

Commercial Product Name: **Kjeldahl Tablets Missouri**

Revision date: 17.09.2013

Article-No.: 11057982

Version: 1.0/en

Print date: 17.09.2013

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**Commercial Product Name **Kjeldahl Tablets Missouri****1.2 Relevant identified uses of the substance or mixture and uses advised against**

Relevant identified uses Use as laboratory reagent

1.3 Details of the supplier of the safety data sheetCompany designation BÜCHI Labortechnik AG
Meierseggstrasse 40
CH - 9230 Flawil
Telephone: +41 71 394 63 63
FAX: +41 71 394 65 65
Email: schweiz@buchi.com
Internet: www.buchi.com

E-mail (competent person) kjeldahl.application@buchi.com

1.4 Emergency telephone numberEmergency telephone number Swiss Toxicological Information Centre: in Switzerland: 145, from
abroad: +41 44 251 51 51 (24 h)**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture**Classification according to Reg- Aquatic Chronic 2; H411
ulation (EC) No. 1272/2008Classification according to Di- N; R51/53
rective 67/548/EEC / 1999/45/
EEC**2.2 Label elements**

Hazard pictogram



GHS09

H-statement(s) H411: Toxic to aquatic life with long lasting effects.

P-statement(s) P273: Avoid release to the environment.
P391: Collect spillage.

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P501: Dispose of contents/container according to local / regional / international legislation.

2.3 Other hazards

Hazard precautions

This mixture contains no substance where the PBT-/vPvB criteria of REACH, annex XIII apply.

SECTION 3: Composition/information on ingredients

Chemical characterization

Mixtures

Hazardous ingredients

Ingredient		Classification (EEC) No 67/548	Concentration
		Classification (EC) 1272/2008	
Potassium sulfate	CAS No.: 7778-80-5 EC-No.: 231-915-5 REACH No.: 01-2119489441-34	-	60.0 - 100.0 % by weight
		-	
Copper(II) sulfate pentahydrate	CAS No.: 7758-99-8 EC-No.: 231-847-6 Index-No.: 029-004-00-0 REACH No.: 01-2119520566-40	Xn; R22 Xi; R36/38 N; R50-53 Acute Tox. 4 *; H302 Eye Irrit. 2; H319 Skin Irrit. 2; H315 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	< 1.0 % by weight

Other data

Full text of R-, H- and EUH-phrases: see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

If inhaled

If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. In case of respiratory tract irritation, consult a physician.

In case of skin contact

After contact with skin, wash immediately with plenty of water and soap. Remove contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice/attention.

In case of eye contact

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist. Remove contact lenses, if present and easy to do. Continue rinsing.

If swallowed

Rinse mouth immediately and drink plenty of water.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms

The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11. Further important symptoms and effects are so far not known.

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4.3 Indication of any immediate medical attention and special treatment needed

Immediate medical attention First Aid, decontamination, treatment of symptoms.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media The product itself does not burn. Co-ordinate fire-fighting measures to the fire surroundings.

Extinguishing media which must not be used for safety reasons No data available. Co-ordinate fire-fighting measures to the fire surroundings.

5.2 Special hazards arising from the substance or mixture

Special exposure hazards arising from the substance or preparation itself, its combustion products, or released gases Thermal decomposition can lead to the escape of irritating gases and vapours. Hazardous decomposition products: Sulphur oxides. Inhaling hazardous decomposing products can cause serious health damage.

5.3 Advice for firefighters

Special protective equipment for firefighting Wear a self-contained breathing apparatus and chemical protective clothing.

Additional information on fire-fighting 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

Personal precautions Avoid contact with skin, eyes and clothes. Avoid breathing dust/fume/gas/mist/vapours/spray. Provide adequate ventilation. Wear personal protection equipment. (see chapter 8).

