



Section 1. Identification of the substance/mixture and of the company/undertaking.

1.1 Product identifier:	Eni Antifreeze Extra D
1.2 Relevant identified uses of the substance or mixture and uses advised against:	
Identified uses:	Antifreeze/Coolant
1.3 Details of the supplier of the safety data sheet:	Eni Schmiertechnik GmbH Paradiesstr. 14, 97080 Würzburg TEL. (+ 49) 931 - 900 98-0 FAX (+ 49) 931-98442
Support:	Technical department, Tel. (+49) 931 900 98-145 technik.wuerzburg@agip.de www.enischmiertechnik-datenblaetter.de

Section 2. Hazards identification.

2.1 Classification of the substance or mixture:

The mixture has been assessed and/ or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Regulation (EC) No 1272/2008 as amended.

Health hazards:

Acute toxicity, oral	Category 4	H302 – Harmful if swallowed
Specific target organ toxicity – Repeated exposure	Category 2 (kidney)	H373 – May cause damage to organs (kidney) through prolonged or repeated exposure.

Hazard summary: Harmful if swallowed. May cause damage to organs through prolonged or repeated exposure. Possible reproductive hazard. Occupational exposure to the substance or mixture may cause adverse health effects.

2.2 Label elements:

Label according to Regulation (EC) No. 1272/2008 as amended.

Contains: Ethylene glycol



Signal word: Warning

Hazard statements:

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

Precautionary statements:

Prevention:

P102 Keep out reach of children.
P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.

Response:

P101 If medical advice is needed, have product container or label at hand.
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

Storage

Not assigned.

Disposal:

P501 Dispose of contents/ container in accordance with local/ regional/ national/ international regulations.

Supplemental label information:

None.

2.3 Other hazards:

Not a PBT or vPvB substance or mixture.



Section 3. Composition/information on ingredients.

3.2 Mixtures:

General information:

Chemical name	%	CAS-No./ EC No.	REACH Registration No.	INDEX No.	Notes
Ethylene glycol	80-98	107-21-1 203-473-3	01-2119456816-28-XXXX	-	#
Classification:	Acute Tox. 4; H302, STOT RE 2; H373				
Sodium benzoate	3 - 5	532-32-1 208-534-8	01-2119460683-35-XXXX	-	
Classification:	Eye Irrit. 2; H319				
Sodium tetraborate pentahydrate	0.1-<3	12179-04-3 215-540-4	01-2119490790-32-XXXX	-	
Classification:	Eye Irrit. 2; H319, Repr. 1B; H360FD				

List of abbreviations and symbols that may be used above:

#: This substance has been assigned Union workplace exposure limit(s).

Composition comments: The full text for all H- statements is displayed in section 16. All concentrations are in percent by weight.
This product contains a bittering agent.
SCL: Specific concentration limit.
Sodium tetraborate pentahydrate (>=6,5%)

Section 4. First aid measures.

General information: If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

4.1 Description of the first aid measures:

Inhalation: Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact: Wash off with soap and water. Get medical attention if irritation develops and persists.
Eye contact: Rinse with water. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
Ingestion: Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical advice/ attention if you feel unwell.

4.2 Most important symptoms and effects, both acute and delayed: Convulsions. Dizziness. Nausea, vomiting. Abdominal pain. Oedema. Prolonged exposure may cause chronic effects.

4.3 Indication of any immediate medical attention and special treatment needed. Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

Section 5. Fire fighting measures.

General fire hazards: No unusual fire or explosion hazards noted.

5.1 Extinguishing media:

Suitable extinguishing media: Alcohol resistant foam. Powder. Carbon dioxide (CO₂)

Unsuitable extinguishing media: Do not use water jet as an extinguisher, as this will spread the fire.

5.2 Special hazards arising from the substance or mixture: Thermal decomposition may produce smoke, oxides of carbon and lower molecular weight organic compounds whose composition have not been characterised.

5.3 Advice for fire fighters:

Special protective equipment for Firefighters: Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Special firefighting procedures: Move container from fire area if you can do so without risk.



Specific methods: Use standard firefighting procedures and consider the hazards of other involved materials.

Section 6. Accidental release measures.

