SAFETY DATA SHEET
ANTIFREEZE 48 BLUE GREEN SOLUTION

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

1.1. Product identifier

Product name ANTIFREEZE 48 BLUE GREEN SOLUTION

Product number 15098

Synonyms; trade names ANTIFREEZE 48 50% SOL, ANTIFREEZE 48 GREEN 50% SOL, ANTIFREEZE 48 BLUE GREEN 50% SOL, G48 40%

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

Identified uses Antifreeze liquid. Coolant

1.3. Details of the supplier of the safety data sheet

Supplier

Univar
Aquarius House
6 Mid Point Business Park
Bradford
BD3 7AY
+44 1274 267300
+44 1274 267306
sds@univar.com

1.4. Emergency telephone number

Emergency telephone SGS - +32 (0)3 575 55 55 (24h)

Sds No. 15098

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards Not Classified

Health hazards Acute Tox. 4 - H302 STOT RE 2 - H373

Environmental hazards Not Classified

2.2. Label elements

Pictogram

Signal word Warning

Hazard statements

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

ANTIFREEZE 48 BLUE GREEN SOLUTION

Precautionary statements P260 Do not breathe vapour/ spray.
P264 Wash contaminated skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P314 Get medical advice/ attention if you feel unwell.
P330 Rinse mouth.
P501 Dispose of contents/ container in accordance with national regulations.

Contains ETHANEDIOL

2.3. Other hazards

This product does not contain any substances classified as PBT or vPvB.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

ETHANEDIOL **35-100%**

CAS number: 107-21-1 EC number: 203-473-3 REACH registration number: 01-2119456816-28-XXXX

Classification
Acute Tox. 4 - H302
STOT RE 2 - H373

2-ETHYLHEXANOIC ACID, SODIUM SALT **1-5%**

CAS number: 19766-89-3 EC number: 243-283-8 REACH registration number: 01-2119488942-23-XXXX

Classification
Repr. 2 - H361d

DISODIUM TETRABORATE PENTAHYDRATE **<1%**

CAS number: 12179-04-3 EC number: 215-540-4 REACH registration number: 01-2119490790-32-XXXX

Classification
Eye Irrit. 2 - H319
Repr. 1B - H360FD

The full text for all hazard statements is displayed in Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation Move affected person to fresh air at once. Get medical attention if any discomfort continues.

Ingestion Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Rinse mouth thoroughly with water. Give plenty of water to drink. Get medical attention immediately.

Skin contact Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention if any discomfort continues.

ANTIFREEZE 48 BLUE GREEN SOLUTION

Eye contact Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

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

Inhalation Vapours in high concentrations are anaesthetic. Symptoms following overexposure may include the following: Headache. Fatigue. Dizziness. Central nervous system depression.

Ingestion Ingestion of large amounts may cause unconsciousness. Harmful if swallowed. Causes damage to organs (Kidneys) through prolonged or repeated exposure if swallowed.

Skin contact Prolonged skin contact may cause redness and irritation.

Eye contact May cause temporary eye irritation.

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

Notes for the doctor If several ounces (60 - 100 ml) of ethylene glycol have been ingested, early administration of ethanol may counter the toxic effects (metabolic acidosis, renal damage). Consider hemodialysis or peritoneal dialysis & thiamine 100 mg plus pyridoxine 50 mg intravenously every 6 hours. If ethanol is used, a therapeutically effective blood concentration in the range of 100 - 150 mg/dl may be achieved by a rapid loading dose followed by a continuous intravenous infusion. Consult standard literature for details of treatment. 4-Methyl pyrazole (Antizol®) is an effective blocker of alcohol dehydrogenase and should be used in the treatment of ethylene glycol (EG), di- or triethylene glycol (DEG, TEG), ethylene glycol butyl ether (EGBE), or methanol intoxication if available. Fomepizole protocol: loading dose 15 mg/kg intravenously, follow by bolus dose of 10 mg/kg every 12 hours; after 48 hours, increase bolus dose to 15 mg/kg every 12 hours. Continue fomepizole until serum methanol, EG, DEG, TEG or EGBE are undetectable. The signs and symptoms of poisoning include anion gap metabolic acidosis, CNS depression, renal tubular injury, and possible late stage cranial nerve involvement. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. In severe poisoning, respiratory support with mechanical ventilation and positive end expiratory pressure may be required. Maintain adequate ventilation and oxygenation of the patient. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. If burn is present, treat as any thermal burn, after decontamination. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media The product is not flammable. Use fire-extinguishing media suitable for the surrounding fire.

