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

Printing date 13.08.2024 *Version number 8* *Revision: 22.03.2024*

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

1.1 Product identifier
Trade name: Lötwasser VA-NOX
Solder liquid VA-NOX
UFI: *13E8-A0ST-300E-E4C1*

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


GHS05 corrosion

Met. Corr.1 *H290 May be corrosive to metals.*
Skin Corr. 1B *H314 Causes severe skin burns and eye damage.*
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

Signal word *Danger*

Hazard-determining components of labelling:
phosphoric acid
Hazard statements
H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.
Precautionary statements
P102 *Keep out of reach of children.*
P103 *Read carefully and follow all instructions.*
P260 *Do not breathe dusts or mists.*
P264 *Wash thoroughly after handling.*

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P303+P361+P353 *IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].*
P305+P351+P338 *IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.*
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

Signal word *Danger*

Hazard-determining components of labelling:
phosphoric acid
Hazard statements
H314 Causes severe skin burns and eye damage.
Precautionary statements
P102 *Keep out of reach of children.*
P103 *Read carefully and follow all instructions.*
P260 *Do not breathe dusts or mists.*
P264 *Wash thoroughly after handling.*
P303+P361+P353 *IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].*
P305+P351+P338 *IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.*
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: 7664-38-2 *EINECS: 231-633-2* *Index number: 015-011-00-6* *Reg.nr.: <1t/year*	*phosphoric acid* *Met. Corr.1, H290; Skin Corr. 1B, H314; Acute Tox. 4, H302* *Specific concentration limits: Skin Corr. 1B; H314: C ≥ 25 %* *Skin Irrit. 2; H315: 10 % ≤ C < 25 %* *Eye Irrit. 2; H319: 10 % ≤ C < 25 %*	*<50%*

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:
Immediately remove any clothing soiled by the product.
Take affected persons out into the fresh air.
After inhalation:
In case of unconsciousness place patient stably in side position for transportation.
Supply fresh air; consult doctor in case of complaints.
After skin contact:
Immediately wash with water and soap and rinse thoroughly.
Immediate medical treatment necessary. Failure to treat burns can prevent wounds from healing.
Seek medical treatment.

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After eye contact:
Rinse opened eye for several minutes under running water.
Protect unharmed eye.
Seek medical treatment.
After swallowing:
Do not induce vomiting; call for medical help immediately.
Rinse out mouth and then drink plenty of water.
Seek medical treatment.
4.2 Most important symptoms and effects, both acute and delayed *No further relevant information available.*
Hazards *Danger of gastric perforation.*
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:
Use fire extinguishing methods suitable to surrounding conditions.
CO2, powder or water spray. Fight larger fires with water spray.
5.2 Special hazards arising from the substance or mixture *No further relevant information available.*
5.3 Advice for firefighters
Protective equipment:
Do not inhale explosion gases or combustion gases.
Wear self-contained respiratory protective device.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Wear protective equipment. Keep unprotected persons away.
6.2 Environmental precautions:
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
6.3 Methods and material for containment and cleaning up:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Use neutralising agent.
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.
Prevent formation of aerosols.
Information about fire - and explosion protection: *Keep respiratory protective device available.*

7.2 Conditions for safe storage, including any incompatibilities
Storage:
Requirements to be met by storerooms and receptacles: *Store only in the original receptacle.*
Information about storage in one common storage facility:
Store separately from metals.
Do not store together with textiles.
Store away from foodstuffs.
Further information about storage conditions:
Store in cool, dry conditions in well sealed receptacles.
Protect from frost.
Protect from heat and direct sunlight.
Keep container tightly sealed.
Storage class: *8 B*

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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:	
7664-38-2 phosphoric acid	
IOELV (EU)	*Short-term value: 2 mg/m³* *Long-term value: 1 mg/m³*
WES (Australia)	*Short-term value: 3 mg/m³* *Long-term value: 1 mg/m³*
AGW (Germany)	*Long-term value: 2 E mg/m³* *2(I);DFG, EU, AGS, Y*
WEL (Great Britain)	*Short-term value: 2 mg/m³* *Long-term value: 1 mg/m³*
OEL (Ireland)	*Short-term value: 2 mg/m³* *Long-term value: 1 mg/m³* *IOELV*

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:
7664-38-2 phosphoric acid: OSHA ID-111(E); OSHA ID-165SG(E); DFG Nr. 1(D), BIA 8375, 3375, 6173(D); NIOSH 7903(E)
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:
The usual precautionary measures are to be adhered to when handling chemicals.
Keep away from foodstuffs, beverages and feed.
Do not eat, drink, smoke or sniff while working.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
Respiratory protection:
Use suitable respiratory protective device in case of insufficient ventilation.
Filter B
Filter P2
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: ≥ 0.4 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.

