

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

1.1 Product Identifier

Product Form	Mixture
Product Name	Ebble Surface Energy Test Fluids - Type A (Purple) (ISO8296)
Product Information	This safety data sheet covers surface test inks, according to ISO8296 ranging from 30 dynes/cm to 72 dynes/cm. Not all values contain all risks, however, they should be treated as the worst case.

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

1.2.1 Relevant Identified Uses

Main use category	Professional and Industrial use only
Use of substance/ mixture	Surface Energy Test Fluid

1.2.2 Uses advised against

No additional information

1.3 Details of the supplier of the safety data sheet

Company	Ebble Ltd
Address	40a Crossgate Road, Park Farm Industrial Estate, Redditch, B98 7SN
Phone Number (office hours)	01527 304004
Email Address	info@tantec-uk.com

Section 2: Hazards Identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Flammable liquids (Category 3), H226

Acute toxicity, Oral (Category 4), H302

Acute toxicity, Inhalation (Category 3), H331

Carcinogenicity (Category 2), H351

Reproductive toxicity (Category 1B), H360FD

Specific target organ toxicity - repeated exposure, Oral (Category 2), Blood, H373

For the full text of the H-Statements mentioned in this Section, see Section 16

2.2 Label Elements

Classification according to Regulation (EC) No 1272/2008

Pictograms



Signal Word

Danger

Hazard Statements

H226	Flammable liquid and vapor
H302	Harmful if swallowed
H331	Toxic if inhaled
H351	Suspected of causing cancer
H360D	May damage the unborn child

Ebble Group Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Surface Energy Test Fluids - Type A

H360FD	May damage fertility. May damage the unborn child.
H373	May cause damage to organs (Blood) through prolonged or repeated exposure if swallowed
Precautionary Statements	
P201	Obtain special instructions before use
P202	Do not handle until all safety precautions have been read and understood
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P233	Keep container tightly closed
P260	Do not breathe dust/ fume/ gas/ mist/ vapors/ spray
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection
P301 + P312	IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell
P304 + P340 + P311	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor
P308 + P313	IF exposed or concerned: Get medical advice/ attention
P405	Store locked up
Supplemental Haz Statement	
None	

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

3.1 Substances

Name	Formamide
Formula	CH3NO
Molecular Weight	45.04 g/mol
CAS-No	75-12-7
EC-No	200-842-0
Index-No	616-052-00-8

Formamide Included in the Candidate List of Substances of Very High Concern (SVHC)
according to Regulation (EC) No. 1907/2006 (REACH)

Classification	Carc. 2; Repr. 1B; STOT; RE 2; H351, H360D, H373
Concentration	<=100%

Name	2-ethoxyethanol
Formula	C4H10O2
Molecular Weight	90.12 g/mol
CAS-No	110-80-5
EC-No	203-804-1
Index-No	603-012-00-X

2-Ethoxyethanol Included in the Candidate List of Substances of Very High Concern
(SVHC) according to Regulation (EC) No. 1907/2006 (REACH)

Classification	Flam. Liq. 3; Acute Tox. 4; Acute Tox. 3; Repr. 1B; H226, H302, H331, H360FD
Concentration	<=100%

Section 4: First Aid Measures

4.1 Description of First Aid Measures

General advice	First aiders need to protect themselves. Show this safety data sheet to the doctor in attendance
If inhaled	After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen
In case of skin contact	In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower. Consult a physician.
In case of eye contact	After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses
If swallowed	After swallowing: immediately make victim drink water (two glasses at most). Consult a physician

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

Section 5: Firefighting Measures

5.1 Extinguishing Media

Suitable extinguishing media Water, Foam, Carbon dioxide (CO₂), Dry powder
Unsuitable extinguishing media For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Carbon oxides

Nitrogen oxides (NO_x) Combustible.

Fire may cause evolution of:

Hydrogen cyanide (hydrocyanic acid), nitrogen oxides, Ammonia Vapors are heavier than air and may spread along floors.

Forms explosive mixtures with air at elevated temperatures.

Development of hazardous combustion gases or vapours possible in the event of fire

5.3 Advice for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

5.4 Further information

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

Section 6: Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

6.2 Environmental Precautions

Do not let product enter drains. Risk of explosion

6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

6.4 Reference to other sections

For disposal see section 13.

Section 7: Handling and Storage

7.1 Precautions for safe handling

Advice on safe handling	Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.
Advice on protection against fire and explosion	Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.
Hygiene measures	Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance. For precautions see section 2.2

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions	Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Keep locked up or in an area accessible only to qualified or authorised persons.
Storage class	Storage class (TRGS 510): 3: Flammable liquids

7.3 Specific end use(s)

Test inks according to ISO8296 and similar standards only.