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

Hazardous combustion products Oxides of carbon. Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.

5.3. Advice for firefighters

Protective actions during firefighting Contain and collect extinguishing water.

Special protective equipment for firefighters Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

ANTIFREEZE 48 BLUE GREEN SOLUTION

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Wear protective clothing as described in Section 8 of this safety data sheet. Avoid contact with skin and eyes. Provide adequate ventilation. Avoid inhalation of vapours.

6.2. Environmental precautions

Environmental precautions Spillages or uncontrolled discharges into watercourses must be reported immediately to the Environmental Agency or other appropriate regulatory body.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Stop leak if possible without risk. Absorb in vermiculite, dry sand or earth and place into containers. Flush contaminated area with plenty of water. Collect and place in suitable waste disposal containers and seal securely. For waste disposal, see Section 13.

6.4. Reference to other sections

Reference to other sections Wear protective clothing as described in Section 8 of this safety data sheet.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Avoid spilling. Provide adequate ventilation. Avoid contact with skin and eyes.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Store in tightly-closed, original container in a dry, cool and well-ventilated place.

Storage class Chemical storage.

7.3. Specific end use(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure Controls/personal protection

8.1. Control parameters

Occupational exposure limits

ETHANEDIOL

Long-term exposure limit (8-hour TWA): WEL 20 ppm 52 mg/m³ vapour
Short-term exposure limit (15-minute): WEL 40 ppm 104 mg/m³ vapour
Sk
Long-term exposure limit (8-hour TWA): WEL 10 mg/m³ particulate
Sk

DISODIUM TETRABORATE PENTAHYDRATE

Long-term exposure limit (8-hour TWA): WEL 1 mg/m³

WEL = Workplace Exposure Limit
Sk = Can be absorbed through the skin.

Ingredient comments WEL = Workplace Exposure Limits

ETHANEDIOL (CAS: 107-21-1)

Ingredient comments WEL = Workplace Exposure Limits

DNEL Industry - Inhalation; Short term : 35 mg/m³
Industry - Dermal; Long term : 106 mg/kg/day
Consumer - Dermal; Long term : 53 mg/kg/day
Consumer - Inhalation; Long term : 7 mg/m³

ANTIFREEZE 48 BLUE GREEN SOLUTION

PNEC

- Fresh water; 10 mg/l
- Marine water; 1 mg/l
- Soil; 1.53 mg/kg
- STP; 199.5 mg/l
- Sediment (Freshwater); 37 mg/kg
- Sediment (Marinewater); 3.7 mg/kg
- Intermittent release; 10 mg/l

DISODIUM TETRABORATE PENTAHYDRATE (CAS: 12179-04-3)

DNEL

Consumer - Oral; Short term systemic effects: 1.15 mg/kg/day
Consumer - Oral; Long term systemic effects: 1.15 mg/kg/day
Industry - Dermal; Long term systemic effects: 458.2 mg/kg/day
Consumer - Dermal; Long term systemic effects: 231.8 mg/kg/day
Industry - Inhalation; Short term local effects: 17.04 mg/m³
Industry - Inhalation; Long term systemic effects: 9.8 mg/m³
Consumer - Inhalation; Long term systemic effects: 4.9 mg/m³
Consumer - Inhalation; Long term local effects: 17.04 mg/m³
Consumer - Inhalation; Short term local effects: 17.04 mg/m³
Workers - Inhalation; Long term local effects: 17.04 mg/m³

PNEC

- STP; 10 mg/l
- water; 13.7 mg/l
- Fresh water; 2.02 mg/l
- Marine water; 2.02 mg/l

8.2. Exposure controls

Protective equipment

Appropriate engineering controls

Provide adequate ventilation. Avoid inhalation of vapours. Observe any occupational exposure limits for the product or ingredients.

