SAFETY DATA SHEET

According to Regulation (EC) No. 1907/2006 (REACH) Article 31, Annex II as amended.

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

1.1 Product identifier

Product name: ECOCOOL R - FERROSTAR

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

Identified uses: Coolant/ Cutting solution
Uses advised against: No uses advised against identified.

1.3 Details of the supplier of the safety data sheet

Manufacturer / Supplier	FUCHS LUBRICANTS (UK) PLC. New Century Street Hanley Stoke-on-Trent, Staffordshire, ST1 5HU UK
Telephone:	+44 (0) 1782 203700
Contact Person:	Product Safety department
Telephone:	+44 (0) 1782 203700
E-mail:	product.safety@fuchs-oil.com

1.4 Emergency telephone number: UK NHS: Dial 111. Ireland NPIS: Dial +353 1 8092566.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

The product has been classified and labelled as hazardous according to regulation (EU) 1272/2008 (CLP).

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

Health Hazards

Skin corrosion	Category 1B	H314: Causes severe skin burns and eye damage.
Serious eye damage	Category 1	H318: Causes serious eye damage.

Environmental Hazards

Chronic hazards to the aquatic environment	Category 3	H412: Harmful to aquatic life with long lasting effects.

Hazard summary

Physical Hazards: No data available.

2.2 Label Elements

Contains: prim. Alkanol amine
alkanolamine

Signal Words: Danger

Hazard Statement(s): H314: Causes severe skin burns and eye damage.
H412: Harmful to aquatic life with long lasting effects.

Precautionary Statement

Prevention: P273: Avoid release to the environment.
P280: Wear protective gloves/protective clothing/eye protection/face protection.

Response: P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P310: Immediately call a POISON CENTER/doctor.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Disposal: P501: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

2.3 Other hazards: By handling of mineral oil products and chemical products no particular hazard is known when normal precautions (item 7) and personal protective equipment (item 8) are kept. The product may not be released into the environment without control.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

General information: Mixture of mineral base oil, anionic and nonionic agents and corrosion preventing additives in combination with stabilizers based on glycol-fatty alcohols. This product is applied only as solution or emulsion in water.

Chemical name	Identifier	Concentration *	REACH Registration No.	Notes
base oil, paraffinic	EINECS: 265-159-2	10,00 - <20,00%	01-2119480132-48	
prim. Alkanol amine	EINECS: 213-195-4	3,00 - <5,00%	01-2119520701-52	
prim. alkanolamine, ionic equilibrium with acids	Neutralisation product (*)	1,00 - <5,00%		
tert. alkanolamine, ionic equilibrium with acids	Neutralisation product (*)	1,00 - <5,00%		
Organic polysulphide	EINECS: 270-335-7	1,00 - <5,00%	01-2119540516-41	

Fatty alcohol, ethoxylated	EC: 500-236-9	2,50 - <5,00%		
alkanolamine	EINECS: 202-488-2	1,00 - <3,00%		
Monoethanol amine	EINECS: 205-483-3	1,00 - <3,00%	01-2119486455-28	
Boric acid	EINECS: 233-139-2	0,10 - <5,40%	01-2119486683-25	**

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.
PBT: persistent, bioaccumulative and toxic substance.
vPvB: very persistent and very bioaccumulative substance.
** Regulation (EC) No. 1907/2006, REACH Article 59(1). Candidate List
(*) Neutralisation product: Equilibrium of Ionic Pairs in aequous solution according to REACH Annex V, 4.