Section 8: Exposure controls/personal protection

8.1 Control Parameters

Ingredients with workplace control parameters

Component	CAS No	Value	Control Param.	Basis	
2-ethoxyethanol	110-80-5	TWA	2ppm - 8mg/m3	UK. EH40 WEL	
			2ppm - 8mg/m3	Europe. COMMISSION DIRECTIVE 2009/161/EU establishing a third list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC and amending Commission Directive 2000/39/EC	
				Can be absorbed through the skin. There are concerns that dermal absorption will lead to systemic toxicity. Identifies the possibility of significant uptake through skin - indicative.	
Formamide	75-12-7	TWA	20ppm - 37mg/m3	UK. EH40 WEL	
		STEL	30 ppm - 56 mg/m3	UK. EH40 WEL	

8.2 Exposure controls

Personal protective equipment

Eye/face protection	Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses
	Protective gloves should be used at all times. Full contact gloves tested
	Material: butyl-rubber
Skin protection	Minimum layer thickness: 0.7 mm
	Break through time: 480 min
	Material tested: Butoject® (KCL 898)
Body Protection	Flame retardant antistatic protective clothing
	Recommended Filter type: Filter A (acc. to DIN 3181) for vapours of organic compounds
Respiratory protection	The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.
Control of environmental exposure	Do not let product enter drains. Risk of explosion.

Section 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties (range of mixtures)

Appearance	Blue/ Purple liquid
Odor	Ether-like to odorless
Odor Threshold	No data available
pH	4 - 10
Melting point/ freezing point	-70C to 2.6C
Initial boiling point and boiling range	133C to 218C
Flash point	40C to 152C
Evaporation rate	No data available
Flammability (Solid, gas)	No data available
Upper/ lower flammability or explosive limits	Upper explosion limit 14% to 19% (V) Lower explosion limit 1.8% to 2.7% (V)
Vapour pressure	0.08 to 7.51 hPa at 25C
Vapour density	1.56 to 3.1
Density and relative density	0.93g/cm ³ to 1.13 g/cm ³
Water solubility	Soluble/ miscible
Partition coefficient: n-octanol/ water	log Pow: 0.32 - Bioaccumulation is not expected., (ECHA) log Pow: -0.82 at 25 °C - Bioaccumulation is not expected
Autoignition temperature	235C to >500C
Decomposition	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidising properties	No data available

9.2 Other Safety Information

Dissociation constant	-0.48 to 14.8 (20C)
Relative Vapour Density	1.56 to 3.1

Section 10: Stability and Reactivity

10.1 Reactivity

Vapor/air-mixtures are explosive at intense warming.

10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature). Contains the following stabilizer(s): butyl hydroxytoluene (BHT) (0.005 %)

10.3 Possibility of hazardous reactions

Exothermic reaction with:

Oxidizing agents
bases

Risk of explosion with:

furfuryl alcohol
Oxides of phosphorus
hydrogen peroxide
iodine
pyridine
Sulfur trioxide

A risk of explosion and/or of toxic gas formation exists with the following substances:

water separating agents
Air

Possible formation of:

Hydrogen cyanide (hydrocyanic acid)

Risk of ignition or formation of inflammable gases or vapours with:

Light metals
Aluminum

Violent reactions possible with:

Oxidizing agents
bases
Acids
Zinc

10.4 Conditions to avoid

May form peroxides on contact with air. Heating

10.5 Incompatible materials

Copper, Light metals, Aluminium

10.6 Hazardous decomposition products

Peroxides

In the event of fire, see section 5

Section 11: Toxicological Information

11.1 Information on toxicological effects

Acute Toxicity	Acute toxicity estimate Oral - 1,401 mg/kg (Calculation method) LD50 Oral - Guinea pig - male and female - 1,400 mg/kg Remarks: (Regulation (EC) No 1272/2008, Annex VI) (ECHA)
	Acute toxicity estimate Inhalation - 4 h - 3 mg/l - vapor (Calculation method) LC50 Inhalation - Rat - female - 4 h - 14.72 mg/l - vapor (Calculation method) Remarks: (ECHA) (Regulation (EC) No 1272/2008, Annex VI) LD50 Dermal - Rabbit - male - 3,271 mg/kg Remarks: (ECHA)
	Skin - Rabbit Result: No skin irritation - 4 h (OECD Test Guideline 404)
	Eyes - Rabbit Result: slight irritation - 1 h (Draize Test)
	Maximization Test - Guinea pig Result: negative (OECD Test Guideline 406)
Test Type: Ames test Test system: Escherichia coli/Salmonella typhimurium Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative	
Test Type: in vitro test Test system: Other cell types Metabolic activation: without metabolic activation Method: Regulation (EC) No. 440/2008, Annex, B.21 Result: positive	
Germ cell mutagenicity	Test Type: in vitro test Test system: Embryo Metabolic activation: without metabolic activation Result: negative Remarks: (ECHA)
	Test Type: In vivo micronucleus test Species: Mouse Cell type: Red blood cells (erythrocytes) Application Route: Oral Method: OECD Test Guideline 474 Result: negative

