SAFETY DATA SHEET

ACCORDING TO EC-REGULATIONS 1907/2006 (REACH), 1272/2008 (CLP) & 2015/830

PENNINE MICROCUT EP-X

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier — **PENNINE MICROCUT EP-X**

Synonym(s):	None
REACH Registration No.:	Not applicable - Mixture
EC No.:	Not applicable - Mixture
EC INDEX No.:	Not applicable - Mixture
CAS No.:	Not applicable - Mixture

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

Identified Use(s): Metalworking fluid - soluble. To be diluted in water prior to use. For specific application advice see appropriate Technical Data Sheet or consult our company representative.

Uses Advised Against: This product must not be used in applications other than those listed in Section 1 without first seeking the advice of the supplier.

1.3 Details of the supplier of the safety data sheet

Company Address:
PENNINE LUBRICANTS LTD.
32 ATLAS WAY
SHEFFIELD
S4 7QQ.

Telephone: 0114 285 2987
E-mail:

1.4 Emergency telephone number — 0114 285 2987 0900 - 17.00 Monday - Friday

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

According to Regulation (EC) No. 1272/2008 (CLP):
Skin corrosion/irritation - Category 2. H315: Causes skin irritation.
Serious eye damage/irritation - Category 1. H318: Causes serious eye damage.
Hazardous to the aquatic environment: Aquatic Chronic - Category 3. H412: Harmful to aquatic life with long lasting effects.

2.2 Label elements

Hazard Pictogram(s):

Signal Word(s): Danger

Hazard Statement(s):
H315: Causes skin irritation.
H318: Causes serious eye damage.
H412: Harmful to aquatic life with long lasting effects.

Precautionary Statement(s):

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

Response:
P302+P352: IF ON SKIN: Wash with plenty of water.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310: Immediately call a POISON CENTER/doctor.
P391: Collect spillage.

Storage:
No precautionary phrases.

Disposal:
P501: Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements: None

2.3 Other hazards

Other hazards which do not result in classification: Repeated and/or prolonged skin contact with in-use emulsions, especially if over-strength, may lead to defatting of the skin.

PBT / vPvB: Material does not meet the criteria for PBT or vPvB in accordance with REACH Annex XIII.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

This material is a mixture.

Chemical nature: Highly refined mineral oil, emulsifiers and corrosion inhibitors with long-chain chlorinated EP and other additives. To be diluted in water prior to use.
The highly refined mineral oil contains <3% (w/w) DMSO extract, according to IP346.

Hazardous Ingredient(s)