Eye/face protection

The following protection should be worn: Chemical splash goggles. Personal protective equipment for eye and face protection should comply with European Standard EN166.

Hand protection

The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. The selected gloves should have a breakthrough time of at least 8 hours. Butyl rubber. Polyvinyl chloride (PVC). To protect hands from chemicals, gloves should comply with European Standard EN374.

Other skin and body protection

Wear suitable protective clothing as protection against splashing or contamination.

Hygiene measures

Provide eyewash station and safety shower. Wash contaminated clothing before reuse. Wash promptly with soap and water if skin becomes contaminated. Eating, smoking and water fountains prohibited in immediate work area.

Respiratory protection

If ventilation is inadequate, suitable respiratory protection must be worn. Wear a respirator fitted with the following cartridge: Combination filter, type A2/P3. EN 136/140/141/145/143/149

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance

Clear liquid.

ANTIFREEZE 48 BLUE GREEN SOLUTION

Colour	Green.
Odour	Mild.
Odour threshold	No information available.
pH	pH (diluted solution): ~ 7.0
Melting point	< -18°C
Initial boiling point and range	No information available.
Flash point	No information available.
Evaporation rate	No information available.
Evaporation factor	No information available.
Flammability (solid, gas)	No information available.
Upper/lower flammability or explosive limits	No information available.
Other flammability	No information available.
Vapour pressure	No information available.
Vapour density	No information available.
Relative density	~ 1.12 @ 20°C
Bulk density	No information available.
Solubility(ies)	Soluble in water.
Partition coefficient	No information available.
Auto-ignition temperature	No information available.
Decomposition Temperature	No information available.
Viscosity	20 - 30 cSt @ 20°C
Explosive properties	No information available.
Explosive under the influence of a flame	No information available.
Oxidising properties	No information available.

9.2. Other information

Other information	Not available.
Refractive index	No information available.
Particle size	No information available.
Molecular weight	No information available.
Volatility	No information available.
Saturation concentration	No information available.
Critical temperature	No information available.
Volatile organic compound	No information available.

SECTION 10: Stability and reactivity

ANTIFREEZE 48 BLUE GREEN SOLUTION

10.1. Reactivity

Reactivity There are no known reactivity hazards associated with this product.

10.2. Chemical stability

Stability Stable at normal ambient temperatures and when used as recommended.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions Will not polymerise.

10.4. Conditions to avoid

Conditions to avoid Avoid excessive heat for prolonged periods of time.

10.5. Incompatible materials

Materials to avoid Strong oxidising agents. Strong acids. Strong alkalis. Strong reducing agents.

10.6. Hazardous decomposition products

Hazardous decomposition products Oxides of the following substances: Carbon. Aldehydes. Ketones.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological effects No data available.

Acute toxicity - oral

ATE oral (mg/kg) 549.45

Skin corrosion/irritation

Animal data No information available.

Serious eye damage/irritation

Serious eye damage/irritation No information available.

Respiratory sensitisation

Respiratory sensitisation No information available.

Skin sensitisation

Skin sensitisation No information available.

Germ cell mutagenicity

Genotoxicity - in vitro No information available.

Carcinogenicity

Carcinogenicity No information available.

Reproductive toxicity

Reproductive toxicity - fertility No information available.

Specific target organ toxicity - single exposure

STOT - single exposure No information available.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure No information available.

Aspiration hazard

Aspiration hazard No information available.

