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

1.1. Product identifier

TUNPAS CU 1kg D-GB-F-I-E-PL Kupferpaste

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

Use of the substance/mixture

Lubricant

1.3. Details of the supplier of the safety data sheet

Manufacturer

Company name:	TUNAP GmbH & Co. KG	
Street:	Bürgermeister-Seidl-Str. 2	
Place:	D-82515 Wolfratshausen	
Telephone:	+ 49 (0) 8171/1600 - 0	Telefax: + 49 (0) 8171/1600 - 40
e-mail:	sdb@tunap.com	
Internet:	www.tunap.com	

Supplier

Company name:	TUNAP UK Limited
Street:	Unit L4 Deacon Trading Estate, Morley Road
Place:	GB Tonbridge, Kent. TN9 1RA
Telephone:	+44 (0)1732 365163
e-mail:	sdb@tunap.com
Internet:	www.tunap.co.uk

1.4. Emergency telephone number:

111 NHS (National Health Service)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Hazard categories:
Hazardous to the aquatic environment: Aquatic Acute 1
Hazardous to the aquatic environment: Aquatic Chronic 3
Hazard Statements:
Very toxic to aquatic life.
Harmful to aquatic life with long lasting effects.

2.2. Label elements

Regulation (EC) No. 1272/2008

Signal word: Warning

Pictograms:

Hazard statements

H400	Very toxic to aquatic life.
H412	Harmful to aquatic life with long lasting effects.

Precautionary statements

P273	Avoid release to the environment.
P391	Collect spillage.
P501	Dispose of contents/container according to the official regulations.

Special labelling of certain mixtures

EUH208 Contains Benzenesulfonic acids, di-C10-14-alkyl derivatives, calcium salts. May produce an allergic reaction.

2.3. Other hazards

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	GHS Classification			
7440-50-8	copper powder			10 - < 20 %
	231-159-6		01-2119480154-42	
	Acute Tox. 4, Aquatic Acute 1, Aquatic Chronic 2; H302 H400 H411			
1471316-72-9	Benzenesulfonic acids, di-C10-14-alkyl derivatives, calcium salts			0.1 - < 1 %
	939-603-7		01-2119978241-36	
	Skin Sens. 1B; H317			
70024-69-0	Benzenesulfonic acid, mono-C16-24-alkyl derivs., calcium salts			0.1 - < 1 %
	274-263-7		01-2119492616-2	
	Skin Sens. 1B; H317			

Full text of H and EUH statements: see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

First aider: Pay attention to self-protection! Remove persons to safety. Never give anything by mouth to an unconscious person or a person with cramps.

After inhalation

Remove person to fresh air and keep comfortable for breathing. In all cases of doubt, or when symptoms persist, seek medical advice.

After contact with skin

Wash with plenty of water and soap. Take off immediately all contaminated clothing and wash it before reuse. In all cases of doubt, or when symptoms persist, seek medical advice.

After contact with eyes

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. In case of troubles or persistent symptoms, consult an ophthalmologist.

After ingestion

Do NOT induce vomiting. Observe risk of aspiration if vomiting occurs. Call a physician in any case!

4.2. Most important symptoms and effects, both acute and delayed

Headache, nausea, dizziness, fatigue, skin irritation

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically. Call a POISON CENTER. Symptoms can occur only after several hours.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Water fog. Foam. Carbon dioxide (CO2). Extinguishing powder.

Unsuitable extinguishing media

High power water jet.

5.2. Special hazards arising from the substance or mixture

Incomplete combustion and thermolysis gases of different toxicity can occur. In the case of hydrocarbonaceous products such as CO, CO2, aldehydes and soot. These can be very dangerous if they are inhaled in high concentrations or in enclosed spaces.

5.3. Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Move undamaged containers from immediate hazard area if it can be done safely. In case of fire: Wear self-contained breathing apparatus.

Additional information

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Wear breathing apparatus if exposed to vapours/dusts/aerosols. Remove all sources of ignition. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Wear personal protection equipment.