Classification

Chemical name	Identifier	Classification	
base oil, paraffinic	EINECS: 265-159-2	CLP:	Asp. Tox. 1;H304
prim. Alkanol amine	EINECS: 213-195-4	CLP:	Skin Corr. 1B;H314
prim. alkanolamine, ionic equilibrium with acids	Neutralisation product (*)	CLP:	Eye Irrit. 2;H319, Skin Irrit. 2;H315
tert. alkanolamine, ionic equilibrium with acids	Neutralisation product (*)	CLP:	Acute Tox. 4;H302, Eye Irrit. 2;H319
Organic polysulphide	EINECS: 270-335-7	CLP:	Aquatic Chronic 4;H413
Fatty alcohol, ethoxylated	EC: 500-236-9	CLP:	Skin Irrit. 2;H315, Aquatic Chronic 2;H411; M-Factor (aquatic chronic): 1
alkanolamine	EINECS: 202-488-2	CLP:	Skin Corr. 1B;H314, Eye Dam. 1;H318, Aquatic Acute 1;H400, Acute Tox. 4;H302
Monoethanol amine	EINECS: 205-483-3	CLP:	Skin Corr. 1B;H314, Eye Dam. 1;H318, STOT SE 3;H335, Acute Tox. 4;H302, Acute Tox. 4;H312, Acute Tox. 4;H332, Aquatic Chronic 3;H412
Boric acid	EINECS: 233-139-2	CLP:	Repr. 1B;H360Df

CLP: Regulation No. 1272/2008.

For the wording of the listed risk phrases refer to section 16.

SECTION 4: First aid measures

General: Instantly remove any clothing soiled by the product.

4.1 Description of first aid measures

Inhalation: If breathing stops, provide artificial respiration. If breathing is difficult, give oxygen. Supply fresh air; consult doctor in case of symptoms.

Eye contact: Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention.

Skin Contact: Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Destroy or thoroughly clean contaminated shoes. Get medical attention.

Ingestion: Rinse mouth. Never give liquid to an unconscious person. Do not induce vomiting without advice from poison control center. Seek medical attention.

4.2 Most important symptoms and effects, both acute and delayed:	Risk of serious damage to eyes. Causes burns.
4.3 Indication of any immediate medical attention and special treatment needed	Hand over this safety data sheet to the physician with the special comment "watermiscible cutting oil". Get medical attention if symptoms occur.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media:	CO2, fire extinguishing powder or fog like water spraying. Extinguish larger fires with alcohol resistant foam or spray water with suitable surfactant added
Unsuitable extinguishing media:	Water with a full water jet.
5.2 Special hazards arising from the substance or mixture:	During fire, gases hazardous to health may be formed.

5.3 Advice for firefighters

Special fire fighting procedures:	Move container from fire area if it can be done without risk. Dispose of fire debris and contaminated fire fighting water inaccordance with official regulations. Collect contaminated fire fighting water separately. It must not enter drains.
Special protective equipment for fire-fighters:	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:	Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep unauthorized personnel away. In case of spills, beware of slippery floors and surfaces.
6.2 Environmental Precautions:	Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Prevent from spreading (e.g. by binding or oil barriers). Environmental manager must be informed of all major spillages. Do not allow to enter drainage system, surface or ground water.
6.3 Methods and material for containment and cleaning up:	Absorb with liquid-binding material (sand, diatomite, acidbinders, universal binders, sawdust). Dispose of the material collected according to regulations. Stop the flow of material, if this is without risk.
6.4 Reference to other sections:	See Section 8 of the SDS for Personal Protective Equipment. See Section 7 for information on safe handling See Section 13 for information on disposal. Dike for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Stop the flow of material, if this is without risk.

SECTION 7: Handling and storage:

7.1 Precautions for safe handling: Prevent formation of aerosols. Do not eat, drink or smoke when working with the product. Take usual precautions when handling mineral oil products or chemical products. Observe good industrial hygiene practices. Provide adequate ventilation.

7.2 Conditions for safe storage, including any incompatibilities: Local regulations concerning handling and storage of waterpolluting products have to be followed. Store above freezing.

7.3 Specific end use(s): not applicable

Storage Class: 10-13, combustible / non-combustible liquids and solids

SECTION 8: Exposure controls/personal protection

8.1 Control Parameters

Occupational Exposure Limits

Chemical name	type	Exposure Limit Values	Source
Monoethanol amine	TWA	1 ppm 2,5 mg/m3	UK. EH40 Workplace Exposure Limits (WELs) (12 2011)
Monoethanol amine	STEL	3 ppm 7,6 mg/m3	UK. EH40 Workplace Exposure Limits (WELs) (12 2011)

8.2 Exposure controls

Appropriate engineering controls: Provide adequate ventilation. 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: Wash hands before breaks and after work. Use personal protective equipment as required. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment. The usual precautionary measures should be adhered to inhandling the chemicals or the mineral oil products.

