

Safety data sheet

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

Printing date 16.05.2024

Version number 8

Revision: 16.05.2024

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

1.1 Product identifier**Trade name:** ISO-Flux "ELS 3320"; ISO-Flux "ELI 3320"**UFI:** 5VS8-P0C6-2006-1W5V**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:**

Tel.: +49(0)208/85035-29

(mo-thu. 8:00-16:00/fr. 8:00-13:00)

EuPCS: PC-TEC-24

SECTION 2: Hazards identification

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

GHS02 flame

Flam. Liq. 2 H225 Highly flammable liquid and vapour.

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**

GHS02 GHS05

Signal word *Danger***Hazard-determining components of labelling:***succinic acid**2-phenoxyethanol***Hazard statements***H225 Highly flammable liquid and vapour.**H318 Causes serious eye damage.***Precautionary statements***P101 If medical advice is needed, have product container or label at hand.**P102 Keep out of reach of children.**P103 Read carefully and follow all instructions.**P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.*

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- P241 Use explosion-proof [electrical/ventilating/lighting] equipment.
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.
P310 Immediately call a POISON CENTER/doctor.
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**

GHS02 GHS05

Signal word *Danger***Hazard-determining components of labelling:***succinic acid**2-phenoxyethanol***Hazard statements***H318 Causes serious eye damage.***Precautionary statements***P101 If medical advice is needed, have product container or label at hand.**P102 Keep out of reach of children.**P103 Read carefully and follow all instructions.**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.***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:***Solvent mixture with additives**Mixture: consisting of the following components.*

Dangerous components:		
CAS: 64-17-5 EINECS: 200-578-6 Index number: 603-002-00-5 Reg.nr.: 01-2119457610-43	ethanol ⚠ Flam. Liq. 2, H225; ⚠ Eye Irrit. 2, H319	50-100%
CAS: 110-15-6 EINECS: 203-740-4 Reg.nr.: <1t/year	succinic acid ⚠ Eye Dam. 1, H318	<3%
CAS: 122-99-6 EINECS: 204-589-7 Index number: 603-098-00-9 Reg.nr.: 01-2119488943-21	2-phenoxyethanol ⚠ Eye Dam. 1, H318; ⚠ Acute Tox. 4, H302; STOT SE 3, H335 ATE: LD50 oral: 1,394 mg/kg	<5%
CAS: 107-41-5 EINECS: 203-489-0 Index number: 603-053-00-3 Reg.nr.: 01-2119539582-35	2-methylpentane-2,4-diol ⚠ Repr. 2, H361d; ⚠ Skin Irrit. 2, H315; Eye Irrit. 2, H319	<3%

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:** Take affected persons out into the fresh air.**After inhalation:** Supply fresh air; consult doctor in case of complaints.

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After skin contact:*Immediately rinse with water.**If skin irritation continues, consult a doctor.***After eye contact:***Rinse opened eye for several minutes under running water.**Seek medical treatment.***After swallowing:***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.***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 fire with alcohol resistant foam.***For safety reasons unsuitable extinguishing agents:** *Water with full jet***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:***Do not allow product to reach sewage system or any water course.**Inform respective authorities in case of seepage into water course or sewage system.**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).**Ensure adequate ventilation.**Do not flush with water or aqueous cleansing agents***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** *Keep away from heat and direct sunlight.***Information about fire - and explosion protection:***Keep ignition sources away - Do not smoke.**Protect against electrostatic charges.***7.2 Conditions for safe storage, including any incompatibilities****Storage:****Requirements to be met by storerooms and receptacles:** *Store in a cool location.***Information about storage in one common storage facility:***Store away from foodstuffs.**Store away from flammable substances.***Further information about storage conditions:***Protect from frost.**Keep container tightly sealed.**Store in cool, dry conditions in well sealed receptacles.***Storage class: 3****7.3 Specific end use(s)** *No further relevant information available.*

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SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with limit values that require monitoring at the workplace:

64-17-5 ethanol

AGW (Germany)	Long-term value: 380 mg/m ³ , 200 ppm 4(I);DFG, Y
WEL (Great Britain)	Long-term value: 1920 mg/m ³ , 1000 ppm
OEL (Ireland)	Short-term value: 1000 ppm

110-15-6 succinic acid

AGW (Germany)	Long-term value: 2 E mg/m ³ 2(I);DFG, Y
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107-41-5 2-methylpentane-2,4-diol

MAK (Germany)	Long-term value: 49 mg/m ³ , 10 ppm vgl. Abschn. Xc; Dampf und Aerosol
WEL (Great Britain)	Short-term value: 123 mg/m ³ , 25 ppm Long-term value: 123 mg/m ³ , 25 ppm
OEL (Ireland)	Short-term value: 125 mg/m ³ , 25 ppm

122-99-6 2-phenoxyethanol

AGW (Germany)	Long-term value: 5.7 mg/m ³ , 1 ppm 1(I);DFG, Y, 11
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Regulatory information

AGW (Germany): TRGS 900

WEL (Great Britain): EH40/2020

OEL (Ireland): 2024 CoP for the Safety, Health and Welfare at Work

MAK (Germany): MAK- und BAT-Liste

recommended monitoring procedures in accordance with 2020/878/EU no. 8.1.2:

64-17-5 ethanol: MétroPol Fiche 017, Alcool éthylique(F); DFG (D) Lösungsmittelgemische Methode Nr. 6(D,E); BIA 7330 Ethanol(D)

122-99-6 2-Phenoxyethanol: BIA 8332(D)

107-41-5 2-Methyl-2,4-pentandiol: OSHA PV 2101(E) "Hexylene glycol"

Additional information: The lists valid during the making were used as basis.