6.2. Environmental precautions

Do not allow to enter into surface water or drains. Prevent spread over a wide area (e.g. by containment or oil barriers). Ensure all waste water is collected and treated via a waste water treatment plant.

6.3. Methods and material for containment and cleaning up

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Clean contaminated articles and floor according to the environmental legislation.

6.4. Reference to other sections

Safe handling: see section 7
Personal protection equipment: see section 8
Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Observe instructions for use.
Dust must be exhausted directly at the point of origin. Vapours/aerosols must be exhausted directly at the point of origin. If local exhaust ventilation is not possible or not sufficient, the entire working area should be ventilated by technical means.
When using do not eat, drink, smoke, sniff.
Wear personal protection equipment (refer to section 8).

Advice on protection against fire and explosion

Keep away from sources of ignition - No smoking.

Further information on handling

Avoid contact with skin and eyes.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed. Observe legal regulations and provisions.

Hints on joint storage

Do not store together with: Oxidizing agents. Pyrophoric or self-heating substances. Food and feedingstuffs.

Further information on storage conditions

Store in a cool dry place. Observe legal regulations and provisions.

7.3. Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m³	fibres/ml	Category	Origin
7440-50-8	Copper, dusts and mists (as Cu)	-	1		TWA (8 h)	WEL
		-	2		STEL (15 min)	WEL
1332-58-7	Kaolin respirable dust	-	2		TWA (8 h)	WEL

DNEL/DMEL values

CAS No	Substance		
DNEL type	Exposure route	Effect	Value
1471316-72-9	Benzenesulfonic acids, di-C10-14-alkyl derivatives, calcium salts		
Worker DNEL, long-term	inhalation	systemic	35,26 mg/m³
Worker DNEL, long-term	dermal	systemic	25 mg/kg bw/day
Worker DNEL, acute	dermal	local	1,04 mg/cm²
Consumer DNEL, long-term	inhalation	systemic	8,7 mg/m³
Consumer DNEL, long-term	dermal	systemic	12,5 mg/kg bw/day
Consumer DNEL, acute	dermal	local	0,518 mg/cm²
Consumer DNEL, long-term	oral	systemic	2,5 mg/kg bw/day
70024-69-0	Benzenesulfonic acid, mono-C16-24-alkyl derivs., calcium salts		
Worker DNEL, long-term	inhalation	systemic	11,75 mg/m³
Worker DNEL, long-term	dermal	systemic	3,33 mg/kg bw/day
Worker DNEL, long-term	dermal	local	1,03 mg/cm²
Consumer DNEL, long-term	inhalation	systemic	2,9 mg/m³
Consumer DNEL, long-term	dermal	systemic	1,667 mg/kg bw/day
Consumer DNEL, long-term	dermal	local	0,513 mg/cm²
Consumer DNEL, long-term	oral	systemic	0,833 mg/kg bw/day

PNEC values

CAS No	Substance
Environmental compartment	Value
1471316-72-9	Benzenesulfonic acids, di-C10-14-alkyl derivatives, calcium salts
Freshwater	0,1 mg/l
Freshwater (intermittent releases)	1 mg/l
Marine water	0,1 mg/l
Freshwater sediment	45211 mg/kg
Marine sediment	45211 mg/kg
Micro-organisms in sewage treatment plants (STP)	1000 mg/l
Soil	36739,74 mg/kg
70024-69-0	Benzenesulfonic acid, mono-C16-24-alkyl derivs., calcium salts
Freshwater	1 mg/l
Freshwater (intermittent releases)	10 mg/l
Marine water	1 mg/l
Freshwater sediment	226000000 mg/kg
Marine sediment	226000000 mg/kg
Secondary poisoning	16,667 mg/kg
Micro-organisms in sewage treatment plants (STP)	1000 mg/l
Soil	271000000 mg/kg

Additional advice on limit values

a no restriction
b End of exposure or end of shift
c at long term exposure: after several previous shifts
d before next shift

blood (B)
Urine (U)

8.2. Exposure controls

Appropriate engineering controls

If handled uncovered, arrangements with local exhaust ventilation have to be used.