- 6.1 Personal precautions, protective equipment and emergency precautions:
- For non-emergency personnel: Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapour. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained.
- For emergency responders: Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the SDS.
- 6.2 Environmental precautions: Avoid discharge into drains, water courses or onto the ground.
- 6.3 Methods and material for containment and cleaning up: Use water spray to reduce vapours or divert vapour cloud drift.
 Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.
 Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.
 Never return spills to original containers for re-use.
- 6.4 Reference to other sections: For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS.

Section 7. Handling and storage.

- 7.1 Precautions for safe handling: Do not breathe mist or vapour. Do not taste or swallow. Avoid prolonged exposure. When using, do not eat, drink or smoke. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.
- 7.2 Conditions for safe storage, including any incompatibilities: Store locked up. Store in original tightly closed container. Store away from incompatible materials (see section 10 of the SDS).
- 7.3 Specific end use(s): Antifreeze/Coolant.

Section 8. Exposure controls/Personal protection.

8.1 Control parameters:

Occupational exposure limits:

UK. EH40 Workplace Exposure Limits (WELs)

Components	Type	Value	Form
Ethylene glycol (CAS 107-21-1)	STEL	104 mg/m ³	Vapor.
		40 ppm	Vapor.
	TWA	52 mg/m ³	Vapor.
		10 mg/m ³	Particulate.
		20 ppm	Vapor.
Sodium tetraborate pentahydrate (CAS 12179-04-3)	TWA	1 mg/m ³	

EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2006/39/EC, 2006/15/EC, 2009/161/EU

Components	Type	Value
Ethylene glycol (CAS 107-21-1)	STEL	104 mg/m ³

EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU

- Biological limit values: No biological exposure limits noted for the ingredient(s).
- Recommended monitoring Procedures: Follow standard monitoring procedures.



Derived no effect levels (DNELs)

General Population:

Components	Value	Assessment factor
Ethylene glycol (CAS 107-21-1)		
Long-term, Local, Inhalation	7 mg/m ³	
Long-term, Systemic, Dermal	53 mg/kg	
Sodium benzoate (CAS 532-32-1)		
Long-term, Local, Inhalation	0,06 mg/m ³	
Long-term, Systemic, Dermal	31,25 mg/kg	
Long-term, Systemic, Inhalation	1,5 mg/m ³	
Long-term, Systemic, Oral	16,6 mg/kg	
Sodium tetraborate pentahydrate (CAS 12179-04-3)		
Long-term, Systemic, Dermal	159,5 mg/kg	
Long-term, Systemic, Inhalation	3,4 mg/m ³	
Long-term, Systemic, Oral	0,79 mg/kg	
Short-term, Systemic, Oral	0,79 mg/kg	

Workers

Components	Value	Assessment factor
Ethylene glycol (CAS 107-21-1)		
Long-term, Local, Inhalation	35 mg/m ³	
Long-term, Systemic, Dermal	106 mg/kg	
Sodium benzoate (CAS 532-32-1)		
Long-term, Local, Inhalation	0,1 mg/m ³	
Long-term, Systemic, Dermal	62,5 mg/kg	
Long-term, Systemic, Inhalation	3 mg/m ³	
Sodium tetraborate pentahydrate (CAS 12179-04-3)		
Long-term, Systemic, Dermal	316,4 mg/kg	
Long-term, Systemic, Inhalation	6,7 mg/m ³	

Predicted no effect concentrations (PNECs)

Components	Value	Assessment factor	Notes
Ethylene glycol (CAS 107-21-1)			
Freshwater	10 mg/l	10	
Intermittent releases	10 mg/l	10	
Marine water	1 mg/l	100	
Sediment (freshwater)	37 mg/kg		
Sediment (marine water)	3,7 mg/kg		
Soil	1,53 mg/kg		
STP	199,5 mg/l	10	
Sodium benzoate (CAS 532-32-1)			
Freshwater	0,13 mg/l	50	
Intermittent releases	305 µl	100	
Marine water	0,013 mg/l	500	
Secondary Poisoning	300 mg/kg	30	
Sediment (freshwater)	1,76 mg/kg		
Sediment (marine water)	0,176 mg/kg		
Soil	0,276 mg/kg		
STP	10 mg/l	10	
Sodium tetraborate pentahydrate (CAS 12179-04-3)			
Freshwater	2,9 mg/l	2	
Intermittent releases	13,7 µl	2	
Marine water	2,9 mg/l	2	
Soil	5,7 mg/kg	2	
STP	10 mg/l	1	

Exposure guidelines:

UK EH 40 WEL: Skin designation

Ethylene glycol (CAS 107-21-1) Can be absorbed through the skin.