8.2 Exposure controls

Appropriate engineering controls

Ensure adequate ventilation.

Explosion protection required. Extinguish all open flames. Eliminate ignition sources. Avoid sparking.

Take measures against electrostatic charging. Earth all equipment.

Remove vapours using suitable extraction equipment.

Individual protection measures, such as personal protective equipment

General protective and hygienic measures:

Do not eat, drink, smoke or sniff while working.

Be sure to clean skin thoroughly after work and before breaks.

Respiratory protection:

Use suitable respiratory protective device in case of insufficient ventilation.

Filter AP2

Hand protection

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Material of gloves

Butyl rubber, BR

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: ≥ 0.5 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**

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Not suitable are gloves made of the following materials: *Natural rubber, NR*
Eye/face protection



Tightly sealed goggles

Body protection:

Protective work clothing

Solvent 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	78 °C
Flammability	Not applicable.
Lower and upper explosion limit	
Lower:	3.5 Vol %
Upper:	15.0 Vol %
Flash point:	13 °C
Auto-ignition temperature:	425 °C
Decomposition temperature:	Not determined.
pH	Not determined.
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:	59 hPa
Density and/or relative density	
Density at 20 °C:	0.81 g/cm ³
Relative density	Not determined.
Vapour density	Not determined.

9.2 Other information

Appearance:	
Form:	Fluid
Important information on protection of health and environment, and on safety.	
Ignition temperature:	Product is not selfigniting.
Explosive properties:	Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
Solvent content:	
Organic solvents:	94.9 %
VOC (EC)	94.95 %
Solids content:	2.7 %
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	Highly flammable liquid and vapour.
Flammable solids	Void
Self-reactive substances and mixtures	Void
Pyrophoric liquids	Void
Pyrophoric solids	Void

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Self-heating substances and mixtures	Void
Substances and mixtures, which emit flammable gases in contact with water	Void
Oxidising liquids	Void
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 and stored according to specifications.
- 10.3 Possibility of hazardous reactions** Forms flammable gases/fumes.
- 10.4 Conditions to avoid** No further relevant information available.
- 10.5 Incompatible materials:** No further relevant information available.
- 10.6 Hazardous decomposition products:**
Flammable gases/vapours
Carbon monoxide and carbon dioxide

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 69,700 mg/kg

7646-85-7 zinc chloride

Oral LD50 1,100-1,260 mg/kg (rat)

12125-02-9 ammonium chloride

Oral LD50 1,650 mg/kg (rat)

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 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.

Other information: The product is biodegradable.

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.

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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 1 (German Regulation) (Self-assessment): slightly hazardous for water**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***Must not be disposed together with household garbage. Do not allow product to reach sewage system.***European waste catalogue***14 06 03*: other solvents and solvent mixtures**HP3: Flammable**cleaned plastic can:**15 01 02: plastic packaging**overpack:**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**

UN1170

14.2 UN proper shipping name**ADR**

1170 ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)

IMDG

ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)

IATA

ETHANOL SOLUTION

14.3 Transport hazard class(es)**ADR, IMDG, IATA****Class**

3 Flammable liquids.

Label

3

14.4 Packing group**ADR, IMDG, IATA**

II

14.5 Environmental hazards:**Marine pollutant:**

No

14.6 Special precautions for user

Warning: Flammable liquids.

Hazard identification number (Kemler code):

33

EMS Number:

F-E,S-E

Stowage Category

A

14.7 Maritime transport in bulk according to IMO instruments

Not applicable.

Transport/Additional information:**ADR****Limited quantities (LQ)**

1L

Excepted quantities (EQ)

Code: E2

*Maximum net quantity per inner packaging: 30 ml**Maximum net quantity per outer packaging: 500 ml***Transport category**

2

Tunnel restriction code

D/E

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IMDG**Limited quantities (LQ)**

1L

Excepted quantities (EQ)

Code: E2

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 500 ml

UN "Model Regulation":

UN 1170 ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION), 3, II

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.***Seveso category P5c** **FLAMMABLE LIQUIDS****Qualifying quantity (tonnes) for the application of lower-tier requirements** 5,000 t**Qualifying quantity (tonnes) for the application of upper-tier requirements** 50,000 t**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:**

02.10.2015: Section 1, 8, 15 adaptation to regulation 453/2010/EC, 830/2015/EU, 18/2012/EU

21.09.2017: Section 13

14.05.2018: Section 13

31.10.2019: Section 1

19.08.2021: Section 1, 15, 16

19.02.2024: section 15

16.05.2024: section 3

Information referred to in Annex I, point 1.3.4.2 of Regulation 1272/2008/EC:**Relevant phrases**H225 *Highly flammable liquid and vapour.*H302 *Harmful if swallowed.*H315 *Causes skin irritation.*H318 *Causes serious eye damage.*H319 *Causes serious eye irritation.*H335 *May cause respiratory irritation.*H361d *Suspected of damaging the unborn child.*

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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**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**Flam. Liq. 2: Flammable liquids – Category 2**Acute Tox. 4: Acute toxicity – Category 4**Skin Irrit. 2: Skin corrosion/irritation – Category 2**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**STOT SE 3: Specific target organ toxicity (single exposure) – Category 3***Safety data sheet SD3178**

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