Protective and hygiene measures

Avoid exposure. Wear suitable protective clothing. Draw up and observe skin protection programme.

Eye/face protection

Suitable eye protection: Tightly sealed safety glasses.
DIN EN 166

Hand protection

Protect skin by using skin protective cream. When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances.
Suitable material: NBR (Nitrile rubber) Breakthrough time (maximum wearing time) 480min
Thickness of the glove material 0,45 mm
EN ISO 374

Skin protection

Wear suitable protective clothing. Take off immediately all contaminated clothing and wash it before reuse.

Respiratory protection

Wear breathing apparatus if exposed to vapours/dusts/aerosols.
When exceeding the relevant workplace exposure limits, note the following:
Suitable respiratory protective equipment: Combination filter device (DIN EN 141)..
Filtering device with filter or ventilator filtering device of type: A
Observe the wear time limits as specified by the manufacturer.
Observe legal regulations and provisions.

Environmental exposure controls

Observe legal regulations and provisions.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	Paste
Colour:	copper
Odour:	characteristic

		Test method
pH-Value (at 20 °C):	not applicable	
Changes in the physical state		
Melting point:	No information available.	
Initial boiling point and boiling range:	240 °C	
Sublimation point:	No information available.	
Softening point:	No information available.	
Flash point:	> 150 °C	ISO 3679
Flammability		
Solid:	not determined	
Gas:	not applicable	
Lower explosion limits:	0,6 vol. %	
Upper explosion limits:	6,5 vol. %	
Ignition temperature:	No information available.	
Auto-ignition temperature		
Solid:	not determined	
Gas:	not applicable	
Decomposition temperature:	not determined	
Oxidizing properties		
Not oxidising.		
Vapour pressure:	No information available.	
Density (at 20 °C):	1,1975 g/cm³	DIN 51757
Water solubility:	The study does not need to be conducted because the substance is known to be insoluble in water.	
Solubility in other solvents		
not determined		
Partition coefficient:	No information available.	
Viscosity / dynamic:	No information available.	DIN 53019-1
Viscosity / kinematic: (at 40 °C)	No information available.	DIN EN ISO 3104

Flow time: (at 20 °C)	No information available.	DIN EN ISO 2431
Vapour density:	No information available.	
Evaporation rate:	No information available.	
Solvent separation test:	No information available.	
Solvent content:	No information available.	

9.2. Other information

Solid content:	No information available.

SECTION 10: Stability and reactivity

10.1. Reactivity

No information available.

10.2. Chemical stability

The product is stable under normal conditions.

10.3. Possibility of hazardous reactions

No hazardous reaction when handled and stored according to provisions.

10.4. Conditions to avoid

Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Take precautionary measures against static discharges.

10.5. Incompatible materials

Oxidizing agents. Pyrophoric or self-heating substances.

10.6. Hazardous decomposition products

Incomplete combustion and thermolysis gases of different toxicity can occur . In the case of hydrocarbonaceous products such as CO, CO2, aldehydes and soot. These can be very dangerous if they are inhaled in high concentrations or in enclosed spaces.

Further information

Do not mix with other chemicals.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicocinetics, metabolism and distribution

No information available.

Acute toxicity

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

CAS No	Chemical name			
	Exposure route	Dose	Species	Source
7440-50-8	copper powder			
	oral	LD50 300 - 500 mg/kg	Rat	Study report (2001)
	dermal	LD50 > 2000 mg/kg	Rat	Study report (2001)
	inhalation (4 h) aerosol	LC50 >5 mg/l	Rabbit	
1471316-72-9	Benzenesulfonic acids, di-C10-14-alkyl derivatives, calcium salts			
	oral	LD50 > 10000 - < 20000 mg/kg	Rat	Study report (1972)
	dermal	LD50 > 2000 mg/kg	Rat	Study report (1989)
70024-69-0	Benzenesulfonic acid, mono-C16-24-alkyl derivs., calcium salts			
	oral	LD50 > 16000 mg/kg	Rat	Study report (1981)
	dermal	LD50 > 4000 mg/kg	Rabbit	Study report (1986)
	inhalation (4 h) aerosol	LC50 >5 mg/l	Rat	

Irritation and corrosivity

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

Sensitising effects

Contains Benzenesulfonic acids, di-C10-14-alkyl derivatives, calcium salts. May produce an allergic reaction.