Chemical Name	Identifiers	%	Classification (According to Regulation (EC) No. 1272/2008 (CLP))
Distilled tall oil neutralised with alkyltriamine**	CAS: Not available EC No.: Not available REACH: Equilibrium of ionic pairs**	1 - 9.99	Acute Tox. 4 (Dermal); H312 Skin Irrit. 2; H315 Eye Dam. 1; H318 Aquatic Chronic 3; H412
2-phenoxythanol	CAS: 122-99-6 EC No.: 204-589-7 EC INDEX No.: 603-098-00-9 REACH: 01-2119488943-21	1 - 9.99	Acute Tox. 4 (Oral); H302 Eye Irrit. 2; H319
Phosphate ester neutralised with alkyltriamine**	CAS: Not available EC No.: Polymer REACH: Equilibrium of ionic pairs**	1 - 9.99	Acute Tox. 4 (Oral); H302 Skin Irrit. 2; H315 Eye Dam. 1; H318 Aquatic Chronic 3; H412
Alkyl ether carboxylic acids neutralised with 2-Iminoethanol**	CAS: Not available EC No.: Polymer REACH: Equilibrium of ionic pairs**	1 - 9.99	Skin Irrit. 2; H315 Eye Dam. 1; H318
2-aminoethanol	CAS: 141-43-5 EC No.: 205-483-3 EC INDEX No.: 603-030-00-8 REACH: 01-2119486455-28	1 - 4.99	Acute Tox. 4 (Oral); H302 Acute Tox. 4 (Dermal); H312 Acute Tox. 4 (Inhalation); H332 Skin Corr 1B; H314 Eye Dam. 1; H318 STOT SE 3; H335 Aquatic Chronic 3; H412
Sulfonic acids, petroleum, sodium salts	CAS: 68608-26-4 EC No.: 271-781-5 REACH: 01-2119527859-22	1 - 4.99	Eye Irrit. 2; H319
Alcohols, C9-11, ethoxylated	CAS: 68439-46-3 EC No.: Polymer REACH: Polymer	1 - 4.99	Eye Dam. 1; H318
Alcohols, C11-14-iso-, C13-rich	CAS: 68526-86-3 EC No.: 271-235-6 REACH: 01-2119454259-32	1 - 4.99	Skin Irrit. 2; H315 Aquatic Acute 1; H400 Aquatic Chronic 2; H411
Pyridine-2-thiol 1-oxide, sodium salt	CAS: 3811-73-2 EC No.: 223-296-5 REACH: BPR Review program substance	<1	Acute Tox. 4 (Oral); H302 Acute Tox. 4 (Inhalation); H332 Acute Tox. 3 (Dermal); H311 Skin Irrit. 2; H315 Eye Irrit. 2; H319 Aquatic Acute 1; H400 (M=100) Aquatic Chronic 1; H410 (M=10)

** *Neutralisation product: Equilibrium of ionic pairs in aqueous solution according to REACH, Annex V, 4.*

See Section 16 for the full text of the H statements declared above.

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

Eye Contact:	Immediately flush eyes for at least 15 minutes. Irrigate eyes thoroughly whilst lifting eyelids.Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention.
Skin Contact:	Wash skin with soap and water. Remove contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.
Ingestion:	Do NOT induce vomiting. Provided the patient is conscious, wash out mouth with water and give 200-300 ml (half a pint) of water to drink. Never give anything by mouth to an unconscious person. Get medical attention.
Inhalation:	IF INHALED: Remove person to fresh air and keep comfortable for breathing. If not breathing, give artificial respiration. If breathing is laboured, administer oxygen. Seek medical treatment when anyone has symptoms apparently due to inhalation. The effect of inhalation may be delayed.

4.2 Most important symptoms and effects, both acute and delayed

Eye Contact:	Causes severe irritation. May cause corneal damage. In-use dilute emulsions may cause transient irritation.
Skin Contact:	May cause irritation. Repeated and/or prolonged skin contact with in-use emulsions, especially if over-strength, may lead to defatting of the skin.
Ingestion:	The ingestion of significant quantities may cause nausea/vomiting. Abdominal pain. The ingestion of significant quantities may cause damage to digestive system.
Inhalation:	Unlikely to be hazardous by inhalation because of the low vapour pressure of the material at ambient temperature. Vapours or fumes evolved during thermal processing may cause irritation to the respiratory system.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media:	Extinguish preferably with dry chemical, sand, foam or carbon dioxide.
Unsuitable extinguishing media:	Do not use water jet.

5.2 Special hazards arising from the substance or mixture

Combustion products:	May give off toxic fumes in a fire. Combustion products may include the following: Oxides of carbon; Sulphur oxides; oxides of phosphorus; Nitrogen oxides; Hydrogen chloride; Incomplete combustion products; Toxic gases/vapours.

5.3 Advice for firefighters

Special protective equipment and precautions for fire fighters:	Fire fighters should wear complete protective clothing including self-contained breathing apparatus. Water spray should be used to cool containers.

5.4 Additional Information

Dispose of contaminated extinction water according to official regulations. Prevent liquid entering watercourses and sewers.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Avoid generation of mist. Avoid breathing mist/vapours/spray. Spillage causes slippery surface. Clean up spill immediately. Wear suitable protective clothing. See Also Section 8.

