



Safety data sheet

according to Regulation (EC) No 1907/2006, Article 31 as amended

Printing date 05.11.2024

Version number 1

Revision: 05.11.2024

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

· 1.1 Product identifier

· **Trade name:** Gem Coolant Fluid 50:50 2 Year

· **Registration number** Mixture

· **UFI:** MD70-D0RP-5008-QJ0V

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

· **Product category** PC4 Anti-Freeze and de-icing products

· **Application of the substance / the mixture** Antifreeze

· **Uses advised against**

Processes involving extreme heat use advised against.

Any use carrying a risk of direct contact with eyes/skin where workers are exposed without adequate personal protective equipment (PPE).

Any use involving aerosol formation or vapour release in excess of the assigned Workplace Exposure Limit where workers are exposed without suitable Respiratory Protective Equipment.

Processes where workers who may be pregnant or breastfeeding could potentially come into direct contact with the undiluted product.

Processes involving the use of incompatible substances - refer to section 10.

· 1.3 Details of the supplier of the safety data sheet

· **Supplier:**

Gem Oils Ltd

Regaskin

Cavan

Ireland

Tel: +353 (0) 49 4331077

Fax: +353 (0) 49 4368329

e-mail: productsafety@gemoils.ie

· **Further information obtainable from:** Product safety department.

· 1.4 Emergency telephone number:

National Poisons Information Centre: +353 (1) 809 2166 (8.00 a.m. to 10.00 p.m. 7 days a week)

Healthcare Professionals: +353 (1) 809 2566 (24 hour service)

IN NORTHERN IRELAND:

Members of the public should contact NHS Direct on 111.

* SECTION 2: Hazards identification

· 2.1 Classification of the substance or mixture

· **Classification according to Regulation (EC) No 1272/2008**

STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.

· 2.2 Label elements

· **Labelling according to Regulation (EC) No 1272/2008**

The product is classified and labelled according to the CLP regulation.

· **Hazard pictograms**



GHS08

· **Signal word** Warning

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- **Hazard-determining components of labelling:**
Ethanediol
- **Hazard statements**
H373 May cause damage to organs through prolonged or repeated exposure.
- **Precautionary statements**
P102 Keep out of reach of children.
P260 Do not breathe mist/vapours/spray.
P314 Get medical advice/attention if you feel unwell.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

* SECTION 3: Composition/information on ingredients

- **3.2 Mixtures**
- **Description:** An aqueous solution of ethanediol with multifunctional additives.

· Dangerous components:		
CAS: 107-21-1 EINECS: 203-473-3 Reg.nr.: 01-2119456816-28-XXXX	Ethanediol ⚠ STOT RE 2, H373; ⚠ Acute Tox. 4, H302	25 – 50%
CAS: 12045-78-2 EINECS: 215-575-5 Reg.nr.: 01-2119970730-37-XXXX	potassium tetraborate ⚠ Repr. 2, H361d	0.1 – 1%

- **Additional information:** For the wording of the listed hazard phrases refer to section 16.

* SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **General information:**
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
Immediately remove any clothing soiled by the product.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:**
Immediately rinse with water.
If skin irritation continues, consult a doctor.
- **After eye contact:**
Check for and remove any contact lenses.
Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:**
Rinse out mouth and then drink plenty of water.
Do not induce vomiting; call for medical help immediately.
If vomiting occurs spontaneously, keep head below hips to prevent aspiration.
- **Information for doctor:**
Contains ethanediol.
If ingested, early diagnosis and treatment is essential.
Refer to section 11.

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- **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed**
Obtain medical attention urgently, informing the emergency services that a product containing ethylene glycol/diethylene glycol has been ingested and that specific treatment is needed.
Gastric lavage may be effective when performed within 4 hours of ingestion.

* SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
Use fire extinguishing methods suitable to surrounding conditions.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **5.2 Special hazards arising from the substance or mixture**
Combustible
In case of fire, the following can be released:
Boron compounds
Carbon monoxide (CO)
Toxic metal oxide smoke
Vapours are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur.
- **5.3 Advice for firefighters**
- **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.
Do not inhale explosion gases or combustion gases.
- **Additional information**
Absorb gas/vapours with water spray.
Cool endangered receptacles with water spray.
Collect contaminated fire fighting water separately. It must not enter the sewage system.

* SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Particular danger of slipping on leaked/spilled product.
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
- **6.2 Environmental precautions:**
Do not allow to enter sewers/ surface or ground water.
Do not allow to penetrate the ground/soil.
- **6.3 Methods and material for containment and cleaning up:**
Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations.
- **6.4 Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

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* SECTION 7: Handling and storage

· 7.1 Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

Avoid direct contact (skin/eye contact, ingestion and/or inhalation of fume/mist/dust) with the product in the undiluted form.

· 7.2 Conditions for safe storage, including any incompatibilities

· Storage:

· **Requirements to be met by storerooms and receptacles:** Prevent any seepage into the ground.

· **Information about storage in one common storage facility:**

Store away from foodstuffs.

Store away from oxidising agents.

· **Further information about storage conditions:**

Store in cool, dry conditions in well sealed receptacles.

Protect from heat and direct sunlight.

Store in a bunded area.

· **Storage class:** 10

· **7.3 Specific end use(s)** No further relevant information available.

* SECTION 8: Exposure controls/personal protection

· 8.1 Control parameters

· **Ingredients with limit values that require monitoring at the workplace:**

CAS: 107-21-1 Ethanediol

OEL	Short-term value: 104 mg/m ³ , 40 ppm
	Long-term value: 52 mg/m ³ , 20 ppm
	Skin, IOELV

· DNELs

CAS: 107-21-1 Ethanediol

Dermal	Long-term systemic effects	53 mg/kg bw/day (general population) 106 mg/kg bw/day (worker)
Inhalative	Long-term local effects	7 mg/m ³ (general population) 35 mg/m ³ (worker)

CAS: 12045-78-2 potassium tetraborate

Oral	Long-term systemic effects	920 µg/kg bw/day (general population)
Dermal	Long-term systemic effects	185.6 mg/kg bw/day (general population) 367.7 mg/kg bw/day (worker)
Inhalative	Long-term systemic effects	3.9 mg/m ³ (general population) 7.8 mg/m ³ (worker)

· PNECs

CAS: 12045-78-2 potassium tetraborate

Freshwater	2.9 mg/L
Freshwater - Intermittent releases	13.7 mg/L
Marine water	2.9 mg/L

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Sewage Treatment Plant	10 mg/L
Soil	5.7 mg/kg

· **Additional information:** The lists valid during the making were used as basis.

· **8.2 Exposure controls**

· **Appropriate engineering controls** No further data; see section 7.

· **Individual protection measures, such as personal protective equipment**

· **General protective and hygienic measures:**

Avoid contact with the eyes and skin.

Immediately remove all soiled and contaminated clothing

Do not eat, drink, smoke or sniff while working.

Keep away from foodstuffs, beverages and feed.

Wash hands before breaks and at the end of work.

Storing food in the working area is prohibited.

Do not inhale gases / fumes / aerosols.

Take note of assigned Workplace Exposure Limits.

Pregnant women should strictly avoid inhalation or skin contact.

A safe system of work must be formulated and followed to ensure that workers who may be pregnant or breastfeeding do not come into direct contact with the product.

· **Respiratory protection:**

Use suitable respiratory protective device in case of insufficient ventilation.

Filter A for organic vapours

Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.

· **Hand protection**



Protective gloves.

Use gloves tested and approved under appropriate government standards such as NIOSH (US) or EN374 (EU).

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

Butyl rubber, BR

Chloroprene rubber, CR

Natural rubber, NR

Neoprene gloves

Nitrile rubber, NBR

PVC or PE gloves

Fluorocarbon rubber (Viton)

PVA gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**

Break-through time: > 480 minutes

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

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· Eye/face protection

Safety glasses with side-shields conforming to EN166.

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

· Body protection:

Impervious protective clothing

Body protection must be chosen depending on product properties, activity and possible exposure.