Eye/face protection: Safety glasses (EN 166) recommended during refilling. Avoid contact with eyes. Wear closed protection glasses.

Skin protection

Hand Protection: Material: Nitrile butyl rubber (NBR).
Min. Breakthrough time: >= 480 min
Recommended thickness of the material: >= 0,38 mm

Avoid long-term and repeated skin contact. Suitable gloves can be recommended by the glove supplier. Use skin protection cream for preventive skin protection. Protective gloves, where permitted in acc. to safety directions. The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Other: Do not carry cleaning cloths impregnated with the product in trouser pockets. Wear suitable protective clothing.

Respiratory Protection: Ensure good ventilation/exhaustion at the workplace. Avoid breathing vapour/ aerosol.

Thermal hazards: Not known.

Hygiene measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing to remove contaminants. Discard contaminated footwear that cannot be cleaned.

Environmental Controls: No data available.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	
Physical state:	liquid
Form:	liquid
Color:	Yellow
Odor:	Characteristic
Odor Threshold:	Not applicable for mixtures
pH:	9,7 (50 g/l, 20 °C)
Freezing point:	Not applicable for mixtures
Boiling Point:	No data available.
Flash Point:	not applicable
Evaporation Rate:	Not applicable for mixtures
Flammability (solid, gas):	Value not relevant for classification
Flammability Limit - Upper (%)–:	Not applicable for mixtures
Flammability Limit - Lower (%)–:	Not applicable for mixtures
Vapor pressure:	Not applicable for mixtures
Vapor density (air=1):	Not applicable for mixtures
Density:	0,97 g/ml (15,00 °C)
Solubility(ies)	
Solubility in Water:	Soluble
Solubility (other):	No data available.

Partition coefficient (n-octanol/water):	Not applicable for mixtures
Autoignition Temperature:	Value not relevant for classification
Decomposition Temperature:	Value not relevant for classification
Kinematic viscosity:	71 mm2/s (40 °C)
Explosive properties:	Value not relevant for classification
Oxidizing properties:	Value not relevant for classification
9.2 Other information	No data available.

SECTION 10: Stability and reactivity

10.1 Reactivity:	Stable under normal use conditions.
10.2 Chemical Stability:	Stable under normal use conditions.
10.3 Possibility of hazardous reactions:	Stable under normal use conditions.
10.4 Conditions to avoid:	Stable under normal use conditions.
10.5 Incompatible Materials:	Strong oxidizing substances. Strong acids. Strong bases.
10.6 Hazardous Decomposition Products:	Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors.

SECTION 11: Toxicological information

Information on likely routes of exposure

Inhalation:	No data available.
Ingestion:	No data available.
Skin Contact:	Causes severe skin burns.
Eye contact:	Causes serious eye damage.

11.1 Information on toxicological effects

Acute toxicity

Oral

Product:	ATEmix: 4.428 mg/kg

Specified substance(s)

base oil, paraffinic	LD 50 (Rat): > 5.000 mg/kg
prim. Alkanol amine	LD 50 (Rat, Female, Male): 3.400 mg/kg
prim. alkanolamine, ionic equilibrium with acids	LD 50 (Rat): 3.400 mg/kg
tert. alkanolamine, ionic equilibrium with acids	LD 50 (Rat): > 200 - 2.000 mg/kg (OECD 401)
Fatty alcohol, ethoxylated	LD 50 (Rat): > 5.001 mg/kg
alkanolamine	LD 50 (Mouse): 2.300 mg/kg
Monoethanol amine	LD 50 (Rat): 1.515 mg/kg (OECD 401)
Boric acid	LD 50 (Rat, Male): 3.450 mg/kg (OECD 401)

Dermal

Product: ATEmix: 110.000 mg/kg

Specified substance(s)

base oil, paraffinic	LD 50 (Rabbit): > 5.000 mg/kg
prim. Alkanol amine	LD 50 (Rabbit, Female, Male): > 3.000 mg/kg
prim. alkanolamine, ionic equilibrium with acids	LD 50 (Rabbit): > 3.000 mg/kg
Monoethanol amine	LD 50 (Rabbit): 2.504 mg/kg (OECD 402)
Boric acid	LD 50 (Rabbit): > 2.001 mg/kg

Inhalation

Product: ATEmix: 1.100 mg/l
Vapour

Specified substance(s)

base oil, paraffinic	LC 50 (Rat, 4 h): > 5 mg/l
prim. Alkanol amine	LC 50 (Rat, Female, Male, 8 h): > 8,7 mg/l Vapour
Boric acid	LC 50 (Rat, Female, Male, 4 h): > 2,12 mg/l (OECD 403)

Skin Corrosion/Irritation:

Product: Based on available data, the classification criteria are met.