8.2 Exposure controls:

Appropriate Engineering controls:	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.
Individual protection measures, such as personal protective equipment.	
General information:	Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.
Eye/face protection:	chemical respirator with organic vapour cartridge and full face piece.
Skin Protection	Wear appropriate chemical resistant gloves. Wear suitable gloves tested to EN374.
-Hand protection:	Full contact: Use gloves classified protection index 6 with breakthrough time of 480 minutes. Minimum glove thickness 0,38 mm. neoprene, butyl rubber, nitrile or Viton gloves are recommended. Suitable gloves can be recommended by the glove supplier.
Other:	Wash hands thoroughly after handling. Use of an impervious apron is recommended.
Respiratory protection:	Chemical respirator with organic vapour cartridge and full face piece.
Thermal hazards:	Wear appropriate thermal protective clothing, when necessary.
Hygiene measures:	Observe any medical surveillance requirements. Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and / or smoking. Routinely wash work clothing and protective equipment to remove contaminants.
Environmental exposure controls:	Environmental manager must be informed of all major releases.

Section 9. Physical and chemical properties.

9.1 Information on basic physical and chemical properties:

Appearance:	
Colour:	Blue green
Physical state:	Liquid
Form:	Clear liquid.
Odour:	Mild.
Odour threshold:	Not determined.
pH:	7,2 (20°C) (Typical)
Melting point:	Not determined/ -18°C (-0,4°F)
Initial boiling point:	180°C (356°F) (Estimated)
Flashpoint:	122°C (251,6°F) Pensky-Martens closed cup (Approximate)
Evaporation rate:	Not determined.
Flammability (solid, gas):	No applicable.
Flammability (explosive) limits (% by volume in air):	
Lower/upper:	Not determined.
Vapour pressure:	Not determined.
Vapour density (air = 1):	Not determined.
Relative Density at 15,6°C:	Not determined.
Solubility:	Miscible.
Partition coefficient (n-octanol/water):	Not determined.
Auto-ignition temperature:	Not determined.
Decomposition temperature:	Not determined.
Viscosity:	Not determined.
Explosive properties:	Not explosive.
Oxidising properties:	Not oxidising.
9.2 Other information:	
Density:	1,125 kg/l (20°C) (Typical)



Section 10. Stability and reactivity.

10.1 Reactivity:	The product is stable and non-reactive under normal conditions of use, storage and transport.
10.2 Chemical stability:	Material is stable under normal conditions.
10.3 Possibility of hazardous reactions:	No dangerous reaction known under conditions of normal use.
10.4 Conditions to avoid:	Contact with incompatible materials.
10.5 Incompatible materials to avoid:	Strong acids. Strong oxidising agents. Nitrates. Peroxides. Chlorates.
10.6 Hazardous decomposition products:	At elevated temperatures: Ketones. Aldehydes.

Section 11. Toxicological information.

General informations:	Occupational exposure to the substance or mixture may cause adverse effects.
Information on likely routes of exposure:	
Inhalation:	In high concentrations, mists/ vapors may irritate throat and respiratory system and cause coughing.
Skin contact:	Prolonged or repeated contact may dry skin and cause irritation.
Eye contact:	Direct contact with eyes may cause temporary irritation.
Ingestion:	Harmful if swallowed Ingestion of ethylene glycol may result in nausea, vomiting, abdominal cramps, blindness, liver damage, irritation, reproductive effects, nerve damage, convulsions, oedema of the lung, cardiopulmonary effects (metabolic acidosis), pneumonia and kidney failure which could result in death. The single lethal dose for humans is about 100 ml. Inhalation of high levels of vapour or mists for prolonged periods of time may also result in toxic effects.
Symptoms:	Convulsions. Dizziness. Nausea, vomiting. Abdominal pain. Oedema.

11.1 Information on toxicological effects:

Acute toxicity: Harmful if swallowed.