6.2 Environmental precautions

Environmental precautions Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil. Retain contaminated washing water and dispose it.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up Take up mechanically. Avoid generation of dust. Collect in closed and suitable containers for disposal.

6.4 Reference to other sections

Reference to other sections See protective measures under point 7 and 8. Disposal: see section 13

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling Avoid generation of dust. Provide adequate ventilation as well as local exhaustion at critical locations. Dust should be exhausted directly at the point of origin. Avoid contact with skin and eyes.

Advice on protection against fire and explosion not explosive.

7.2 Conditions for safe storage, including any incompatibilities

Storage space and container re-requirements Keep container tightly closed in a cool, well-ventilated place. Keep/Store only in original container.

Hints on storage assembly Keep away from strongly acidic and alkaline materials as well as oxidizers.

Storage specifications Keep container tightly closed in a cool, well-ventilated place. Keep/Store only in original container.

7.3 Specific end use(s)

Specific use(s) See chapter 1.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Potassium sulfate

DNEL

Value	Exposure type	Source
21.3 mg/kg bw/day	Worker – dermal, long-term – systemic	103
37.6 mg/m ³	Worker – inhalative, long-term – systemic	103
12.8 mg/kg bw/day	Consumer – dermal, long-term – systemic	103
11.1 mg/m ³	Consumer – inhalative, long-term – systemic	103
12.8 mg/kg bw/day	Consumer – oral, long-term – systemic	103

103 – ECHA

PNEC

Value	Compartment	Source
0.68 mg/L	freshwater	103
0.068 mg/L	marine water	103
6.8 mg/L	intermittent release	103
10 mg/L	STP	103

103 – ECHA

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Copper(II) sulfate pentahydrate

PNEC

Value	Compartment	Source
0.0078 mg/L	freshwater	103
0.0052 mg/L	marine water	103
0.23 mg/L	STP	103
87 mg/kg dry weight	freshwater sediment	103
676 mg/kg dry weight	marine sediment	103
65 mg/kg dry weight	Soil	103

103 - ECHA

8.2 Exposure controls

Respiratory protection	In case of inadequate ventilation wear respiratory protection. Wear breathing apparatus if exposed to vapours/dusts/aerosols. particle filter device (DIN EN 143), Filter type: P1.
Hand protection	Wear suitable gloves. (DIN EN 374). 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. Breakthrough times and swelling properties of the material must be taken into consideration. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.
Eye protection	Wear eye glasses with side protection according to EN 166.
Skin and body protection	Wear suitable protective clothing and eye/face protection.
General protective and hygiene measures	When using do not eat, drink or smoke. Separate storage of work clothes. Wash contaminated clothing prior to re-use. Wash hands and face before breaks and after work and take a shower if necessary.
Engineering measures	Provide good ventilation.

SECTION 9: Physical and chemical properties**9.1 Information on basic physical and chemical properties**

Physical state	solid
Form	Tablets
Colour	blue
Odour	odourless
Odour threshold	No data available
pH	ca. 7
Temperature:	25 °C
Remarks:	Data apply to the main component.

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Melting point [°C] / Freezing point [°C]	1067 °C
Remarks:	Data apply to the main component.
Boiling point [°C]	No data available
Flash point [°C]	No data available
Evaporation rate [kg/(s*m ²)]	Not applicable
Flammability (solid, gas)	No data available
Explosion limits [Vol-%]	
Remarks:	No data available
Vapour pressure [kPa]	Not applicable
Density [g/cm ³]	2.66 g/cm ³
Remarks:	Data apply to the main component.
Water solubility [g/l]	very soluble (> 10000 mg/L)
Remarks:	Data apply to the main component.
Partition coefficient n-octanol / water (log P O/W)	No data available
Autoignition temperature [°C]	No data available
Autoinflammability	No data available
Decomposition temperature [°C]	No data available
Viscosity, dynamic [kg/(m*s)]	not applicable
Risk of explosion.	not explosive. (Data apply to the main component.)
Oxidising properties	Not oxidising. (Data apply to the main component.)