· Environmental exposure controls Do not allow to enter drains, sewers or watercourses.**· Risk management measures** The operators shall be instructed adequately.*** SECTION 9: Physical and chemical properties****· 9.1 Information on basic physical and chemical properties****· General Information**

· Physical state	Fluid
· Colour:	According to product specification
· Odour:	Mild
· Odour threshold:	Not determined.
· Melting point/freezing point:	Undetermined.
· Boiling point or initial boiling point and boiling range	100 °C
· Flammability	Not applicable.
· Lower and upper explosion limit	
· Lower:	3.2 Vol %
· Upper:	15.3 Vol %
· Flash point:	> 100 °C
· Auto-ignition temperature:	> 250 °C
· Decomposition temperature:	Not determined.
· pH at 20 °C	6.5 – 7.5
· Viscosity:	
· Kinematic viscosity	Not determined.
· Dynamic:	Not determined.
· Solubility	
· water:	Fully miscible.
· Partition coefficient n-octanol/water (log value)	-1.36 log POW
· Vapour pressure at 20 °C:	0.1 hPa
· Density and/or relative density	
· Density at 20 °C:	1.1 g/cm ³
· Relative density	Not determined.
· Vapour density	Not determined.

· 9.2 Other information

NOTE: The physical data presented above are typical values and should not be construed as a specification.

· Appearance:**· Form:** Fluid

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· Important information on protection of health and environment, and on safety.

- | | |
|-------------------------|---|
| · Ignition temperature: | Product is not self-igniting. |
| · Explosive properties: | Product is not explosive. However, formation of explosive air/vapour mixtures are possible. |
| · Solvent content: | |
| · VOC (EC) | 0.00 % |
| · Change in condition | |
| · Evaporation rate | Not determined. |

· Information with regard to physical hazard classes

- | | |
|---|------|
| · Explosives | Void |
| · Flammable gases | Void |
| · Aerosols | Void |
| · Oxidising gases | Void |
| · Gases under pressure | Void |
| · Flammable liquids | Void |
| · Flammable solids | Void |
| · Self-reactive substances and mixtures | Void |
| · Pyrophoric liquids | Void |
| · Pyrophoric solids | Void |
| · Self-heating substances and mixtures | Void |
| · Substances and mixtures, which emit flammable gases in contact with water | Void |
| · Oxidising liquids | Void |
| · Oxidising solids | Void |
| · Organic peroxides | Void |
| · Corrosive to metals | Void |
| · Desensitised explosives | Void |

*** SECTION 10: Stability and reactivity**

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
At elevated temperatures, explosive vapour/air mixtures may be formed.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** Heat and static discharge.
- **10.5 Incompatible materials:**
Strong acids.
Strong oxidising agents.
Strong bases.
- **10.6 Hazardous decomposition products:**
Boron compounds
Carbon monoxide and carbon dioxide
Toxic metal oxide smoke

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* SECTION 11: Toxicological information

· 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

- **Acute toxicity** Based on available data, the classification criteria are not met.

· LD/LC50 values relevant for classification:

CAS: 107-21-1 Ethanediol

Oral	LD50	7,712 mg/kg (rat)
Dermal	LD50	3,500 mg/kg (mouse)

· Primary irritant effect:

- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation** Based on available data, the classification criteria are not met.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure**

May cause damage to organs through prolonged or repeated exposure.

- **Aspiration hazard** Based on available data, the classification criteria are not met.

· Additional toxicological information:

ROUTES OF EXPOSURE: Can be absorbed into the body by ingestion, by inhalation (mist and vapour) and through the skin.

If ingested, early diagnosis and treatment is essential.

The substance may cause effects on the kidneys and central nervous system, resulting in renal failure and brain injury.

Exposure could cause lowering of consciousness.

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

· 11.2 Information on other hazards

· Endocrine disrupting properties

None of the ingredients are listed.

