Safety Data Sheet

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision date: 28.05.2015 *Version: 1.0* *Print date: 31.05.2015*

SECTION 1: Identification

Product identifier

Trade name/designation:	Fehlings solution #1
Product No.:	BDH7316
Substance name:	Fehling's reagent I (Copper (II) sulphate solution)
CAS No.:	7758-98-7
INDEX No.:	000-000-00-0
REACH registration No.:	Not yet communicated down the supply chain.
Other means of identification:	

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

Relevant identified uses:	General chemical reagent

Details of the supplier of the safety data sheet

VWR International, LLC

Street	100 Matsonford Road
Postal code/city	Radnor, PA 19087-8660
Telephone	610-386-1700
E-mail	www.vwr.com

Emergency telephone

Telephone	+1-800-424-9300 (Chemtrec, 24 hrs/day, 7 days/week, USA)

VWR International Co.

Street	2360 Argentia Road
Postal code/city	Mississauga, ON, L5N 5Z7
Telephone	800-932-5000
E-mail	www.vwr.com

Emergency telephone

Telephone	+1-613-996-6666 (Canutec, 24 hrs/day, 7 days/week, Canada)

SECTION 2: Hazards identification

Classification of the substance or mixture

Classification according GHS

Hazard classes and hazard categories	Hazard statements
Hazardous to the aquatic environment, acute, category 1	H400
Hazardous to the aquatic environment, chronic, category 1	H410

Classification according to Directive 67/548/EEC or 1999/45/EC

N	Dangerous for the environment	R51/53

Label elements

Labelling according GHS

Hazard pictograms



Signal word: Warning

Hazard statements	
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statements	
P273	Avoid release to the environment.

Labelling (67/548/EEC or 1999/45/EC)

Hazard symbols

N

R-phrases	
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S-phrases	
S61	Avoid release to the environment. Refer to special instructions/safety data sheets.

Other hazards

SVHC No

SECTION 3: Composition / information on ingredients

Hazardous ingredients Classification according to the OSHA Hazard Communication Standard 29 CFR 1910.1200

Substance name	Concentration	Product identifier	Hazard classes and hazard categories
Copper (II) sulphate	1-10%	CAS No.: EC No.: REACH No.: Not yet communicated down the supply chain.	Acute toxicity, category 4, oral - H302 Eye irritation, category 2 - H319 Skin irritation, category 2 - H315 Hazardous to the aquatic environment, chronic, category 1 - H410

Hazardous ingredients Classification according to 67/548/EEC

Substance name	Concentration	Product identifier	Hazard classes and hazard categories
Copper (II) sulphate	1-10%	CAS No.: EC No.: REACH No.: Not yet communicated down the supply chain.	Xn, Harmful, R22 Xi, Irritant, R36/38 N, Dangerous for the environment, R50/53

SECTION 4: First aid measures

General information

When in doubt or if symptoms are observed, get medical advice. If unconscious place in recovery position and seek medical advice. Never give anything by mouth to an unconscious person or a person with cramps. Change contaminated, saturated clothing. Do not leave affected person unattended.

After inhalation

Remove casualty to fresh air and keep warm and at rest. If breathing is irregular or stopped, administer artificial respiration. 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, saturated clothing immediately. In case of skin reactions, consult a physician.

After 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. Protect uninjured eye. Remove contact lenses, if present and easy to do. Continue rinsing.

In case of ingestion

If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention. Do NOT induce vomiting. Give nothing to eat or drink.

Most important symptoms and effects, both acute and delayed

no data available

Indication of any immediate medical attention and special treatment needed

no data available

Self-protection of the first aider

First aider: Pay attention to self-protection!

Information to physician

no data available

SECTION 5: Firefighting measures

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 restriction

Special hazards arising from the substance or mixture

In case of fire may be liberated: Carbon dioxide (CO2) Carbon monoxide Sulphur oxides

Advice for firefighters

DO NOT fight fire when fire reaches explosives. In case of fire: Wear self-contained breathing apparatus.