6.2 Environmental precautions

Contain spillages. Prevent release to the environment. Prevent entry into drains. Disposal should be in accordance with local, state or national legislation. See Also Section 13.

6.3 Methods and material for containment and cleaning up

Small spillages:	Stop leak if safe to do so. Absorb spillage in suitable inert material. Collect as

much as possible in clean container for reuse or disposal. Seal containers and label them.

Large spillages: Stop leak if safe to do so. Contain spillages. Prevent release to the environment. Dyke to prevent entry to sewer or waterway. Transfer liquid to a holding container. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Seal containers and label them. Disposal should be in accordance with local, state or national legislation.

6.4 Reference to other sections

For guidance on selection of personal protective equipment see Chapter 8 of this Safety Data Sheet. For guidance on disposal of spilled material see Chapter 13 of this Safety Data Sheet.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Wear suitable gloves and eye/face protection. Avoid breathing mist/vapours/spray. Provide adequate ventilation, including appropriate local extraction if fumes or vapours are likely to be evolved. Do not eat, drink or smoke when using this product.

7.2 Conditions for safe storage, including any incompatibilities

Keep containers in a clean, cool and dry area away from heat sources. Protect from frost. Keep away from direct sunlight. Keep container tightly closed and in a well-ventilated place.

7.3 Specific end use(s)

Metalworking fluid - soluble. Contact supplier for further information.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational Exposure Limits: IOELV: Indicative Occupational Exposure Limit Value. (Information on ingredients)

Chemical Name	%	LTEL (8hr TWA)	STEL	Source
2-aminoethanol	1 - 4.99	2.5 mg/m³ 1 ppm *	7.6 mg/m³ 3 ppm *	2nd IOELV List

Other Occupational Exposure Limits. (Information on ingredients)

Chemical Name	%	LTEL (8hr TWA)	STEL	Source
2-aminoethanol	1 - 4.99	2.5 mg/m³ 1 ppm *	7.6 mg/m³ 3 ppm *	UK EH40 2005 WELs (3rd edition, 2018)
Mineral oil	30 - 50	5 mg/m³	10 mg/m³	TLV (ACGIH)
		5 mg/m³	10 mg/m³	PEL (OSHA)

* *Notation: Can be absorbed through the skin*

Recommended monitoring method: If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

PNECs and DNELs:

Information on ingredients - DNEL

Chemical Name	exposure	population potentially exposed	Exposure route	
2-phenoxythanol				
20.83 mg/kg Body weight /day	Chronic	Workers	Dermal	Systemic effects
8.07 mg/m³	Chronic	Workers	Inhalation	Systemic effects
8.07 mg/m³	Chronic	Workers	Inhalation	Local effects
10.42 mg/kg Body weight /day	Chronic	Consumers	Dermal	Systemic effects
2.41 mg/m³	Chronic	Consumers	Inhalation	Systemic effects
2.41 mg/m³	Chronic	Consumers	Inhalation	Local effects
2-aminoethanol				
1 mg/kg Body weight /day	Chronic	Workers	Dermal	Systemic effects
3.3 mg/m³	Chronic	Workers	Inhalation	Systemic effects
3.3 mg/m³	Chronic	Workers	Inhalation	Local effects
0.24 mg/kg Body weight /day	Chronic	Consumers	Dermal	Systemic effects
2 mg/m³	Chronic	Consumers	Inhalation	Systemic effects
2 mg/m³	Chronic	Consumers	Inhalation	Local effects
Sulfonic acids, petroleum, sodium salts				
3.33 mg/kg Body weight /day	Chronic	Workers	Dermal	Systemic effects
0.66 mg/m³	Chronic	Workers	Inhalation	Systemic effects
1.667 mg/kg Body weight /day	Chronic	Consumers	Dermal	Systemic effects
0.33 mg/m³	Chronic	Consumers	Inhalation	Systemic effects