Specified substance(s)

prim. Alkanol amine	OECD 404 (Rabbit): Corrosive.
Monoethanol amine	Corrosive.

Serious Eye Damage/Eye Irritation:

Product:	Based on available data, the classification criteria are met.
Specified substance(s)	
Monoethanol amine	
	Corrosive to skin and eyes.

Respiratory or Skin Sensitization:

Product:	Skin sensitizer: Based on available data, the classification criteria are not met. Respiratory sensitizer: Based on available data, the classification criteria are not met.
Specified substance(s)	
prim. Alkanol amine	
	No sensitizing effect (guinea pig); OECD 406
Monoethanol amine	, OECD 406-1 (Guinea Pig) Not a skin sensitizer.
Boric acid	
	No sensitizing effect (guinea pig); OECD 406

Germ Cell Mutagenicity

Product:	Based on available data, the classification criteria are not met.

Carcinogenicity

Product:	Based on available data, the classification criteria are not met.

Reproductive toxicity

Product:	Based on available data, the classification criteria are not met.

Specific Target Organ Toxicity - Single Exposure

Product:	Based on available data, the classification criteria are not met.

Specific Target Organ Toxicity - Repeated Exposure

Product:	Based on available data, the classification criteria are not met.

Aspiration Hazard

Product:	Based on available data, the classification criteria are not met.

Other Adverse Effects: No data available.

SECTION 12: Ecological information

12.1 Toxicity

Acute toxicity

Product:	Based on available data, the classification criteria are not met.

Fish

Specified substance(s)	
base oil, paraffinic	LC 50 (Fish, 96 h): > 101 mg/l
prim. Alkanol amine	LC 50 (Fish, 96 h): 460 mg/l

prim. alkanolamine, ionic equilibrium with acids	LC 50 (Fish, 96 h): 460 mg/l
tert. alkanolamine, ionic equilibrium with acids	LC 50 (Fish, 96 h): 22 - 50 mg/l (OECD 203)
Monoethanol amine	LC 50 (Fish, 96 h): 125 mg/l
Boric acid	LC 50 (Fish, 96 h): 456 mg/l

Aquatic Invertebrates
Specified substance(s)

prim. Alkanol amine	EC 50 (Water Flea, 48 h): 189 mg/l
prim. alkanolamine, ionic equilibrium with acids	EC 50 (Water Flea, 48 h): 189 mg/l
tert. alkanolamine, ionic equilibrium with acids	EC 50 (Water Flea, 48 h): 19,1 mg/l (OECD 202)
Monoethanol amine	EC 50 (Water Flea, 48 h): 65 mg/l
Boric acid	EC 50 (Water Flea, 48 h): 133 mg/l

Chronic ToxicityProduct: Based on available data, the classification criteria are met.

Fish
Specified substance(s)

Monoethanol amine	NOEC (Fish, 30 d): 1,2 mg/l

Aquatic Invertebrates
Specified substance(s)

Monoethanol amine	NOEC (Water Flea, 21 d): 0,85 mg/l (OECD 211)

Toxicity to Aquatic Plants
Specified substance(s)

prim. Alkanol amine	EC 50 (Alga, 72 h): 202 mg/l
prim. alkanolamine, ionic equilibrium with acids	EC 50 (Alga, 72 h): 202 mg/l
tert. alkanolamine, ionic equilibrium with acids	EC 50 (Alga, 72 h): 1,35 mg/l (OECD 201)
Fatty alcohol, ethoxylated	EC 50 (Alga, 72 h): > 10 - 100 mg/l (OECD 201)
Monoethanol amine	EC 50 (Alga, 72 h): 22 mg/l
Boric acid	EC 50 (Alga, 72 h): 229 mg/l

12.2 Persistence and Degradability

Biodegradation

Product:	Not applicable for mixtures

Specified substance(s)

prim. Alkanol amine	84 % (28 d, OECD 302B) Readily biodegradable
Fatty alcohol, ethoxylated	Readily biodegradable
Monoethanol amine	> 90 % (21 d, OECD 301A) The product is easily biodegradable.

