

Safety data sheet

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

Printing date 23.05.2024

Version number 9

Revision: 23.05.2024

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

1.1 Product identifier**Trade name:** Cable fluxes ISO-Flux "KF-32"**UFI:** W1F8-W0D5-F00U-PVRR**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**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.

GHS08 health hazard

Repr. 2 H361d Suspected of damaging the unborn child.

GHS07

*Eye Irrit. 2 H319 Causes serious eye irritation.**STOT SE 3 H336 May cause drowsiness or dizziness.***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 GHS07 GHS08

Signal word Danger**Hazard-determining components of labelling:**

propan-2-ol

2-methylpentane-2,4-diol

Hazard statements*H225 Highly flammable liquid and vapour.**H319 Causes serious eye irritation.**H361d Suspected of damaging the unborn child.**H336 May cause drowsiness or dizziness.*

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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.
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.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
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**

GHS02 GHS07 GHS08

Signal word *Danger***Hazard-determining components of labelling:**

propan-2-ol
2-methylpentane-2,4-diol

Hazard statements

H361d Suspected of damaging the unborn child.
H336 May cause drowsiness or dizziness.

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.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
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: 67-63-0 EINECS: 200-661-7 Index number: 603-117-00-0 Reg.nr.: 01-2119457558-25	propan-2-ol ⚠ Flam. Liq. 2, H225; ⚠ Eye Irrit. 2, H319; STOT SE 3, H336	50-100%
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	
CAS: 124-04-9 EINECS: 204-673-3 Index number: 607-144-00-9 Reg.nr.: <1t/year	adipic acid ⚠ Eye Irrit. 2, H319	<5%

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.

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After inhalation: Supply fresh air; consult doctor in case of complaints.**After skin contact:**

Wash with polyethylene glycol and ethanol (2:1). Then wash thoroughly with water and soap.

If skin irritation continues, consult a doctor.

After eye contact:

Rinse opened eye for several minutes under running water. Then consult a doctor.

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:**

Use fire extinguishing methods suitable to surrounding conditions.

Alcohol resistant foam

CO₂, sand, extinguishing powder. Do not use water.**For safety reasons unsuitable extinguishing agents:** Water**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 clothing.

Wear protective equipment. Keep unprotected persons away.

6.2 Environmental precautions: 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

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

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 flammable substances.

Store away from foodstuffs.

Further information about storage conditions:

Protect from frost.

Protect from heat and direct sunlight.

Keep container tightly sealed.

Store in cool, dry conditions in well sealed receptacles.

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Storage class: 3

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:

67-63-0 propan-2-ol

AGW (Germany)	Long-term value: 500 mg/m ³ , 200 ppm 2(II);DFG, Y
WEL (Great Britain)	Short-term value: 1250 mg/m ³ , 500 ppm Long-term value: 999 mg/m ³ , 400 ppm
OEL (Ireland)	Short-term value: 400 ppm Long-term value: 200 ppm Skin

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

124-04-9 adipic acid

AGW (Germany)	Long-term value: 2 E mg/m ³ 2(I);DFG, Y
OEL (Ireland)	Long-term value: 5 mg/m ³

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:

67-63-0 propan-2-ol: BIA 8415(D), MétroPol Fiche 077 Alcools en C3 à C8(F), MTA/MA-016/A89(ESP), DFG (D, E)

Solvent mixtures 6

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

Ingredients with biological limit values:

67-63-0 propan-2-ol

BGW (Germany)	25 mg/l Untersuchungsmaterial: Vollblut Probennahmezeitpunkt: Expositionsende bzw. Schichtende Parameter: Aceton
	25 mg/l Untersuchungsmaterial: Urin Probennahmezeitpunkt: Expositionsende bzw. Schichtende Parameter: Aceton

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.

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:

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Avoid contact with the eyes.

Avoid contact with the eyes and skin.

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Respiratory protection:*Use suitable respiratory protective device when high concentrations are present.*

Filter AP2

Hand protection

Protective gloves

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

Butyl rubber, BR

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

Tightly sealed goggles

Body protection: Solvent resistant protective clothing

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties**General Information**

Colour: Light orange colour

Odour: Characteristic

Melting point/freezing point: < -90 °C

Boiling point or initial boiling point and boiling range 82 °C

Lower and upper explosion limit

Lower: 2.0 Vol %

Upper: 12.0 Vol %

Flash point: 13 °C

Auto-ignition temperature: 180 °C

Solubility

water: Not miscible or difficult to mix.

Vapour pressure at 20 °C: 43 hPa

Density and/or relative density

Density at 20 °C: 0.85 g/cm³**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: 80.0 %

VOC (EC) 80.00 %

Information with regard to physical hazard classes

Explosives Void

Flammable gases Void

Aerosols Void

Oxidising gases Void

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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
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: Stable until boiling point.
- 10.3 Possibility of hazardous reactions**
Can form explosive mixtures in air if heated above flash point and/or when sprayed or atomised.
- 10.5 Incompatible materials:** No further relevant information available.
- 10.6 Hazardous decomposition products:** Flammable gases/vapours

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.
Skin corrosion/irritation Based on available data, the classification criteria are not met.
Serious eye damage/irritation
 Causes serious eye irritation.
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 the unborn child.
STOT-single exposure
 May cause drowsiness or dizziness.
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 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

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

HP4: Irritant - skin irritation and eye damage

HP5: Specific Target Organ Toxicity (STOT)/Aspiration Toxicity

HP10: Toxic for reproduction

cleaned sales packaging:

15 01 02: plastic packaging

overpack:

15 01 01: paper and cardboard packaging

Uncleaned packaging:

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

UN1219

14.2 UN proper shipping name

ADR

1219 ISOPROPANOL (ISOPROPYL ALCOHOL) mixture

IMDG, IATA

ISOPROPANOL (ISOPROPYL ALCOHOL) mixture

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-D

Stowage Category

B

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

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

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UN "Model Regulation":

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UN 1219 ISOPROPANOL (ISOPROPYL ALCOHOL) MIXTURE,
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

<i>None of the ingredients is listed.</i>

REGULATION (EU) 2019/1148

Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))

<i>None of the ingredients is listed.</i>

Annex II - REPORTABLE EXPLOSIVES PRECURSORS
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<i>None of the ingredients is listed.</i>

Regulation (EC) No 273/2004 on drug precursors

<i>None of the ingredients is listed.</i>

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

<i>None of the ingredients is listed.</i>

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:

16.06.2015: *adapation to Regulation 453/2010/EC appendix II*26.04.2016: *adapation to Regulation 830/2015/EU, 2012/18/EU*08.06.2018: *adapation to Regulation 2016/918/EU; section 13*06.12.2018: *section 6, 14*25.05.2020: *section 1*09.03.2021: *section 11, 15, 16*06.10.2022: *section 15*23.05.2024: *section 2, 3, 16*

Information referred to in Annex I, point 1.3.4.2 of Regulation 1272/2008/EC:

Relevant phrases

H225 *Highly flammable liquid and vapour.*H315 *Causes skin irritation.*H319 *Causes serious eye irritation.*H336 *May cause drowsiness or dizziness.*H361d *Suspected of damaging the unborn child.*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)*

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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)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

ATE: Acute toxicity estimate values

Flam. Liq. 2: Flammable liquids – Category 2

Skin Irrit. 2: Skin corrosion/irritation – Category 2

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

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