SECTION 10: Stability and reactivity**10.1 Reactivity**

Reactivity The product is stable if stored and handled as prescribed/indicated.

10.2 Chemical stability

Chemical stability The product is stable if stored and handled as prescribed/indicated.

10.3 Possibility of hazardous reactions

Hazardous reactions No hazards to be specially mentioned.

10.4 Conditions to avoid

Conditions to avoid Protect from heat and direct sunlight. Protect from moisture.

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10.5 Incompatible materials

Materials to avoid Metal powder, magnesium powder (pyrophoric)

10.6 Hazardous decomposition products

Hazardous decomposition products Hazardous decomposition byproducts may form with exposure to high temperatures. Sulphur oxides.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Oral toxicity [mg/kg]

Value	Test species	Test method	Remarks
LD50: 6600 mg/kg	Rat.		test substance: Potassium sulfate.
LD50: 960 mg/kg	Rat.	OECD 401	test substance: Copper(II) sulfate pentahydrate.
Virtually nontoxic after a single ingestion.			The product has not been tested. The statement is derived from the properties of the single components.

Dermal toxicity [mg/kg]

Value	Test species	Test method	Remarks
LD50: > 2000 mg/kg	Rat.	OECD 402	test substance: Potassium sulfate.
LD50: > 2000 mg/kg	Rat.	OECD 402	test substance: Copper(II) sulfate pentahydrate.
Virtually nontoxic after a single skin contact.			The product has not been tested. The statement is derived from the properties of the single components.

Inhalative toxicity [mg/l] No data available.

Remarks: The product has not been tested.

Irritant effect on skin

Value	Test species	Test method	Remarks
Not an irritant.		In vitro skin test.	test substance: Potassium sulfate.
Not an irritant.	Rabbit.	OECD 404.	test substance: Copper(II) sulfate pentahydrate.
Irritant.			test substance: Copper(II) sulfate pentahydrate. Harmonised (legal) classification.
Not an irritant.			The product has not been tested. The statement is derived from the properties of the single components.

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Irritant effect on eyes

Value	Test species	Test method	Remarks
Not an irritant.	Rabbit.	OECD 405.	test substance: Potassium sulfate.
Causes serious eye irritation.	Rabbit.	OECD 405.	test substance: Copper(II) sulfate pentahydrate.
Not an irritant.			The product has not been tested. The statement is derived from the properties of the single components.

Sensitization

Value	Test species	Test method	Remarks
not sensitising.	Mouse.	OECD 429.	test substance: Potassium sulfate.
not sensitising.	Guinea pig.	OECD 406.	test substance: Copper(II) sulfate pentahydrate.
not sensitising.			The product has not been tested. The statement is derived from the properties of the single components.

Carcinogenic effects

Value	Test species	Test method	Remarks
negative.	Rat.	OECD 453.	test substance: Potassium sulfate.
Data are not available for all ingredients of the product.			The product has not been tested.

Mutagenicity

Value	Test species	Test method	Remarks
negative.	Salmonella typhimurium.	OECD 471 (Ames test).	test substance: Potassium sulfate.
negative.	Salmonella typhimurium.	OECD 471 (Ames test).	test substance: Copper(II) sulfate pentahydrate.
negative.	Rat.	OECD 486.	test substance: Copper(II) sulfate pentahydrate.
negative.			The product has not been tested. The statement is derived from the properties of the single components.

Reproduction toxicity

Value	Test species	Method of administration	Test method	Remarks
NOAEL: \geq 1500 mg/kg bw/day (Reproductive toxicity)	Rat.		OECD 422.	test substance: Potassium sulfate.
NOAEL: \geq 1500 ppm (Reproductive toxicity)	Rat.	Feed.	OECD 416.	test substance: Copper(II) sulfate pentahydrate.

