SAFETY DATA SHEET

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

1.1. Product identifier

Trade name or designation of the mixture	Perkins® ELC 50/50 Premix
Registration number	-
UFI:	NA6X-XY4R-J208-JUST
Synonyms	None.
Product code	1040334
Issue date	19-August-2016
Version number	04
Revision date	25-September-2023
Supersedes date	25-September-2023

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

Identified uses	Antifreeze / Coolant.
Uses advised against	None known.

1.3. Details of the supplier of the safety data sheet

Supplier	ARTECO NV Metropoolstraat 25 B-2900 Schoten (Antwerpen) Belgium
e-mail	orders@arteco-coolants.com
Product information	+32 (0) 9 397 06 00

1.4. Emergency telephone number

Transportation emergency	Europe: +44 20 35147487 (24hr) Access code: 335087
Health Emergency	Europe: +44 20 35147487 (24hr) Access code: 335087
General emergency	112 or 999 SDS/Product information may not be available for the Emergency Service.

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

Reproductive toxicity (the unborn child)	Category 1B	H360D - May damage the unborn child.
Specific target organ toxicity - repeated exposure	Category 2 (kidney)	H373 - May cause damage to organs (kidney) through prolonged or repeated exposure.

2.2. Label elements

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

Contains: Ethylene glycol, Sodium 2-ethylhexanoate

Hazard pictograms

Signal word Danger

Hazard statements

H360D	May damage the unborn child.
H373	May cause damage to organs (kidney) through prolonged or repeated exposure.

Precautionary statements

Prevention

P201	Obtain special instructions before use.
P260	Do not breathe mist/vapours.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Response

P301 + P310	IF SWALLOWED: Immediately call a POISON CENTRE/doctor.
P308 + P313	IF exposed or concerned: Get medical advice/attention.

Storage Not assigned.

Disposal

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

Supplemental information on the label Restricted to professional users.

2.3. Other hazards This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

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	34 - < 80	107-21-1 203-473-3	01-2119456816-28-XXXX	-	#
Classification: Acute Tox. 4;H302, STOT RE 2;H373					
Sodium 2-ethylhexanoate	0.1 - < 3	19766-89-3 243-283-8	Exempt	603-230-00-6	
Classification: Repr. 1B;H360D					E
Methyl-1H-benzotriazole	0.1 - < 1	29385-43-1 249-596-6	01-2119979081-35-XXXX	-	
Classification: Acute Tox. 4;H302, Repr. 2;H361d, Aquatic Chronic 2;H411					

List of abbreviations and symbols that may be used above

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

Composition comments All concentrations are in percent by weight. The full text for all H-statements is displayed in section 16.
E Exempted from registration as per Annex V of the Regulation No (EC) 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), as amended for Great Britain.
A Downstream User Import Notification (DUIN) has been made by Arteco's appointed Only Representative to cover the continued importation of substances that are not otherwise exempt from the registration requirements of the UK REACH regulation.

SECTION 4: First aid measures

General information IF exposed or concerned: Get medical advice/attention. 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 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 Remove contact lenses, if present and easy to do.

Ingestion Rinse mouth. Get medical attention if symptoms occur.

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 under observation. Symptoms may be delayed.

SECTION 5: Firefighting 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 firefighters

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

Special fire fighting procedures Move containers 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 procedures

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/vapours. 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 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 Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe mist/vapours. Avoid prolonged exposure. Should be handled in closed systems, if possible. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

7.2. Conditions for safe storage, including any incompatibilities Store locked up. Store in tightly closed container. Store away from incompatible materials (see section 10 of the SDS).

7.3. Specific end use(s) Antifreeze / Coolant. Observe industrial sector guidance on best practices.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

UK. OELs. Workplace Exposure Limits (WELs) (EH40/2005 (Fourth Edition 2020)), Table 1

Components	Type	Value	Form
Ethylene glycol (CAS 107-21-1)	STEL	104 mg/m3	Vapour.
		40 ppm	Vapour.
	TWA	52 mg/m3	Vapour.
		10 mg/m3	Particulate.
		20 ppm	Vapour.

