete text of the H phrases quoted in this Safety Data Sheet. These phrases are reported here for information only, and MAY NOT correspond to the classification of the product.
	N/A = not applicable
	N/D = not available
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC50	Effective concentration for 50 percent of test population (median effective concentration)
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Lethal concentration for 50 percent of test population (median lethal concentration)
LD50	Lethal dose for 50 percent of test population (median lethal dose)
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals, Regulation (EC) No 1907/2006
RID	Regulation concerning the International Carriage of Dangerous Goods by Railways
SDS	Safety Data Sheet
STP	Sewage treatment plant
vPvB	Very Persistent and Very Bioaccumulative

- Data sources : This Safety Data Sheet is based on the real characteristics of the components and their combination, taking into account the information provided by the suppliers.
- Training advice : Provide adequate training to professional operators for the use of PPEs, according to the information contained in this Safety Data Sheet.
- Other information : Do not use the product for any purposes that have not been advised by the manufacturer.

Full text of H- and EUH-statements:

Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Repr. 1B	Reproductive toxicity, Category 1B
STOT RE 2	Specific target organ toxicity — Repeated exposure, Category 2
H302	Harmful if swallowed.
H319	Causes serious eye irritation.
H360FD	May damage fertility. May damage the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.

Eni Antifreeze Extra

Safety Data Sheet

According to Regulation (EU) No. 830/2015

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Acute Tox. 4 (Oral)	H302	Calculation method
STOT RE 2	H373	Calculation method

SDS EU (REACH Annex II)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.