Information on ingredients - PNEC

2-phenoxythanol		
Aquatic Compartment	Fresh water Sea water	0.943 mg/l 0.094 mg/l
Microbiological Activity in Sewage Treatment Systems		24.8 mg/l
Sediment Compartment	Fresh water Sea water	7.237 mg/kg 0.724 mg/kg
Terrestrial Compartment	Soil	1.26 mg/kg
2-aminoethanol		
Aquatic Compartment	Fresh water Sea water	0.085 mg/l 0.0085 mg/l
Microbiological Activity in Sewage Treatment Systems		100 mg/l
Sediment Compartment	Fresh water Sea water	0.434 mg/kg 0.0434 mg/kg
Terrestrial Compartment	Soil	0.0367 mg/kg
Sulfonic acids, petroleum, sodium salts		
Aquatic Compartment	Fresh water Sea water	1 mg/l 1 mg/l
Microbiological Activity in Sewage Treatment Systems		100 mg/l
Sediment Compartment	Fresh water Sea water	723,500,000 mg/kg 723,500,000 mg/kg
Terrestrial Compartment	Soil	868,700,000 mg/kg

8.2 Exposure controls

Engineering controls:

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Provide adequate ventilation, including appropriate local extraction if dusts, fumes or vapours are likely to be evolved. Engineering controls should be provided which maintain airborne concentrations below the relevant guidelines. The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances.

Occupational exposure controls:

No special requirements. Provide adequate ventilation if fumes or vapours are likely to be evolved to ensure that the defined occupational exposure limit is not exceeded.

Personal protection equipment:	Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.
Eye/ face protection:	Wear eye protection with side protection (EN166).
Hand protection:	Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. PVC, neoprene or nitrile rubber gloves. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Breakthrough time of the glove material: refer to the information provided by the gloves' producer. For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same, but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm depending on the glove make and model. Always seek advice from glove suppliers.
Body protection:	Use of protective clothing is good industrial practice. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Cotton or polyester/cotton overalls will only provide protection against light superficial contamination that will not soak through to the skin. Overalls should be laundered on a regular basis. When the risk of skin exposure is high (e.g. when cleaning up spillages or if there is a risk of splashing) then chemical resistant aprons and/or impervious chemical suits and boots will be required.
Respiratory protection:	No respiratory protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material. If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter. Select a filter suitable for combined particulate/organic gases and vapours Type A/Type P boiling point > 65°C (149°F) meeting EN14387 and EN143.
Environmental exposure controls:	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Dark Amber. Liquid
Odour	Characteristic.
Odour threshold	Not available.
pH	~10.2. ~9.5 @ 5% dilution in water.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Flash point	>100 °C [Closed cup]

Evaporation rate	Not available.
Flammability	Not available.
Upper/lower flammability or explosive limits	Not available.
Vapour pressure	Not available.
Vapour density	Not available.
Relative density	0.985 @ 15°C
Solubility(ies)	Emulsifies in water.
Partition coefficient: n-octanol/water	Not available.
Auto-ignition temperature	Not available.
Decomposition Temperature	Not available.
Viscosity	>48 mm^2/s @ 40°C
Explosive properties	Not explosive
Oxidising properties	Not oxidising

9.2 Other information No information available.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity Stable. No specific test data available for this product.

10.2 Chemical stability Stable under normal conditions.

10.3 Possibility of hazardous reactions No hazardous reactions known if used for its intended purpose.

10.4 Conditions to avoid Should be kept away from naked flames and other sources of ignition.

10.5 Incompatible materials May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc

10.6 Hazardous decomposition products No hazard expected under normal conditions of use.
Combustion or thermal decomposition will evolve toxic and irritant vapours.
Decomposition products may include carbon oxides.; Sulphur oxides; oxides of phosphorus; Nitrogen oxides; Hydrogen chloride; Incomplete combustion products;

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity: No specific test data available for this product. Low toxicity expected under normal conditions of use. Based upon the available data, the classification criteria are not met. (Based on assessment of the components.)