Additional information

Do not allow run-off from fire-fighting to enter drains or water courses. Do not inhale explosion and combustion gases. Use caution when applying carbon dioxide in confined spaces. Carbon dioxide can displace oxygen. Use water spray jet to protect personnel and to cool endangered containers.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Avoid generation of dust. Do not breathe dust. Provide adequate ventilation. Use personal protection equipment.

Environmental precautions

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

Methods and material for containment and cleaning up

Spilled product must never be returned to the original container for recycling. Clean contaminated objects and areas thoroughly observing environmental regulations. Collect in closed and suitable containers for disposal.

Additional information

Clear spills immediately.

SECTION 7: Handling and storage

Precautions for safe handling

Avoid: Inhalation Avoid contact with skin and eyes. Use extractor hood (laboratory). If handled uncovered, arrangements with local exhaust ventilation have to be used. If local exhaust ventilation is not possible or not sufficient, the entire working area must be ventilated by technical means. Protect from moisture.

Conditions for safe storage, including any incompatibilities

storage temperature: 15-25 °C

Storage class: 10-13

Keep container tightly closed in a cool, well-ventilated place.

Specific end use(s)

no data available

SECTION 8: Exposure controls/personal protection

Control parameters

Does not contain substances above concentration limits fixing an occupational exposure limit.

Exposure controls

Appropriate engineering controls
Technical measures and the application of suitable work processes have priority over personal protection equipment. If handled uncovered, arrangements with local exhaust ventilation have to be used.

Personal protection equipment
Wear suitable protective clothing. When handling with chemical substances, protective clothing with CE-labels including the four control digits must be worn. For the protection against direct skin contact, body protective clothing is essential (in addition to the usual working clothes).
Eye/face protection
Eye glasses with side protection DIN-/EN-Norms: DIN EN 166
Recommendation: VWR 111-0432
Skin protection
no data available

By short-term hand contact

Suitable material:	no data available
Thickness of the glove material:	no data available
Breakthrough time (maximum wearing time):	no data available
Recommended glove articles:	no data available

By long-term hand contact

Suitable material:	no data available
Thickness of the glove material:	no data available
Breakthrough time (maximum wearing time):	no data available
Recommended glove articles:	no data available

Respiratory protection
Respiratory protection necessary at: aerosol or mist formation

Suitable respiratory protection apparatus:	Full-/half-/quarter-face masks (DIN EN 136/140)
Recommendation:	VWR 111-0206
Suitable material:	A2B2E2K2P3
Recommendation:	VWR 111-0059

Additional information
Wash hands before breaks and after work. Avoid contact with skin and eyes. When using do not eat, drink or smoke. Provide eye shower and label its location conspicuously.

Environmental exposure controls
no data available

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

(a) Appearance	
Physical state:	liquid
Colour:	no data available
(b) Odour:	no data available
(c) Odour threshold:	no data available

Safety relevant basic data

(d) pH:	no data available
(e) Melting point/freezing point:	no data available
(f) Initial boiling point and boiling range:	>100 °C (1013 hPa)
(g) Flash point:	no data available
(h) Evaporation rate:	no data available
(i) Flammability (solid, gas):	not applicable
(j) Upper/lower flammability or explosive limits	
Lower explosion limit:	no data available
Upper explosion limit:	no data available
(k) Vapour pressure:	no data available
(l) Vapour density:	no data available
(m) Relative density:	1 g/cm³ (20 °C)
(n) Solubility(ies)	
at 20 °C:	no data available
Soluble (g/L) in:	no data available
(o) Partition coefficient: n-octanol/water:	no data available
(p) Auto-ignition temperature:	no data available
(q) Decomposition temperature:	no data available
(r) Viscosity	
Kinematic viscosity:	no data available
Dynamic viscosity:	no data available
(s) Explosive properties:	not applicable
(t) Oxidising properties:	not applicable

Other information

Bulk density:	no data available
Refraction index:	no data available
Dissociation constant:	no data available
Surface tension:	no data available
Henry constant:	no data available

SECTION 10: Stability and reactivity

Reactivity

no data available

Chemical stability

no data available

Possibility of hazardous reactions

no data available

Conditions to avoid

no data available

Incompatible materials

no data available

Hazardous decomposition products

no data available

Additional information

no data available

SECTION 11: Toxicological information

Information on toxicological effects

Acute effects

Acute oral toxicity:
no data available

Acute dermal toxicity:
no data available

Acute inhalation toxicity:
no data available

Irritant and corrosive effects

Primary irritation to the skin:
not applicable

Irritation to eyes:
not applicable

Irritation to respiratory tract:
not applicable

Respiratory or skin sensitisation

In case of skin contact: not sensitising
After inhalation: not sensitising

STOT-single exposure

not applicable

STOT-repeated exposure

not applicable

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

Carcinogenicity

No indication of human carcinogenicity.

Germ cell mutagenicity

No indications of human germ cell mutagenicity exist.

Reproductive toxicity

No indications of human reproductive toxicity exist.

Aspiration hazard

not applicable

Other adverse effects

no data available

Additional information

no data available

SECTION 12: Ecological information

Ecotoxicity

Acute (short-term) fish toxicity:

no data available

Chronic (long-term) fish toxicity:

no data available

Acute (short-term) daphnia toxicity:

no data available

Chronic (long-term) daphnia toxicity:

no data available

Acute (short-term) algae toxicity:

no data available

Chronic (long-term) algae toxicity:

no data available

Persistence and degradability

no data available

Bioaccumulative potential

Partition coefficient: n-octanol/water: no data available

Mobility in soil:

no data available

Results of PBT/vPvB assessment

no data available

Other adverse effects

no data available

SECTION 13: Disposal considerations

Waste treatment methods

Appropriate disposal / Product
Dispose according to local legislation. Consult the appropriate local waste disposal expert about waste disposal.

Waste code product: no data available

Appropriate disposal / Package
Dispose according to local legislation. Handle contaminated packages in the same way as the substance itself.

Additional information
no data available

SECTION 14: Transport information

Land transport (ADR/RID/DOT)

UN-No.:	3082
Proper Shipping Name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (COPPER SULFATE)
Class(es):	9
Classification code:	M6
Hazard label(s):	9
Packing group:	III
Environmental hazards:	Dangerous for the environment
Special precautions for user:	
Hazard identification number (Kemler No.):	90
Tunnel restriction code:	E (Passage forbidden through tunnels of category E.)

Sea transport (IMDG)

UN-No.:	3082
Proper Shipping Name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (COPPER SULFATE)
Class(es):	9
Classification code:	
Hazard label(s):	9
Packing group:	III
Environmental hazards:	Dangerous for the environment
MARINE POLLUTANT:	Yes (P)
Special precautions for user:	
Segregation group:	-
EmS-No.	F-A S-F

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
not relevant

Air transport (ICAO-TI / IATA-DGR)

UN-No.:	3082
Proper Shipping Name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (COPPER SULFATE)
Class(es):	9
Classification code:	M6
Hazard label(s):	9
Packing group:	III
Special precautions for user	not relevant

SECTION 15: Regulatory information

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

General rules

Water hazard class (WGK): no data available

California Prop 65 Components

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

Chemical Safety Assessment

no data available

SECTION 16: Other information

Abbreviations and acronyms

ACGIH - American Conference of Governmental Industrial Hygiensts
ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road
AGS - Committee on Hazardous Substances (Ausschuss für Gefahrstoffe)
CLP - Regulation on Classification, Labelling and Packaging of Substances and Mixtures
DFG - German Research Foundation (Deutsche Forschungsgemeinschaft)
DOT – U.S. Department of Transportation
Gestis - Information system on hazardous substances of the German Social Accident Insurance (Gefahrstoffinformationssystem der Deutschen Gesetzlichen Unfallversicherung)
IATA-DGR - International Air Transport Association-Dangerous Goods Regulations
ICAO-TI - International Civil Aviation Organization-Technical Instructions
IMDG - International Maritime Code for Dangerous Goods
LTV - Long Term Value
NIOSH - National Institute for Occupational Safety and Health
OSHA - Occupational Safety & Health Administration
PBT - Persistent, Bioaccumulative and Toxic
RID - Regulation concerning the International Carriage of Dangerous Goods by Rail
STV - Short Term Value
SVHC - Substances of Very High Concern
vPvB - very Persistent, very Bioaccumulative

Additional information

Indication of changes: general update

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.