ANTIFREEZE 48 BLUE GREEN SOLUTION

Inhalation	Vapour may irritate respiratory system/lungs. Vapours in high concentrations are anaesthetic. Symptoms following overexposure may include the following: Headache. Fatigue. Dizziness. Central nervous system depression.
Ingestion	Harmful if swallowed. Causes damage to organs (Kidneys) through prolonged or repeated exposure if swallowed.
Skin contact	Prolonged and frequent contact may cause redness and irritation.
Eye contact	May cause temporary eye irritation.
Acute and chronic health hazards	May cause liver and/or renal damage.
Target organs	Liver Kidneys

Toxicological information on ingredients.

ETHANEDIOL

Acute toxicity - oral

ATE oral (mg/kg)	500.0

Acute toxicity - dermal

Acute toxicity dermal (LD_{50} mg/kg)	10,600.0
Species	Rabbit
Notes (dermal LD_{50})	LD_{50} > 10600 mg/kg, Dermal, Rabbit

Acute toxicity - inhalation

Acute toxicity inhalation (LC_{50} vapours mg/l)	2.5
Species	Rat
Notes (inhalation LC_{50})	LD_{50} > 2.5 mg/l, Inhalation, Rat
ATE inhalation (vapours mg/l)	2.5

Skin corrosion/irritation

Animal data	Not irritating.

Serious eye damage/irritation

Serious eye damage/irritation	Not irritating.

Respiratory sensitisation

Respiratory sensitisation	Not sensitising.

Skin sensitisation

Skin sensitisation	Not sensitising.

Germ cell mutagenicity

Genotoxicity - in vivo	This substance has no evidence of mutagenic properties.

Carcinogenicity

ANTIFREEZE 48 BLUE GREEN SOLUTION

Carcinogenicity	There is no evidence that the product can cause cancer.

Reproductive toxicity

Reproductive toxicity - development	Symptoms following overexposure may include the following: Possible risk of adverse reproductive effects.

Specific target organ toxicity - single exposure

STOT - single exposure	No information available.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure	May cause damage to organs (Kidneys) through prolonged or repeated exposure if swallowed.

Aspiration hazard

Aspiration hazard	No information available.

Inhalation	Vapour may irritate respiratory system/lungs.
Ingestion	Harmful if swallowed. Lethal dose to humans 100ml
Skin contact	Prolonged and frequent contact may cause redness and irritation.
Eye contact	May cause temporary eye irritation.
Target organs	Liver Kidneys

SECTION 12: Ecological Information

Ecotoxicity The product components are not classified as environmentally hazardous. However, large or frequent spills may have hazardous effects on the environment.

Ecological information on ingredients.

ETHANEDIOL

Ecotoxicity The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

12.1. Toxicity

Toxicity No information available.

Ecological information on ingredients.

ETHANEDIOL

Acute aquatic toxicity

Acute toxicity - fish	LC50, 96 hours: 72860 mg/l, Pimephales promelas (Fat-head Minnow)
Acute toxicity - aquatic invertebrates	EC_{50}, 48 hours: > 100 mg/l, Daphnia magna
Acute toxicity - aquatic plants	EC_{50}, 96 hours: 6500 - 13000 mg/l,
Acute toxicity - microorganisms	EC_{50}, 30 minutes: 225 mg/l, Activated sludge

12.2. Persistence and degradability

ANTIFREEZE 48 BLUE GREEN SOLUTION

Persistence and degradability The product is expected to be biodegradable.

Ecological information on ingredients.

ETHANEDIOL

Persistence and degradability	The substance is readily biodegradable.
Biodegradation	- Degradation (%) 90%: > 10 days OECD 301A

12.3. Bioaccumulative potential

Bioaccumulative potential No data available on bioaccumulation.

Partition coefficient No information available.

Ecological information on ingredients.

ETHANEDIOL

Bioaccumulative potential	The product is not bioaccumulating.
Partition coefficient	-1.36

12.4. Mobility in soil

Mobility The product is soluble in water.

Ecological information on ingredients.

ETHANEDIOL

Mobility	The product is soluble in water.
Adsorption/desorption coefficient	Water - Koc: 1 @ °C

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment This product does not contain any substances classified as PBT or vPvB.

Ecological information on ingredients.

ETHANEDIOL

Results of PBT and vPvB assessment	This substance is not classified as PBT or vPvB according to current EU criteria.

12.6. Other adverse effects

Other adverse effects None known.

Ecological information on ingredients.

ETHANEDIOL

Cod	1.22
Other adverse effects	None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

ANTIFREEZE 48 BLUE GREEN SOLUTION

General information Do not puncture or incinerate, even when empty. Waste is classified as hazardous waste.

Disposal methods Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

SECTION 14: Transport information

General The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).

14.1. UN number

No information required.

14.2. UN proper shipping name

No information required.

14.3. Transport hazard class(es)

No information required.

14.4. Packing group

No information required.

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant
No.

14.6. Special precautions for user

No information required.

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

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code No information required.

SECTION 15: Regulatory information

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

EU legislation 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) (as amended).
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 (as amended).
Commission Regulation (EU) No 2015/830 of 28 May 2015.

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information

ANTIFREEZE 48 BLUE GREEN SOLUTION

Abbreviations and acronyms used in the safety data sheet

ATE: Acute Toxicity Estimate.
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.
CAS: Chemical Abstracts Service.
DNEL: Derived No Effect Level.
IATA: International Air Transport Association.
IMDG: International Maritime Dangerous Goods.
Kow: Octanol-water partition coefficient.
LC_{50}: Lethal Concentration to 50 % of a test population.
LD_{50}: Lethal Dose to 50% of a test population (Median Lethal Dose).
PBT: Persistent, Bioaccumulative and Toxic substance.
PNEC: Predicted No Effect Concentration.
REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006.
RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.
vPvB: Very Persistent and Very Bioaccumulative.
IARC: International Agency for Research on Cancer.
MARPOL 73/78: International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978.
cATpE: Converted Acute Toxicity Point Estimate.
BCF: Bioconcentration Factor.
BOD: Biochemical Oxygen Demand.
EC_{50}: 50% of maximal Effective Concentration.
LOAEC: Lowest Observed Adverse Effect Concentration.
LOAEL: Lowest Observed Adverse Effect Level.
NOAEC: No Observed Adverse Effect Concentration.
NOAEL: No Observed Adverse Effect Level.
NOEC: No Observed Effect Concentration.
LOEC: Lowest Observed Effect Concentration.
DMEL: Derived Minimal Effect Level.
EL50: Exposure Limit 50
hPa: Hectopascal
LL50: Lethal Loading fifty
OECD: Organisation for Economic Co-operation and Development
POW: Octanol-water partition coefficient
SCBA: self-contained breathing apparatus
STP: Sewage Treatment Plant
VOC: Volatile Organic Compounds

Classification abbreviations and acronyms

Acute Tox. = Acute toxicity
Aquatic Acute = Hazardous to the aquatic environment (acute)
Aquatic Chronic = Hazardous to the aquatic environment (chronic)

Key literature references and sources for data

Supplier's information.

Revision comments

NOTE: Lines within the margin indicate significant changes from the previous revision.

Revision date

30/08/2018

Version number

2.001

Supersedes date

12/05/2017

SDS number

15098

ANTIFREEZE 48 BLUE GREEN SOLUTION

SDS status	Approved.
Hazard statements in full	H302 Harmful if swallowed. H319 Causes serious eye irritation. H360FD May damage fertility. May damage the unborn child. H361d Suspected of damaging the unborn child. H373 May cause damage to organs through prolonged or repeated exposure if swallowed. H373 May cause damage to organs (Kidneys) through prolonged or repeated exposure if swallowed.
Signature	Jitendra Panchal