Information on ingredients:-

Chemical Name	Value
2-phenoxythanol	LD50 (oral) mg/kg: 1850 (rat) LD50 (dermal) mg/kg: >5000 (rabbit)
2-aminoethanol	LD50 (oral) mg/kg: ~1720 (rat) LD50 (dermal) mg/kg: 1025 (rabbit)
Sulfonic acids, petroleum, sodium salts	LD50 (oral) mg/kg: >5000 (rat) LD50 (dermal) mg/kg: >5000 (rabbit)
Alcohols, C9-11, ethoxylated	(By analogy with similar materials) LD50 (oral) mg/kg: 3488 (rat) LD50 (dermal) mg/kg: >2000 (rabbit)
Alcohols, C11-14-iso-, C13-rich	LD50 (oral) mg/kg: >2000 (rat) LD50 (dermal) mg/kg: >2000 (rabbit)
Pyridine-2-thiol 1-oxide, sodium salt	LD50 (oral) mg/kg: 750 (rat) (calculated) LD50 (dermal) mg/kg:700 (rabbit) (calculated)

Skin corrosion/irritation: No specific test data available for this product. May cause irritation (Based on assessment of the components.)

Information on ingredients:-

Chemical Name	Value
2-phenoxythanol	Non-irritant (rabbit)
2-aminoethanol	Corrosive (rabbit)
Sulfonic acids, petroleum, sodium salts	Non-irritant (rabbit)
Alcohols, C9-11, ethoxylated	Non-irritant (rabbit) (By analogy with similar materials)
Alcohols, C11-14-iso-, C13-rich	Irritant (rabbit)
Pyridine-2-thiol 1-oxide, sodium salt	Irritant (rabbit)

Serious eye damage/irritation:

No specific test data available for this product. Causes severe eye irritation. May cause corneal damage. (Based on assessment of the components.)

Information on ingredients:-

Chemical Name	Value
2-phenoxythanol	Irritant (rabbit)
2-aminoethanol	Corrosive (rabbit)
Sulfonic acids, petroleum, sodium salts	Irritant
Alcohols, C9-11, ethoxylated	Severe irritant (rabbit) (By analogy with similar materials)
Alcohols, C11-14-iso-, C13-rich	Non-irritant (rabbit)
Pyridine-2-thiol 1-oxide, sodium salt	Irritant (rabbit)

Respiratory or skin sensitisation:

No specific test data available for this product. Not expected to be a sensitiser. (Based on assessment of the components.).

Information on ingredients:-

Chemical Name	Value
2-phenoxythanol	Sensitisation (guinea pig) - Negative
2-aminoethanol	Sensitisation (guinea pig) - Negative
Sulfonic acids, petroleum, sodium salts	Sensitisation (guinea pig) - Negative
Alcohols, C9-11, ethoxylated	Sensitisation (guinea pig) - Negative (By analogy with similar materials)
Alcohols, C11-14-iso-, C13-rich	Sensitisation (guinea pig) - Negative (By analogy with similar materials)
Pyridine-2-thiol 1-oxide, sodium salt	Sensitisation (guinea pig) - Negative

Germ cell mutagenicity:

No specific test data available for this product. No evidence of mutagenic effects. (Based on assessment of the components.)

Information on ingredients:-

Chemical Name	Value
2-phenoxythanol	Negative
2-aminoethanol	Negative (OECD 471 & OECD 474)
Sulfonic acids, petroleum, sodium salts	Negative (OECD 471)
Alcohols, C9-11, ethoxylated	Negative (By analogy with similar materials)
Alcohols, C11-14-iso-, C13-rich	Negative (By analogy with similar materials)
Pyridine-2-thiol 1-oxide, sodium salt	Negative (OECD 471)

Carcinogenicity:

IARC, NTP, OSHA, ACGIH do not list this product or any components thereof as known or suspected carcinogen.