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Value	Test species	Method of administration	Test method	Remarks
No evidence for reproductive toxicity in experimental animals.				The product has not been tested. The statement is derived from the properties of the single components.

Specific target organ toxicity (single exposure) [mg/kg] No data available.

Specific target organ toxicity (repeated exposure) [mg/kg] No data available.

Aspiration hazard Not applicable.

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish [mg/l]

Value	Exposure duration	Remarks
LC50: 3550 mg/L	96 h	test substance: Potassium sulfate.
LC50: 0.6 mg/L	96 h	test substance: Copper(II) sulfate pentahydrate.

Toxicity to daphnia [mg/l]

Value	Exposure duration	Remarks
EC50: 890 mg/L	48 h	test substance: Potassium sulfate.
EC50: 0.024 mg/L	48 h	test substance: Copper(II) sulfate pentahydrate.

Toxicity to algae [mg/l]

Value	Exposure duration	Remarks
IC50: 2900 mg/L	72 h	test substance: Potassium sulfate.
Data are not available for all ingredients of the product.		The product has not been tested.

NOEC (fish) [mg/l] No data available

NOEC (Daphnie) [mg/l] No data available

NOEC (algae) [mg/l]

Value	Test species	Exposure duration	Remarks
NOEC: 0.0057 mg/L	Phaeodactylum tricornutum.	72 h	test substance: Copper(II) sulfate pentahydrate.
Data are not available for all ingredients of the product.			The product has not been tested.

12.2 Persistence and degradability

Biodegradability The methods for determining the biological degradability are not applicable to inorganic substances.

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12.3 Bioaccumulative potential

Bioaccumulation No indication of bioaccumulation potential.

12.4 Mobility in soil

Mobility No data available

12.5 Results of PBT and vPvB assessment

Results of PBT characteristics determination This mixture contains no substance where the PBT-/vPvB criteria of REACH, annex XIII apply. Product/Substance is inorganic.

SECTION 13: Disposal considerations







13.1 Waste treatment methods

Disposal considerations Dispose according to legislation. Do not allow uncontrolled discharge of product into the environment.

Waste Code The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

Uncleaned empty packaging Packs that cannot be cleaned should be disposed of in the same manner as the contents. Consult the appropriate local waste disposal expert about waste disposal.

SECTION 14: Transport information

	Land transport ADR/RID	Marine transport IMDG	Air transport ICAO/IATA
UN-No	3077	3077	3077
Class	9	9	9
Packaging group	III	III	III
Description of the goods	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Contains: Copper(II) sulfate pentahydrate)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Contains: Copper(II) sulfate pentahydrate)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Contains: Copper(II) sulfate pentahydrate)
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (contains: copper sulphate pentahydrate)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (contains: copper sulphate pentahydrate)	Environmentally hazardous substance, solid, n.o.s. (contains: copper sulphate pentahydrate)
Labels	U, 9  	U, 9  	U, 9  
Tunnel restriction code	E		
Environmental hazards	Dangerous for the environment	Dangerous for the environment Marine pollutant: yes	Dangerous for the environment

SECTION 15: Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

Additional regulations Observe in addition any national regulations!

15.2 Chemical safety assessment

Safety assessment For the following substances of this mixture a chemical safety assessment has been carried out: Potassium sulfate, copper sulphate

SECTION 16: Other information

Relevant R-phrases R22: Harmful if swallowed.
R36/38: Irritating to eyes and skin.
R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Relevant H-phrases H302: Harmful if swallowed.
H315: Causes skin irritation.
H319: Causes serious eye 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.

Wording of the hazard classes Aquatic Chronic: Hazardous to the aquatic environment
Acute Tox.: Acute toxicity
Eye Irrit.: Serious eye irritation
Skin Irrit.: Skin irritation
Aquatic Acute: Hazardous to the aquatic environment

Key literature references and sources for data REACH dossier(s) according to EC 1907/2006.

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