Product	Species	Test results
Antifreeze Extra D		
Acute		
Oral		1716 mg/kg, ATE
Components	Species	Test results
Ethylene glycol (CAS 107-21-1)		
Acute		
<i>Dermal</i>		
LD50	Mouse	>3500 mg/kg
<i>Inhalation</i>		
LC50	Rat	>2,5 mg/l, 6 hours
<i>Oral</i>		
LD50	Cat	1600 mg/kg
Sodium benzoate (CAS 532-32-1)		
Acute		
<i>Oral</i>		
LD50	Rat	3450 mg/kg

Serious eye damage/irritation:	Based on available data, the classification criteria are not met.
Skin corrosion/irritation:	Based on available data, the classification criteria are not met.
Respiratory sensitisation:	Due to partial or complete lack of data the classification is not possible.
Skin sensitisation:	Due to partial or complete lack of data the classification is not possible.
Germ cell mutagenicity:	Based on available data, the classification criteria are not met.
Carcinogenicity:	Due to partial or complete lack of data the classification is not possible.
Reproductive Toxicity:	Based on available data, the classification criteria are not met.



Specific target organ toxicity - single exposure:	Based on available data, the classification criteria are not met.
Specific target organ toxicity - repeated exposure:	May cause damage to organs (kidney) through prolonged or repeated exposure.
Aspiration hazard:	Due to partial or complete lack of data the classification is not possible.
Mixture versus substance information:	No information available.
Other information:	No data available.

Section 12. Ecological information.

12.1 Toxicity:	Based on available data, the classification criteria are not met for hazardous to the aquatic environment.		
Components	Species	Test results	
Ethylene glycol (CAS 107-21-1)			
Aquatic			
Crustacean	EC50 Daphnia magna	>100 mg/l, 48 Hours	
Fish	LC50 Fathead minnow (Pimephales promelas)	72860 mg/l, 96 Hours	
12.2 Persistence and degradability:	Expected to be readily biodegradable.		
12.3 Bioaccumulative potential:			
Partition coefficient n-octanol/water (log Kow)			
Ethylene glycol (CAS 107-21-1):	-1,36		
Bioconcentration factor (BCF):	Not available.		
12.4 Mobility in soil:	No data available.		
12.5 Results of PBT and vPvB assessment:	Not a PBT or vPvB substance or mixture.		
12.6 Other adverse effects:	No data available.		

Section 13. Disposal considerations.

13.1 Waste treatment methods:	
Residual waste:	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging:	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.
EU waste code:	EWC. 16 01 14
Disposal methods/ information:	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/ container in accordance with local/ regional/ national/ international regulation.
Special precautions:	Dispose in accordance with all applicable regulations.

Section 14. Transport information.

ADR	14.1. – 14.6.: Not regulated as dangerous goods.
RID	14.1. – 14.6.: Not regulated as dangerous goods.
AND	14.1. – 14.6.: Not regulated as dangerous goods.
IATA	14.1. – 14.6.: Not regulated as dangerous goods.
IMDG	14.1. – 14.6.: Not regulated as dangerous goods.
14.7 Transport in bulk according to Annex II of MARPOL and the IBC-Code:	Not established.



Section 15. Regulatory information.

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

EU regulations:

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended

Not listed.

Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended

Not listed

Regulation (EC) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended

Not listed.

Regulation (EC) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended

Not listed.

Regulation (EC) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended

Not listed.

Regulation (EC) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended

Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended

Not listed.

Regulation (EC) No. 1907/2006, REACH Article 59 (10) Candidate List as currently published by ECHA

Sodium tetraborate pentahydrate (CAS 12179-04-3)

Authorisations:

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorisation, as amended

Not listed.

Restrictions on use:

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended

Sodium tetraborate pentahydrate (CAS 12179-04-3)

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.

Not listed

Other EU regulations:

Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended

Not listed.

Other regulations:

The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended. This Safety Data Sheet complies with the requirement of Regulation (EC) No. 1907/2006, as amended.

All components of this product are compliant with the registration requirements of Regulation (EC) 1907/2006 on the Registration, Evaluation, Authorization and Restriction of Chemicals, as amended.

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), EINECS (European Union), ENCS (Japan), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States), TCSI (Taiwan), NZIoC (New Zealand).

National regulations:

Follow national regulation for work with chemical agents in accordance with Directive 98/24/EC, as amended. Young people under 18 years old are not allowed to work with this product according to EU Directive 94/33/EC on the protection of young people at work, as amended.

15.2 Chemical safety assessment:

No chemical safety assessment has been carried out.

Section 16. Other information.

This information relates only to the specific product and may not be valid if the product is used in combination with any other material or in any process. The information in this sheet is according to our best knowledge at the date of printing.

Changes: 1 – 16

Full text of CLP H-statements:

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 by ingestion.