Reproductive toxicity:

No specific test data available for this product. Based upon the available data, the classification criteria are not met. (Based on assessment of the components.)

Information on ingredients:-

Chemical Name	Value
2-phenoxythanol	NOAEL 375 mg/kg/day (rat)
2-aminoethanol	NOAEL 1000 mg/kg/day (OECD 416 (rat))
Sulfonic acids, petroleum, sodium salts	NOAEL 500 mg/kg/day (OECD 415 (rat))
Pyridine-2-thiol 1-oxide, sodium salt	NOAEL 3.5 mg/kg/day (EPA US EPA 83-4/OECD 416 (rat))

Specific target organ toxicity — single exposure:

No specific test data available for this product. Based upon the available data, the classification criteria are not met. (Based on assessment of the components.)

Information on ingredients:-

Chemical Name	Value
2-aminoethanol	May cause respiratory irritation

Specific target organ toxicity — repeated exposure:

No specific test data available for this product. Based upon the available data, the classification criteria are not met. (Based on assessment of the components.)

Aspiration hazard:

No specific test data available for this product. Based upon the available data, the classification criteria are not met. (Based on physico-chemical properties of the material.)

Additional Information:

No information available.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

No specific test data available for this product. May cause long lasting harmful effects to aquatic life. (Based on assessment of the components.)

Information on ingredients:-

Chemical Name	Value
2-phenoxythanol	344 mg/l LC50 (96 hour) (Pimephales promelas) >500 mg/l EC50 (48 hour) (Daphnia magna) > 500 mg/l EC50 (72 hour) (Desmodesmus subspicatus) 23 mg/l NOEC (34 days) (Pimephales promelas) 9.433 mg/l NOEC (21 days) (Daphnia magna)
2-aminoethanol	349 mg/l LC50, (96 hour) (Cyprinus carpio) 65 mg/l EC50, (48 hour) (Daphnia magna) 2.8 mg/l EC50, (72 hour) (Pseudokirchneriella subcapitata) 1.24 mg/l NOEC (41 days) (Oryzias latipes) 0.85 mg/l NOEC (21 days) (Daphnia magna)
Sulfonic acids, petroleum, sodium salts	>10000 mg/l LL50 (96 hour) (Cyprinodon variegatus) >1000 mg/l EC50 (48 hour) (Daphnia magna) > 1000 mg/l EC50 (72 hour) (Desmodesmus subspicatus)
Alcohols, C9-11, ethoxylated	(By analogy with similar materials) 5 - 7 mg/l LC50 (96 hour) (Oncorhynchus mykiss) 2.5 mg/l EC50 (48 hour) (Daphnia magna) 1.4 mg/l EC50 (72 hour) (Selenastrum capricornutum)
Alcohols, C11-14-iso-, C13-rich	0.42 mg/l LC50 (96 hour) (Oncorhynchus mykiss) 0.71 mg/l EC50 (48 hour) (Daphnia magna) 3.2 mg/l EC50 (72 hour) (Pseudokirchneriella subcapitata)

Pyridine-2-thiol 1-oxide, sodium salt	0.00264 mg/l LC50 (96 hour) (Oncorhynchus mykiss) (calculated)) 0.0088 mg/l EC50 (48 hour) (Daphnia magna) (calculated) 0.0012 mg/l EC50 (120 hour) (Skeletonema costatum) (By analogy with similar materials)

12.2 Persistence and degradability

No specific test data available for this product. Expected to be not readily biodegradable. Part of the components are poorly biodegradable.

Information on ingredients:-

Chemical Name	Value
2-phenoxythanol	>90%, 15 days (Biodegradability)
2-aminoethanol	93%, 28 days (Biodegradability)
Sulfonic acids, petroleum, sodium salts	8%, 28 days (Biodegradability)
Alcohols, C9-11, ethoxylated	(By analogy with similar materials): 72 - 100% (Biodegradability)
Alcohols, C11-14-iso-, C13-rich	61%, 28 days (Biodegradability)
Pyridine-2-thiol 1-oxide, sodium salt	Readily biodegradable
Highly refined mineral oil	2 - 31%, 28 days (Biodegradability)

12.3 Bioaccumulative potential

No specific test data available for this product.