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	Notes
Ethylene glycol (CAS 107-21-1)			
Long-term, Local, Inhalation	7 mg/m3	10	Skin irritation
Long-term, Systemic, Dermal	53 mg/kg	84	Repeated dose toxicity
Methyl-1H-benzotriazole (CAS 29385-43-1)			
Long-term, Systemic, Dermal	0.01 mg/kg bw/day	3000	developmental toxicity / teratogenicity
Long-term, Systemic, Inhalation	350 µg/m3	750	developmental toxicity / teratogenicity
Long-term, Systemic, Oral	0.01 mg/kg bw/day	3000	developmental toxicity / teratogenicity

Workers

Components	Value	Assessment factor	Notes
Ethylene glycol (CAS 107-21-1)			
Long-term, Local, Inhalation	35 mg/m3	2	Skin irritation
Long-term, Systemic, Dermal	106 mg/kg	42	Repeated dose toxicity
Methyl-1H-benzotriazole (CAS 29385-43-1)			
Long-term, Systemic, Dermal	0.3 mg/kg bw/day	300	developmental toxicity / teratogenicity
Long-term, Systemic, Inhalation	21.2 mg/m3	75	developmental toxicity / teratogenicity

Predicted no effect concentrations (PNECs)

Components	Value	Assessment factor
Ethylene glycol (CAS 107-21-1)		
Freshwater	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
Methyl-1H-benzotriazole (CAS 29385-43-1)		
Freshwater	0.008 mg/l	50
Marine water	20 µg/l	500
Sediment (freshwater)	0.117 mg/l	10
Sediment (marine water)	0.292 mg/l	10
Soil	18.7 µg/kg	10
STP	39.4 mg/l	10

Exposure guidelines

UK EH40 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 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 facepiece. Eye protection should meet standard EN 166.

Skin protection

- Hand protection Wear appropriate chemical resistant gloves. Neoprene, butyl rubber, nitrile or Viton gloves are recommended. Full contact: Use gloves classified protection index 6 with breakthrough time of 480 minutes. Minimum glove thickness 0.38 mm.

- Other Wash hands thoroughly after handling. Use of an impervious apron is recommended.

Respiratory protection Chemical respirator with organic vapour cartridge and full facepiece.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

Hygiene measures Observe any medical surveillance requirements. 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	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. Fume scrubbers, filters or engineering modifications to the process equipment may be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	
Physical state	Liquid.
Form	Liquid.
Colour	Red.
Odour	Mild.
Odour threshold	Not determined.
pH	8.25 - 8.60 (20°C)
Melting point/freezing point	Not applicable. / -36 °C (-32.8 °F)
Initial boiling point and boiling range	109 °C (228.2 °F) (Estimated)
Flash point	Does not flash.
Evaporation rate	Not determined.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Explosive limit - lower (%)	Not determined.
Explosive limit – upper (%)	Not determined.
Vapour pressure	Not determined.
Vapour density	Not determined.
Relative density	Not determined.
Solubility(ies)	
Solubility (water)	Miscible.
Partition coefficient (n-octanol/water)	Not applicable, product is a mixture.
Auto-ignition temperature	398 °C (748.4 °F) (Ethylene glycol)
Decomposition temperature	Not determined.
Viscosity	Not determined.
Explosive properties	Not explosive.
Oxidising properties	Not oxidising.

9.2. Other information

Density	1.070 kg/l (20 °C) (Typical)
Kinematic viscosity	Not determined.
Particle size	Not applicable, material is a liquid.

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	Strong acids. Strong oxidising agents. Nitrates. Peroxides. Chlorates.
10.6. Hazardous decomposition products	At elevated temperatures: Ketones. Aldehydes.

SECTION 11: Toxicological information

General information	Occupational exposure to the substance or mixture may cause adverse effects.
Information on likely routes of exposure	
Inhalation	In high concentrations, mists/vapours 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	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. Prolonged exposure may cause chronic effects.

11.1. Information on toxicological effects

Acute toxicity

Product	Species	Test Results
Perkins ELC 50/50 Premix (CAS -)		
Acute		
Oral		
ATEmix		3278 mg/kg bw

Components	Species	Test Results
Ethylene glycol (CAS 107-21-1)		
Acute		
Dermal		
LD50	Mouse	> 3500 mg/kg
Inhalation		
Aerosol		
LC50	Rat	> 2.5 mg/l, 6 Hours
Oral		
LD50	Cat	1600 mg/kg
Methyl-1H-benzotriazole (CAS 29385-43-1)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg, 24 Hours
Oral		
LD50	Rat	720 mg/kg
Sodium 2-ethylhexanoate (CAS 19766-89-3)		
Acute		
Dermal		
LD50	Rat	> 2000 mg/kg, 24 Hours
Oral		
LD50	Rat	2043 mg/kg

Skin corrosion/irritation	Based on available data, the classification criteria are not met.
Serious eye damage/eye irritation	Based on available data, the classification criteria are not met.
Respiratory sensitisation	Based on available data, the classification criteria are not met.
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	May damage the unborn child.