12.3 Bioaccumulative Potential

Product: Not applicable for mixtures

12.4 Mobility in Soil:

Product: Not applicable for mixtures

12.5 Results of PBT and vPvB assessment: The product does not contain any substances fulfilling the PBT/vPvB criteria.

12.6 Other Adverse Effects: Harmful to aquatic life with long lasting effects.

Water Hazard Class (WGK): WGK 1: slightly water-endangering.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

General information: Dispose in accordance with all applicable regulations.

Disposal methods: Discharge, treatment, or disposal may be subject to national, state, or local laws.

European Waste Codes

07 01 04*: other organic solvents, washing liquids and mother liquors

SECTION 14: Transport information

ADR/RID

14.1 UN Number:	UN 1760
14.2 UN Proper Shipping Name:	CORROSIVE LIQUID, N.O.S.(2-(2-aminoethoxy)ethanol)
14.3 Transport Hazard Class(es)	
Class:	8
Label(s):	8
Hazard No. (ADR):	80
Tunnel restriction code:	(E)
14.4 Packing Group:	III
14.5 Environmental hazards:	–
14.6 Special precautions for user:	–

ADN

14.1 UN Number:	
14.2 UN Proper Shipping Name:	CORROSIVE LIQUID, N.O.S.(2-(2-aminoethoxy)ethanol)
14.3 Transport Hazard Class(es)	
Class:	8
Label(s):	8
14.3 Packing Group:	III
14.5 Environmental hazards:	–
14.6 Special precautions for user:	–

IMDG

14.1 UN Number:	
14.2 UN Proper Shipping Name:	CORROSIVE LIQUID, N.O.S.(2-(2-aminoethoxy)ethanol)
14.3 Transport Hazard Class(es)	
Class:	8
Label(s):	8
EmS No.:	F-A, S-B
14.3 Packing Group:	III
14.5 Environmental hazards:	–
14.6 Special precautions for user:	–

IATA

14.1 UN Number:	
14.2 Proper Shipping Name:	Corrosive liquid, n.o.s.(2-(2-aminoethoxy)ethanol)
14.3 Transport Hazard Class(es):	
Class:	8
Label(s):	8
14.4 Packing Group:	III
14.5 Environmental hazards:	–
14.6 Special precautions for user:	–

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: not applicable.

SECTION 15: Regulatory information

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

EU Regulations

Regulation (EC) No. 2037/2000 Substances that deplete the ozone layer: none

Regulation (EC) No. 850/2004 on persistent organic pollutants: none

15.2 Chemical safety assessment: No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

Revision Information: Vertical lines in the margin indicate an amendment.

Wording of the H-statements in section 2 and 3

H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H360Df	May damage the unborn child. Suspected of damaging fertility.
H400	Very toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
H413	May cause long lasting harmful effects to aquatic life.

Other information: The classification is in line with current EC lists. It is expanded, however, by information from technical literature and by information furnished by supplier companies. The classification results from the Conventional Method mentioned in regulation EU 1272/2008 (CLP).

Revision Date: 01.09.2016

Disclaimer: The data contained in this safety data sheet are based on our current knowledge and experience and are given to the best of our knowledge and belief. It characterizes the product only with regard to safety requirements for handling, transport and disposal. The data do not describe the product's properties (tech. product specification). Neither should any agreed property nor the suitability of the product for any specific technical application be deduced from the data contained in this safety data sheet. Modifications on this document are not allowed. The data are not transferable to other products. In the case of mixing the product with other products or in the case of processing, the data in this safety data sheet are not necessarily valid for the new-made material. It is the responsibility of the recipient of the product to observe federal, state and local law. Please contact us to obtain up-to-date safety data sheets. This document was issued electronically and has no signature.