Carcinogenic/mutagenic/toxic effects for reproduction

Based on available data, the classification criteria are not met.
No indications of human carcinogenicity exist.
No indications of human germ cell mutagenicity exist.
No indications of human reproductive toxicity exist.

STOT-single exposure

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

STOT-repeated exposure

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

Aspiration hazard

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

Specific effects in experiment on an animal

No information available.

Additional information on tests

The mixture is classified as not hazardous according to regulation (EC) No 1272/2008 [CLP].

SECTION 12: Ecological information

12.1. Toxicity

Harmful to aquatic life with long lasting effects.

CAS No	Chemical name					
	Aquatic toxicity	Dose		[h] | [d]	Species	Source
7440-50-8	copper powder					
	Acute fish toxicity	LC50	0,193 mg/l	96 h	Pimephales promelas	Study report (1996)
	Acute algae toxicity	ErC50	0,152 mg/l	72 h	Pseudokirchneriella subcapitata	Publication (2005)
	Acute crustacea toxicity	EC50	0,011 mg/l	48 h	Daphnia magna	Study report (1978)
	Fish toxicity	NOEC	0,123 mg/l	12 d	Atherinops affinis	Mar. Environ. Res. 3
	Algae toxicity	NOEC	0,0102 mg/l	19 d	other aquatic plant: giant kelp Macrocystis pyrife	Mar. Ecol. Prog. Ser
	Crustacea toxicity	NOEC	0,033 mg/l	14 d	Penaeus mergulensis and Penaeus monodon	Bull. Environ. Conta
1471316-72-9	Benzenesulfonic acids, di-C10-14-alkyl derivatives, calcium salts					
	Acute fish toxicity	LC50	> 100 mg/l	96 h	Oncorhynchus mykiss (Rainbow trout)	
	Acute algae toxicity	ErC50	> 1000 mg/l	72 h	Pseudokirchneriella subcapitata	Study report (1994)
	Acute crustacea toxicity	EC50	> 1000 mg/l	48 h	Daphnia magna	Study report (1993)
	Acute bacteria toxicity	(> 10000 mg/l)		3 h	activated sludge of a predominantly domestic sewag	Study report (1994)
70024-69-0	Benzenesulfonic acid, mono-C16-24-alkyl derivs., calcium salts					
	Acute fish toxicity	LC50	>10000 mg/l	96 h	Oncorhynchus mykiss (Rainbow trout)	
	Acute algae toxicity	ErC50	> 1000 mg/l	72 h	Pseudokirchneriella subcapitata	REACh Registration Dossier
	Acute crustacea toxicity	EC50	> 1000 mg/l	48 h	Daphnia magna	REACh Registration Dossier
	Acute bacteria toxicity	(> 10000 mg/l)		3 h	activated sludge of a predominantly domestic sewag	REACh Registration Dossier

12.2. Persistence and degradability

The product has not been tested. There are no data available on the mixture itself. AOX (mg/l): 0

12.3. Bioaccumulative potential

There are no data available on the mixture itself.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
1471316-72-9	Benzenesulfonic acids, di-C10-14-alkyl derivatives, calcium salts	> 6,91
70024-69-0	Benzenesulfonic acid, mono-C16-24-alkyl derivs., calcium salts	18,05

BCF

CAS No	Chemical name	BCF	Species	Source
7440-50-8	copper powder	0,02 - 20	Crangon crangon	Symp. Biologica. Hun
1471316-72-9	Benzenesulfonic acids, di-C10-14-alkyl derivatives, calcium salts	70,8	Fish, not further specified.	Study report (2013)

12.4. Mobility in soil

No information available.