Reproductivity

Methyl-1H-benzotriazole (CAS 29385-43-1)	30 mg/kg bw/day OECD 414 Result: LOAEL Species: Rat

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	Based on available data, the classification criteria are not met.
Mixture versus substance information	No information available.

Other information No data available.

SECTION 12: Ecological information

12.1. Toxicity The product is 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.

Components		Species	Test Results
Ethylene glycol (CAS 107-21-1)			
Aquatic			
Crustacea	EC50	Daphnia magna	> 100 mg/l, 48 Hours
Acute			
Fish	LC50	Fathead minnow (Pimephales promelas)	72860 mg/l, 96 hours
Methyl-1H-benzotriazole (CAS 29385-43-1)			
Aquatic			
Acute			
Algae	ECr50	Pseudokirchneriella subcapitata	75 mg/l, 72 hours
Crustacea	EC50	Daphnia galeata	8.58 mg/l, 48 hours
	LC50	Arcartia tonsa	55 mg/l, 48 hours
Fish	LC50	Danio rerio	180 mg/l, 72 hours
Chronic			
Crustacea	EC10	Daphnia galeata	0.4 mg/l, 21 days

12.2. Persistence and degradability Ethylene glycol: >90% / 10 days (OECD 301A) 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 This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

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 regulations.

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.

ADN

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 73/78 and the IBC Code

Not established.

SECTION 15: Regulatory information

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

Retained direct EU regulations

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

Not listed.

Regulation (EU) 2019/1021 On persistent organic pollutants (recast), as amended

Not listed.

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

Not listed.

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

Not listed.

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

Not listed.

Regulation (EU) 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

Not listed.

Authorisations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, 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 - Conditions of restriction given for the associated entry number should be considered

Ethylene glycol (CAS 107-21-1)
Sodium 2-ethylhexanoate (CAS 19766-89-3)

Other regulations

This product is classified and labelled in accordance with the retained CLP Regulation (EC) No 1272/2008, as amended for Great Britain.
This Safety Data Sheet is compiled in accordance with REACH Regulation (EC) No 1907/2006, as amended by UK REACH Regulations SI 2019/758.

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).
For countries not listed above, further action by the importer is needed.

Follow the requirements of the Control of Substances Hazardous to Health Regulations 2002 [SI 2002/2677], as amended, when using this material.
Use of this product by young persons under the age of 18 is not allowed in accordance with the Management of Health and Safety at Work Regulations 1999 [SI 1999/3242], as amended.
New or expectant mothers should not work with this product if there is a risk due to exposure, in accordance with the Management of Health and Safety at Work Regulations 1999 [SI 1999/3242], as amended.

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

List of abbreviations

ADN: European Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterways.
ADR: Agreement concerning the International Carriage of Dangerous Goods by Road.
ATE: Acute toxicity estimate.
CAS: Chemical Abstract Service.
CEN: European Committee for Standardization.
DNEL: Derived No-Effect Level.
EC50: Effective Concentration, 50%.

	IATA: International Air Transport Association. IBC Code: International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk. IMDG: International Maritime Dangerous Goods. LC50: Lethal Concentration, 50%. LD50: Lethal Dose, 50%. MARPOL: International Convention for the Prevention of Pollution from Ships. PBT: Persistent, bioaccumulative and toxic. PNEC: Predicted No-Effect Concentration. RID: Regulations concerning the International Carriage of Dangerous Goods by Rail. STEL: Short term exposure limit. TWA: Time Weighted Average. vPvB: Very persistent and very bioaccumulative.
References	ECHA CHEM
Information on evaluation method leading to the classification of mixture	The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.
Full text of any statements, which are not written out in full under sections 2 to 15	H302 Harmful if swallowed. H360D May damage the unborn child. H361d Suspected of damaging the unborn child. H373 May cause damage to organs through prolonged or repeated exposure by ingestion. H411 Toxic to aquatic life with long lasting effects.
This SDS contains revisions in the following section(s):	2, 3, 11, 15.
Training information	Follow training instructions when handling this material.
Disclaimer	ARTECO NV cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.