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Value for the permeation: Level ≤ 6
Eye/face protection

Tightly sealed goggles

Body protection: *Acid resistant protective clothing*

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

General Information	
Colour:	*Colourless*
Odour:	*Characteristic*
Odour threshold:	*Not determined.*
Boiling point or initial boiling point and boiling range	*100 °C*
Lower and upper explosion limit	
Lower:	*Not determined.*
Upper:	*Not determined.*
Flash point:	*Not applicable.*
Decomposition temperature:	*Not determined.*
pH (100 g/l) at 20 °C	*1*
Viscosity:	
Kinematic viscosity	*Not determined.*
Dynamic:	*Not determined.*
Solubility	
water:	*Fully miscible.*
Partition coefficient n-octanol/water (log value)	*Not determined.*
Vapour pressure at 20 °C:	*<20 hPa*
Density and/or relative density	
Density at 20 °C:	*1.28 g/cm³*
Relative density	*Not determined.*
Vapour density	*Not determined.*

9.2 Other information *No further relevant information available.*

Appearance:	
Form:	*Fluid*
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 %*
VOC (EC)	*0.00 %*
Solids content:	*7.5 %*
Change in condition	
Evaporation rate	*Not determined.*

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	*May be corrosive to metals.*
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
Reacts with various metals.
Reacts with metals forming hydrogen.
10.4 Conditions to avoid *No further relevant information available.*
10.5 Incompatible materials: *No further relevant information available.*
10.6 Hazardous decomposition products:
Corrosive gases/vapours
Phosphorus oxides (e.g. P2O5)

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*	*3,825 mg/kg (rat)*

Skin corrosion/irritation
Causes severe skin burns and eye damage.
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 *Based on available data, the classification criteria are not met.*
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 *No further relevant information available.*
Additional ecological information:
General notes:
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water

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Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Recommendation
Dilute the concentrate with water and then neutralise with a suitable alkaline material (caustic soda, lime).
European waste catalogue
06 01 04: phosphoric and phosphorous acid*
HP 8: Corrosive

cleaned plastic can:
15 01 02: plastic packaging
packaging:
15 01 01: paper and cardboard packaging
Uncleaned packaging: *15 01 10*: packaging containing residues of or contaminated by hazardous substances*
Recommendation: *Disposal must be made according to official regulations.*
Recommended cleansing agents: *Water, if necessary together with cleansing agents.*

SECTION 14: Transport information

14.1 UN number or ID number	
ADR, IMDG, IATA	*UN1805*
14.2 UN proper shipping name	
ADR	*1805 PHOSPHORIC ACID, SOLUTION*
IMDG, IATA	*PHOSPHORIC ACID, SOLUTION*
14.3 Transport hazard class(es)	
ADR, IMDG, IATA	

Class	*8 Corrosive substances.*
Label	*8*
14.4 Packing group	
ADR, IMDG, IATA	*III*
14.5 Environmental hazards:	
Marine pollutant:	*No*
14.6 Special precautions for user	*Warning: Corrosive substances.*
Hazard identification number (Kemler code):	*80*
EMS Number:	*F-A,S-B*
Segregation groups	*(SGG1) Acids*
Stowage Category	*A*
14.7 Maritime transport in bulk according to IMO instruments	*Not applicable.*

Transport/Additional information:

ADR	
Limited quantities (LQ)	*5L*
Excepted quantities (EQ)	*Code: E1* *Maximum net quantity per inner packaging: 30 ml* *Maximum net quantity per outer packaging: 1000 ml*
Transport category	*3*
Tunnel restriction code	*E*

IMDG	
Limited quantities (LQ)	*5L*
Excepted quantities (EQ)	*Code: E1* *Maximum net quantity per inner packaging: 30 ml* *Maximum net quantity per outer packaging: 1000 ml*

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UN "Model Regulation": *UN 1805 PHOSPHORIC ACID, SOLUTION, 8, III*

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.*
REGULATION (EC) No 1907/2006 ANNEX XVII *Conditions of restriction: 3*

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.

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 1 (Self-assessment): slightly 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:
26.10.2015: section 1, 8, 15 adaption to Regulation 453/2010/EC, 830/2015/EU
13.02.2018: section 8.2,13, 14
12.04.2019: section 3
10.01.2020: section 1, 8
25.05.2021: section 1, 3 ,15, 16
15.03.2022: section 2, 15
22.03.2024: section 7, 11, 14
Information referred to in Annex I, point 1.3.4.2 of Regulation 1272/2008/EC:

Relevant phrases
H290 May be corrosive to metals.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
Contact: *Dr. M. Probst*
Abbreviations and acronyms:
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organisation
ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)
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

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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
Met. Corr.1: Corrosive to metals – Category 1
Acute Tox. 4: Acute toxicity – Category 4
Skin Corr. 1B: Skin corrosion/irritation – Category 1B
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Safety data sheet *SD3041*