12.5. Results of PBT and vPvB assessment

This substance does not meet the criteria for classification as PBT or vPvB.

12.6. Other adverse effects

No information available.

Further information

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

Do not allow to enter into surface water or drains. Dispose of waste according to applicable legislation.

List of Wastes Code - residues/unused products

120112 WASTES FROM SHAPING AND PHYSICAL AND MECHANICAL SURFACE TREATMENT OF METALS AND PLASTICS; wastes from shaping and physical and mechanical surface treatment of metals and plastics; spent waxes and fats; hazardous waste

List of Wastes Code - used product

120112 WASTES FROM SHAPING AND PHYSICAL AND MECHANICAL SURFACE TREATMENT OF METALS AND PLASTICS; wastes from shaping and physical and mechanical surface treatment of metals and plastics; spent waxes and fats; hazardous waste

List of Wastes Code - contaminated packaging

150110 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); packaging containing residues of or contaminated by hazardous substances; hazardous waste

Contaminated packaging

Water (with cleaning agent). Completely emptied packages can be recycled.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number:	UN 3077
14.2. UN proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper)
14.3. Transport hazard class(es):	9
14.4. Packing group:	III
Hazard label:	9
Classification code:	M7
Special Provisions:	274 335 375 601
Limited quantity:	5 kg
Excepted quantity:	E1
Transport category:	3
Hazard No:	90
Tunnel restriction code:	-

Inland waterways transport (ADN)

14.1. UN number:	UN 3077
14.2. UN proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper)
14.3. Transport hazard class(es):	9
14.4. Packing group:	III
Hazard label:	9
Classification code:	M7

Special Provisions:	274 335 375 601
Limited quantity:	0
Excepted quantity:	E1

Marine transport (IMDG)

14.1. UN number:	UN 3077
14.2. UN proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper)
14.3. Transport hazard class(es):	9
14.4. Packing group:	III
Hazard label:	9
Marine pollutant:	yes
Special Provisions:	274, 335, 966, 967, 969
Limited quantity:	5 kg
Excepted quantity:	E1
EmS:	F-A, S-F

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number:	UN 3077
14.2. UN proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper)
14.3. Transport hazard class(es):	9
14.4. Packing group:	III
Hazard label:	9
Special Provisions:	A97 A158 A179 A197
Limited quantity Passenger:	30 kg G
Passenger LQ:	Y956
Excepted quantity:	E1
IATA-packing instructions - Passenger:	956
IATA-max. quantity - Passenger:	400 kg
IATA-packing instructions - Cargo:	956
IATA-max. quantity - Cargo:	400 kg

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS:	Yes
Danger releasing substance:	Copper

14.6. Special precautions for user

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 regulatory information

2010/75/EU (VOC):	No information available.
2004/42/EC (VOC):	No information available.

Additional information

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)

National regulatory information

Employment restrictions:	Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC).
Water hazard class (D):	1 - slightly hazardous to water
Skin resorption/Sensitization:	Causes allergic hypersensitivity reactions.

15.2. Chemical safety assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IATA: International Air Transport Association
IMDG: International Maritime Code for Dangerous Goods
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
DNEL/DMEL: Derived No Effect Level / Derived Minimal Effect Level
WEL (UK): Workplace Exposure Limits
TWA (EC): Time-Weighted Average
ATE: Acute Toxicity Estimate
STEL (EC) Short Term Exposure Limit
LC50: Lethal Concentration
EC50: half maximal Effective Concentration
ErC50: means EC50 in terms of reduction of growth rate

Relevant H and EUH statements (number and full text)

H302	Harmful if swallowed.
H317	May cause an allergic skin reaction.
H400	Very toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
EUH208	Contains Benzenesulfonic acids, di-C10-14-alkyl derivatives, calcium salts. May produce an allergic reaction.

Further Information

Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]: Calculation method.
The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)