Test Type: In vivo micronucleus test
Species: Mouse
Cell type: Bone marrow
Application Route: Intraperitoneal injection
Method: OECD Test Guideline 474
Result: positive
Test Type: Genotoxicity in vivo
Species: Drosophila melanogaster
Application Route: Intraperitoneal injection
Method: OECD Test Guideline 477
Result: negative
Test Type: dominant lethal test
Species: Mouse
Application Route: Intraperitoneal injection
Method: OECD Test Guideline 478
Result: negative

Germ cell mutagenicity (Cont)

Carcinogenicity	No data available
Reproductive toxicity	May damage the unborn child. May damage fertility
Specific target organ toxicity - single exposure	No data available
Specific target organ toxicity - repeated expo	Oral - May cause damage to organs through prolonged or repeated exposure. - Blood
Aspiration hazard	No data available

11.2 Additional Information

Repeated dose toxicity - Rat - male and female - Oral - 90 d - NOAEL (No observed adverse effect level) - 40 - 80 mg/kg
Remarks: Subchronic toxicity
Repeated dose toxicity - Rat - male - Inhalation - 14 Days
Repeated dose toxicity - Rat - male and female - Dermal - 90 d - NOAEL (No observed adverse effect level) - 100 mg/kg
Gastrointestinal disturbance
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
Possible effect after contact with substance:
ataxia (impaired locomotor coordination)
Absorption may result in damage of the following:
Liver
Kidney
Other dangerous properties can not be excluded.
Handle in accordance with good industrial hygiene and safety practice.
Blood - Irregularities - Based on Human Evidence

Section 12: Ecological information

12.1 Toxicity

Toxicity to fish	static test LC50 - Leuciscus idus (Golden orfe) - 6,569 mg/l - 96 h (DIN 38412 part 15)
Toxicity to daphnia and other aquatic invertebrates	static test EC50 - Daphnia magna (Water flea) - > 500 mg/l - 48 h (Regulation (EC) No. 440/2008, Annex, C.2)
Toxicity to algae	static test ErC50 - Desmodesmus subspicatus (green algae) - > 500 mg/l - 96 h (DIN 38412)
Toxicity to bacteria	static test EC50 - activated sludge - > 1,000 mg/l - 30 min (OECD Test Guideline 209)

12.2 Persistence and Degradability

Biodegradability	aerobic - Exposure time 14 d Result: 63 - 83 % - Readily biodegradable. (OECD Test Guideline 301C)
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12.3 Bioaccumulative potential

No data 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 Endocrine disrupting properties

The mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

Endangers drinking-water supplies if allowed to enter soil and/or waters in large quantities. No interference with wastewater treatment plants are to be expected when used properly. Discharge into the environment must be avoided.

Section 13: Disposal Considerations

13.1 Waste treatment methods

Notice Directive on waste 2008/98/EC. Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself. See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

Section 14: Transport information

14.1 UN number

ADR/RID: 1171

IMDG: 1171

IATA: 1171

14.2 UN proper shipping name

ADR/RID:	ETHYLENE GLYCOL MONOETHYL ETHER
IMDG:	ETHYLENE GLYCOL MONOETHYL ETHER
IATA:	ETHYLENE GLYCOL MONOETHYL ETHER

14.3 Transport hazard class(es)

ADR/RID: 3

IMDG: 3

IATA: 3

14.4 Packaging Group

ADR/RID: III

IMDG: III

IATA: III

14.5 Environmental Hazards

ADR/RID: no

IMDG: no

IATA: no

14.6 Special Precautions

No data available

Section 15: Regulatory information

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

This material safety data sheet complies with the requirements of Regulation (EC) No.1907/2006.

The following statements apply to both Formamide and 2-ethoxyethanol:

Authorisations and/or
restrictions on use

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).
REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII)

National legislation

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances: Acute Toxic and Flammable Liquids

Other regulations

Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable. Dir 94/33/EC the protection of young people at work.

15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out

Section 16: Other information

Full text of H-Statements referred to under sections 2 and 3.

Hazard Statements

H226	Flammable liquid and vapor
H302	Harmful if swallowed
H331	Toxic if inhaled
H351	Suspected of causing cancer
H360D	May damage the unborn child
H360FD	May damage fertility. May damage the unborn child.
H373	May cause damage to organs (Blood) through prolonged or repeated exposure if swallowed

Precautionary Statements

P201	Obtain special instructions before use
P202	Do not handle until all safety precautions have been read and understood
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P233	Keep container tightly closed
P260	Do not breathe dust/ fume/ gas/ mist/ vapors/ spray
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection
P301 + P312	IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell

Ebble Group Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Surface Energy Test Fluids - Type A

P304 + P340 + P311	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor
P308 + P313	IF exposed or concerned: Get medical advice/ attention
P405	Store locked up

Further Information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Ebble Ltd and its affiliates shall not be held liable for any damage resulting from handling or from contact with the above product.