* SECTION 12: Ecological information

· 12.1 Toxicity

· Aquatic toxicity:

CAS: 107-21-1 Ethanediol

EC50 (96 h) > 100 mg/l (Bacteria)

- **12.2 Persistence and degradability** biodegradable
- **12.3 Bioaccumulative potential** Product is not expected to bioaccumulate.
- **12.4 Mobility in soil** No further relevant information available.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Endocrine disrupting properties** The product does not contain substances with endocrine disrupting properties.
- **12.7 Other adverse effects**
- **Additional ecological information:**
- **General notes:**

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water

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Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

* SECTION 13: Disposal considerations

· 13.1 Waste treatment methods

· Recommendation

Recommended Hierarchy of Controls:

- Minimise waste;
- Reuse if not contaminated;
- Recycle, if possible; or
- Safe disposal (if all else fails).

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Contact waste processors for recycling information.

Used, degraded or contaminated product may be classified as hazardous waste. Anyone classifying hazardous waste and determining its fate must be qualified in accordance with state and international legislation.

· European waste catalogue

16 00 00	WASTES NOT OTHERWISE SPECIFIED IN THE LIST
16 01 00	end-of-life vehicles from different means of transport (including off-road machinery) and wastes from dismantling of end-of-life vehicles and vehicle maintenance (except 13, 14, 16 06 and 16 08)
16 01 14*	antifreeze fluids containing hazardous substances

· Uncleaned packaging:

· Recommendation:

Empty contaminated packagings thoroughly. They may be recycled after thorough and proper cleaning.

Disposal must be made according to official regulations.

Containers, even those that are "empty," may contain residues that can develop flammable and/or hazardous vapours upon heating. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers.

· Recommended cleansing agents: Water, if necessary together with cleansing agents.

SECTION 14: Transport information

· 14.1 UN number or ID number

· ADR/RID/ADN, ADN, IMDG, IATA Not applicable

· 14.2 UN proper shipping name

· ADR/RID/ADN, ADN, IMDG, IATA Not applicable

· 14.3 Transport hazard class(es)

· ADR/RID/ADN, ADN, IMDG, IATA

· Class Not applicable

· 14.4 Packing group

· ADR/RID/ADN, IMDG, IATA Not applicable

· 14.5 Environmental hazards:

· Marine pollutant: No

· 14.6 Special precautions for user

Not applicable.

· 14.7 Maritime transport in bulk according to IMO instruments

Not applicable.

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· Transport/Additional information:	Not dangerous according to the above specifications.
· UN "Model Regulation":	Not applicable

* SECTION 15: Regulatory information

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

- Directive 2012/18/EU
- Named dangerous substances - ANNEX I None of the ingredients are listed.
- REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3

· DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II

None of the ingredients are listed.

· REGULATION (EU) 2019/1148

· Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))

None of the ingredients are listed.

· Annex II - REPORTABLE EXPLOSIVES PRECURSORS

None of the ingredients are listed.

· Regulation (EC) No 273/2004 on drug precursors

None of the ingredients are listed.

· Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors

None of the ingredients are listed.

· 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

* SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

This Safety Data Sheet is in compliance with Regulation (EC) No 1907/2006, Article 31 as amended by Regulation (EU) 2020/878.

· Relevant phrases

- H302 Harmful if swallowed.
- H361d Suspected of damaging the unborn child.
- H373 May cause damage to organs through prolonged or repeated exposure.

· Training hints

This product should only be handled by workers who have received sufficient training in the safe handling and use of chemical products.

· Department issuing SDS: Product safety department.

· Date of previous version: 01.07.2013

· Abbreviations and acronyms:

- ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
- IMDG: International Maritime Code for Dangerous Goods
- IATA: International Air Transport Association
- GHS: Globally Harmonised System of Classification and Labelling of Chemicals

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EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
VOC: Volatile Organic Compounds (USA, EU)
DNEL: Derived No-Effect Level (REACH)
PNEC: Predicted No-Effect Concentration (REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
ATE: Acute toxicity estimate values
Acute Tox. 4: Acute toxicity – Category 4
Repr. 2: Reproductive toxicity – Category 2
STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2

· *** Data compared to the previous version altered.**

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