Information on ingredients:-

Chemical Name	Value
2-phenoxythanol	0.349 (Bioconcentration factor (BCF)) (Calculated)
2-aminoethanol	4 L/Kg (Bioconcentration factor (BCF)) (Calculated)
Pyridine-2-thiol 1-oxide, sodium salt	50 (Bioconcentration factor (BCF))

12.4 Mobility in soil

No specific test data available for this product. Large volumes may penetrate soil and contaminate groundwater.

12.5 Results of PBT and vPvB assessment

This mixture does not contain any REACH registered substances that are assessed to be a PBT or a vPvB.

12.6 Other adverse effects

No information available.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product:

Dispose of via an authorised person/ licensed waste disposal contractor in accordance with local regulations. Waste product should not be allowed to contaminate soil or ground water, or be disposed of into the environment. This material is considered as hazardous waste pursuant to Directive 91/689/EEC on hazardous waste, and subject to the provisions of that Directive unless Article 1(5) of that Directive applies.
Classification of waste is always the responsibility of the end user.

Packaging waste:

This material and its container must be disposed of in a safe way. Dispose of this material and its container as hazardous waste. Empty containers or liners may retain some product residues. Dispose of via an authorised person/ licensed waste disposal contractor in accordance with local regulations.

SECTION 14: TRANSPORT INFORMATION

		ADR/RID	AND/ADNR	IMDG	IATA
		Not classified as dangerous for transport.			
14.1	**UN number**	None	None	None	None

14.2	**UN proper shipping name**	Not applicable	Not applicable	Not applicable	Not applicable
14.3	**Transport hazard class(es)**	Not applicable	Not applicable	Not applicable	Not applicable
14.4	**Packing group**	Not applicable	Not applicable	Not applicable	Not applicable
14.5	**Environmental hazards**	Not applicable	Not applicable	Not applicable	Not applicable
14.6	**Special precautions for user**	No information available.	No information available.	No information available.	No information available.

14.7 Transport in bulk according to Annex II of Marpol 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 Regulation (EC) No. 1907/2006 (REACH):	REACH Status:	The company, as identified in Section 1, sells this product in the EU in compliance with the current requirements of REACH.
	REACH: ANNEX XIV list of substances subject to authorisation:	Not listed
	Candidate List of Substances of Very High Concern for Authorisation:	Not listed
	REACH: Annex XVII Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles:	Not applicable

15.2 Chemical Safety Assessment A REACH chemical safety assessment has not been carried out.

SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: Original safety data sheet - no previous versions

Classification procedure Calculation method. Based on assessment of the components.

Full text of abbreviated H statements

H302: Harmful if swallowed.
H311: Toxic in contact with skin.
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.
H400: Very toxic to aquatic life.
H410: Very toxic to aquatic life with long lasting effects.
H411: Toxic to aquatic life with long lasting effects.
H412: Harmful to aquatic life with long lasting effects.

Abbreviations and Acronyms

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
CAS: Chemical Abstracts Service
DNEL: Derived No Effect Level
IATA: International Air Transport Association Association
IBC: Intermediate Bulk Container
IMDG: International Maritime Dangerous Goods

LogPow: logarithm of the octanol/water partition coefficient
MARPOL: International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. (Marpol = marine pollution)
PBT: Persistent, Bioaccumulative and Toxic
PNEC: Predicted No Effect Concentration
RID:Regulations concerning the International Carriage of Dangerous Goods by Rail
UN: United Nations
VPvB: very Persistent and very Bioaccumulative

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. The data and advice given apply when the product is sold for the stated application or applications. It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations.