Safety data sheet
according to Regulation (EC) No 1907/2006, Article 31 and 2020/878/EU

Printing date 05.06.2025 *Version number 9 (replaces version 8)* *Revision: 30.04.2025*

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

1.1 Product identifier
Trade name: Flux for silver solders CuFe-No. 1
UFI: *TSA9-D0AD-D00Q-C4YK*

1.2 Relevant identified uses of the substance or mixture and uses advised against
No further relevant information available.
Application of the substance / the mixture *Soldering flux*

1.3 Details of the supplier of the safety data sheet
Manufacturer/Supplier:
Felder GmbH
Im Lipperfeld 11
D-46047 Oberhausen

Tel.: +49 (0)208/ 85035-0
Fax.: +49 (0)208/ 26080
http://www.felder.de
e-mail: info@felder.de
Further information obtainable from:
lab
(mo-thu. 8:00 a.m. - 4:00 p.m./ fr. 8:00 a.m. - 1:00 p.m.)
email: mprobst@felder.de

1.4 Emergency telephone number:
24-hour emergency information:
Giftnotruf Berlin, counselling in German and English
Phone: (030) 30686 700
EuPCS: *PC-TEC-24*

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008


GHS08 health hazard

Repr. 2 H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.


GHS05 corrosion

Eye Dam. 1 H318 Causes serious eye damage.

2.2 Label elements
Labelling according to Regulation (EC) No 1272/2008
The product is classified and labelled according to the CLP regulation.
Hazard pictograms


GHS05 GHS08

Signal word *Danger*

Hazard-determining components of labelling:
potassium fluoride
potassium metaborate
potassium pentaborate - hydrat
Hazard statements
H318 Causes serious eye damage.
H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.
Precautionary statements
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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P310	*Immediately call a POISON CENTER/doctor.*
P308+P313	*IF exposed or concerned: Get medical advice/attention.*
P405	*Store locked up.*
P501	*Dispose of contents/container in accordance with local/regional/national/international regulations.*

Labelling of packages where the contents do not exceed 125 ml
Hazard pictograms

GHS05 GHS08

Signal word *Danger*

Hazard-determining components of labelling:
potassium fluoride
potassium metaborate
potassium pentaborate - hydrat
Hazard statements
H318 Causes serious eye damage.
H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.
Precautionary statements

P280	*Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.*
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.*
P308+P313	*IF exposed or concerned: Get medical advice/attention.*
P405	*Store locked up.*
P501	*Dispose of contents/container in accordance with local/regional/national/international regulations.*

2.3 Other hazards
Results of PBT and vPvB assessment
PBT: *Not applicable.*
vPvB: *Not applicable.*

SECTION 3: Composition/information on ingredients

3.2 Mixtures
Description: *Mixture: consisting of the following components.*

Dangerous components:		
CAS: 7789-23-3 *EINECS: 232-151-5* *Index number: 009-005-00-2* *Reg.nr.: < 1t/year*	*potassium fluoride* *Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331* *Eye Dam. 1, H318*	*<10%*
CAS: 13709-94-9 *EINECS: 237-262-2* *Reg.nr.: <1 t/year*	*potassium metaborate* *Repr. 2, H361* *Eye Irrit. 2, H319*	*<7.2%*
CAS: 7631-86-9 *EINECS: 231-545-4* *Reg.nr.: 01-2119379499-16*	*silicon dioxide, chemically prepared* *substance with a Community workplace exposure limit*	*<5%*
CAS: 12229-13-9 *EINECS: 234-371-7* *Reg.nr.: 01-2119970729-20*	*potassium pentaborate - hydrat* *Repr. 2, H361fd*	*<5.2%*

Additional information: *For the wording of the listed hazard phrases refer to section 16.*

SECTION 4: First aid measures

4.1 Description of first aid measures
General information:
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
After inhalation:
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
In case of unconsciousness place patient stably in side position for transportation.

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After skin contact:
Generally the product does not irritate the skin.
Wash with water and acidic soap.
After contact with the molten product, cool rapidly with cold water.
Do not pull solidified product off the skin.
Seek medical treatment.
After eye contact: *Rinse opened eye for several minutes under running water. Then consult a doctor.*
After swallowing: *Call for a doctor immediately.*
4.2 Most important symptoms and effects, both acute and delayed *No further relevant information available.*
4.3 Indication of any immediate medical attention and special treatment needed
No further relevant information available.

SECTION 5: Firefighting measures

5.1 Extinguishing media
Suitable extinguishing agents:
CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
5.2 Special hazards arising from the substance or mixture *No further relevant information available.*
5.3 Advice for firefighters
Protective equipment: *Mouth respiratory protective device.*

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures *Not required.*
6.2 Environmental precautions: *Do not allow to enter sewers/ surface or ground water.*
6.3 Methods and material for containment and cleaning up:
Dispose contaminated material as waste according to section 13.
Ensure adequate ventilation.
6.4 Reference to other sections
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling *Ensure good ventilation/exhaustion at the workplace.*
Information about fire - and explosion protection: *No special measures required.*

7.2 Conditions for safe storage, including any incompatibilities
Storage:
Requirements to be met by storerooms and receptacles: *No special requirements.*
Information about storage in one common storage facility: *Do not store together with acids.*
Further information about storage conditions: *Keep container tightly sealed.*
Storage class: *11*
7.3 Specific end use(s) *No further relevant information available.*

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with limit values that require monitoring at the workplace:	
7789-23-3 potassium fluoride	
IOELV (EU)	*Long-term value: 2.5 mg/m³ as F*
WES (Australia)	*Long-term value: 2.5 mg/m³ as F*
AGW (Germany)	*Long-term value: 1 E mg/m³ 4(II);als Fluor berechnet; EU, DFG, Y, H*
WEL (Great Britain)	*Long-term value: 2.5 mg/m³ as F*

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OEL (Ireland)	*Long-term value: 2.5 mg/m³* *as F, IOELV*
7631-86-9 silicon dioxide, chemically prepared	
WES (Australia)	*Long-term value: 2 mg/m³*
AGW (Germany)	*Long-term value: 1 E mg/m³* *8(II);AGS, 2, Y*

Regulatory information
IOELV (EU): (EU) 2019/1831
WES (Australia): Workplace exposure standards for airborne contaminants
AGW (Germany): TRGS 900
WEL (Great Britain): EH40/2020
OEL (Ireland): 2024 CoP for the Safety, Health and Welfare at Work
recommended monitoring procedures in accordance with 2020/878/EU no. 8.1.2:
7631-86-9 silicon dioxide: BIA 7710(D)

Ingredients with biological limit values:	
7789-23-3 potassium fluoride	
BGW (Germany)	*7.0 mg/g Kreatinin* *Untersuchungsmaterial: Urin* *Probennahmezeitpunkt: Expositionsende bzw. Schichtende* *Parameter: Fluorid* *4.0 mg/g Kreatinin* *Untersuchungsmaterial: Urin* *Probennahmezeitpunkt: vor nachfolgender Schicht* *Parameter: Fluorid*

Regulatory information *BGW (Germany): TRGS 903*
Additional information: *The lists valid during the making were used as basis.*

8.2 Exposure controls
Appropriate engineering controls
Ensure adequate ventilation.
Remove the fumes by means of suitable suction devices.
Individual protection measures, such as personal protective equipment
General protective and hygienic measures:
Keep away from foodstuffs, beverages and feed.
Avoid contact with the eyes and skin.
Respiratory protection:
Use suitable respiratory protective device in case of insufficient ventilation.
Filter P2
Filter B
Hand protection

Protective gloves

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
Material of gloves
Nitrile rubber, NBR
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material cannot be calculated in advance and has therefore to be checked prior to the application.
Recommended thickness of the material: ≥ 0.2 mm
Penetration time of glove material
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
The determined penetration times according to EN 16523-1:2015 are not performed under practical conditions. Therefore a maximum wearing time, which corresponds to 50% of the penetration time, is recommended.
Value for the permeation: Level ≤ 6
As protection from splashes gloves made of the following materials are suitable:
Nitrile rubber, NBR
Natural rubber, NR

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Eye/face protection

Tightly sealed goggles

Body protection: *Protective work clothing*

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

General Information	
Colour:	*White*
Odour:	*Characteristic*
Odour threshold:	*Not determined.*
Boiling point or initial boiling point and boiling range	*100 °C*
Flammability	*Not determined.*
Lower and upper explosion limit	
Lower:	*Not determined.*
Upper:	*Not determined.*
Flash point:	*Not applicable.*
Decomposition temperature:	*Not determined.*
pH	*Not applicable.*
Viscosity:	
Kinematic viscosity	*Not applicable.*
Dynamic:	*Not applicable.*
Solubility	
water:	*Insoluble.*
Partition coefficient n-octanol/water (log value)	*Not determined.*
Vapour pressure:	*Not applicable.*
Density and/or relative density	
Density at 20 °C:	*1.35 g/cm³*
Relative density	*Not determined.*
Vapour density	*Not applicable.*
Particle characteristics	*See section 3.*

9.2 Other information

Appearance:	
Form:	*Pasty*
Important information on protection of health and environment, and on safety.	
Ignition temperature:	*Product is not selfigniting.*
Explosive properties:	*Product does not present an explosion hazard.*
Solvent content:	
Organic solvents:	*0.0 %*
Water:	*35.3 %*
VOC (EC)	*0.00 %*
Change in condition	
Evaporation rate	*Not applicable.*

Information with regard to physical hazard classes	
Explosives	*Void*
Flammable gases	*Void*
Aerosols	*Void*
Oxidising gases	*Void*
Gases under pressure	*Void*
Flammable liquids	*Void*
Flammable solids	*Void*
Self-reactive substances and mixtures	*Void*
Pyrophoric liquids	*Void*
Pyrophoric solids	*Void*
Self-heating substances and mixtures	*Void*
Substances and mixtures, which emit flammable gases in contact with water	*Void*
Oxidising liquids	*Void*

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Oxidising solids	*Void*
Organic peroxides	*Void*
Corrosive to metals	*Void*
Desensitised explosives	*Void*

SECTION 10: Stability and reactivity

10.1 Reactivity *No further relevant information available.*
10.2 Chemical stability
Thermal decomposition / conditions to be avoided: *No decomposition if used according to specifications.*
10.3 Possibility of hazardous reactions *No dangerous reactions known.*
10.4 Conditions to avoid *No further relevant information available.*
10.5 Incompatible materials: *No further relevant information available.*
10.6 Hazardous decomposition products: *No dangerous decomposition products known.*

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008
Acute toxicity *Based on available data, the classification criteria are not met.*

LD/LC50 values relevant for classification:		
ATE (Acute Toxicity Estimates)		
Oral	*LD50*	*2,663 mg/kg (rat)*
Inhalative	*LC50/4 h*	*10.9 mg/l (rat)*

7789-23-3 potassium fluoride		
Oral	*LD50*	*245 mg/kg (rat)*
Dermal	*LD50*	*>2,000 mg/kg (rat)*
Inhalative	*LC50/4 h*	*1 mg/l (rat)*

Primary irritant effect:
Skin corrosion/irritation *Based on available data, the classification criteria are not met.*
Serious eye damage/irritation
Causes serious eye damage.
Respiratory or skin sensitisation *Based on available data, the classification criteria are not met.*
Germ cell mutagenicity *Based on available data, the classification criteria are not met.*
Carcinogenicity *Based on available data, the classification criteria are not met.*
Reproductive toxicity
Suspected of damaging fertility. Suspected of damaging the unborn child.
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.*
11.2 Information on other hazards

Endocrine disrupting properties
None of the ingredients is listed.

SECTION 12: Ecological information

12.1 Toxicity
Aquatic toxicity: *No further relevant information available.*
12.2 Persistence and degradability *No further relevant information available.*
12.3 Bioaccumulative potential *No further relevant information available.*
12.4 Mobility in soil *No further relevant information available.*
12.5 Results of PBT and vPvB assessment
PBT: *Not applicable.*
vPvB: *Not applicable.*
12.6 Endocrine disrupting properties
The product does not contain substances with endocrine disrupting properties.
12.7 Other adverse effects
Additional ecological information:
General notes:
Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water

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Do not allow product to reach ground water, water course or sewage system.
Danger to drinking water if even small quantities leak into the ground.

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Recommendation
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
European waste catalogue
06 03 14: solid salts and solutions other than those mentioned in 06 03 11 and 06 03 13
HP 6: Acute Toxicity
HP 10: Toxic for reproduction

cleaned plastic bottle:
15 01 02: plastic packaging
overpack:
15 01 01: paper and cardboard packaging
Uncleaned packaging:
15 01 10: Packaging containing residues of hazardous substances or contaminated with hazardous substancesare*
Recommendation: *Disposal must be made according to official regulations.*
Recommended cleansing agents:
mechanical scratching, clean with alkaline soap solution and subsequent rinsing with ethanol or isopropanol.

SECTION 14: Transport information

14.1 UN number or ID number	
ADR, ADN, IMDG, IATA	*Void*
14.2 UN proper shipping name	
ADR, ADN, IMDG, IATA	*Void*
14.3 Transport hazard class(es)	
ADR, ADN, IMDG, IATA	
Class	*Void*
14.4 Packing group	
ADR, IMDG, IATA	*Void*
14.5 Environmental hazards:	*Not applicable.*
14.6 Special precautions for user	*Not applicable.*
14.7 Maritime transport in bulk according to IMO instruments	*Not applicable.*
UN "Model Regulation":	*Void*

SECTION 15: Regulatory information

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

Directive 2012/18/EU
Named dangerous substances - ANNEX I *None of the ingredients is listed.*
REGULATION (EU) 2019/1021 on persistent organic pollutants (POP) *None of the ingredients are included.*

DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II
None of the ingredients is listed.

REGULATION (EU) 2019/1148

Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))
None of the ingredients is listed.

Annex II - REPORTABLE EXPLOSIVES PRECURSORS
None of the ingredients is listed.

Regulation (EC) No 273/2004 on drug precursors
None of the ingredients is listed.

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Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors

None of the ingredients is listed.

National regulations:

Information about limitation of use: *Employment restrictions concerning juveniles must be observed.*
Waterhazard class: *Water hazard class 2 (Self-assessment): hazardous for water.*
15.2 Chemical safety assessment: *A Chemical Safety Assessment has not been carried out.*

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Reasons for changes:
02.07.2015: adaptation to Regulation 453/2010/EC
15.05.2017: adaptation to Regulation 830/2015/EU, 2012/18/EU, chapter 8.1
11.09.2018: section 2, 3, 13
30.03.2020: section 1
28.12.2020: section 1, 7, 15, 16
15.03.2022: section 15
25.05.2023: section 2, 11
30.04.2025: section 3
Information referred to in Annex I, point 1.3.4.2 of Regulation 1272/2008/EC:

Relevant phrases
H301 Toxic if swallowed.
H311 Toxic in contact with skin.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H331 Toxic if inhaled.
H361 Suspected of damaging fertility or the unborn child.
H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.
Contact: *Dr. M. Probst*
Version number of previous version: *8*
Abbreviations and acronyms:
ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised 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)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
ATE: Acute toxicity estimate values
Acute Tox. 3: Acute toxicity – Category 3
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
Repr. 2: Reproductive toxicity – Category 2
Repr. 2: Reproductive toxicity – Category 2
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