

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

FINO DEOXYD

REF 42060

REACH Registration Number: -
CAS No: 85392-66-1
EC No: 286-925-2

1.2. Relevant identified uses of the substance or mixture and uses advised against**Use of the substance/mixture**

Flux for soldering precious metal alloys as well as precious metal alloys to non-precious metal alloys.
Auxiliary for manufacture of dental prothesis

1.3. Details of the supplier of the safety data sheet

Company name: FINO GmbH
Street: Mangelsfeld 18
Place: D-97708 Bad Bocklet
Telephone: +49-97 08-90 94 20
e-mail: info@fino.com
Contact person: Joachim Mahlmeister
e-mail: info@fino.com
Responsible Department: This number can only be reached during our office hours, Monday to Friday from 8 a.m. to 5 p.m.

Telefax: +49-97 08-90 94 21

Internet: www.fino.com

Telephone: +49-97 08-90 94 20

1.4. Emergency telephone number:

+49-89-1 92 40
POISON CENTER München
24 hour(s) 7 day(s)

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture****GB CLP Regulation**

Acute Tox. 4; H302
Repr. 2; H361d

Full text of hazard statements: see SECTION 16.

2.2. Label elements**GB CLP Regulation****Hazard components for labelling**

Dihydroxy Difluoro potassium borate (1 -)

Signal word: Warning

Pictograms:**Hazard statements**

H302 Harmful if swallowed.
H361d Suspected of damaging the unborn child.

Precautionary statements

P201 Obtain special instructions before use.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/protective clothing.

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IF exposed or concerned: Get medical advice/attention.

P501

Dispose of contents/container to Dispose of waste according to applicable legislation..

Additional advice on labelling

Classification according to Regulation (EC) No 1272/2008 [CLP]

Physical hazards: Review of test data acc. Annex I, Part 2

Hazard statements for environmental hazards Calculation method in accordance with Annex I, Part 3, 4 and 5.

2.3. Other hazards

No data available.

SECTION 3: Composition/information on ingredients
3.2. Mixtures
Chemical characterization

Complex potassium-hydroxo-fluoro-borate.

Sum formula:

H2BF2KO2

Molecular weight:

121,92 g/mol

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (GB CLP Regulation)			
85392-66-1	Dihydroxy Difluoro potassium borate (1 -)			> 50 - < 70 %
	286-925-2		01-2119980037-35	
	Repr. 2, Acute Tox. 4; H361d H302			

Full text of H and EUH statements: see section 16.

Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
		Specific Conc. Limits, M-factors and ATE	
85392-66-1	286-925-2	Dihydroxy Difluoro potassium borate (1 -)	> 50 - < 70 %
	oral: LD50 = 608 mg/kg		

SECTION 4: First aid measures
4.1. Description of first aid measures
General information

Seek medical attention if problems persist. Take off immediately all contaminated clothing and wash it before reuse.

After inhalation

Provide fresh air. Remove persons to safety.

After contact with skin

After contact with skin, wash immediately with plenty of water and soap. In case of skin irritation, consult a physician.

After contact with eyes

In case of contact with eyes, rinse immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing.

In case of eye irritation consult an ophthalmologist.

After ingestion

Rinse mouth immediately and drink plenty of water. Let water be drunken in little sips (dilution effect). Never give anything by mouth to an unconscious person or a person with cramps. Do NOT induce vomiting.

4.2. Most important symptoms and effects, both acute and delayed

No data available.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures**5.1. Extinguishing media****Suitable extinguishing media**

Carbon dioxide (CO₂), Extinguishing powder

In case of major fire and large quantities: Water spray jet, alcohol resistant foam

Unsuitable extinguishing media

Full water jet

5.2. Special hazards arising from the substance or mixture

In case of fire may be liberated: Hydrogen fluoride; Hydrogen

5.3. Advice for firefighters

Co-ordinate fire-fighting measures to the fire surroundings. In case of fire: Wear self-contained breathing apparatus. Full protection suit

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures****General advice**

Avoid contact with skin, eyes and clothes.

Observe precautionary regulations. Safe handling: see section 7 Personal protection equipment: see section 8

For non-emergency personnel

Emergency procedures

Remove victim out of the danger area. Remove persons to safety. The danger areas must be delimited and identified using relevant warning and safety signs.

For emergency responders

Use personal protection equipment.

6.2. Environmental precautions

Do not allow to enter sewers/surface or ground water.

Do not allow to enter into soil/subsoil.

6.3. Methods and material for containment and cleaning up**For containment**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

For cleaning up

Treat the recovered material as prescribed in the section on waste disposal.

6.4. Reference to other sections

Treat the recovered material as prescribed in the section on waste disposal.

See protective measures under point 7 and 8.

SECTION 7: Handling and storage**7.1. Precautions for safe handling****Advice on safe handling**

If local exhaust ventilation is not possible or not sufficient, the entire working area must be ventilated by technical means.

Avoid contact with eyes and skin.

Advice on protection against fire and explosion

Keep away from sources of ignition.

Advice on general occupational hygiene

The usual precautionary measures are to be adhered to when handling chemicals.

Wash hands before breaks and after work.

When using do not eat, drink or smoke.
Do not breathe gas/vapour.
Avoid contact with eyes and skin.
Remove contaminated, saturated clothing immediately.

Further information on handling

Only by qualified personnel in dental surgery or dental laboratory.
No further measures if used according to specifications.

7.2. Conditions for safe storage, including any incompatibilities
Requirements for storage rooms and vessels

Keep only in the original container.

Hints on joint storage

Do not store together with: strong oxidizing agents; Other potentially explosive hazardous substances
Unsuitable material: Aluminium Lead Zinc

Further information on storage conditions

Keep container tightly closed in a cool, well-ventilated place.
Protect from heat and direct sunlight.
Recommended storage temperature 5 - 30 °C.

SECTION 8: Exposure controls/personal protection
8.1. Control parameters
DNEL/DMEL values

CAS No	Substance			
DNEL type		Exposure route	Effect	Value
85392-66-1	Dihydroxy Difluoro potassium borate (1 -)			
Worker DNEL, long-term		dermal	systemic	500,1 mg/kg bw/day
Worker DNEL, long-term		inhalation	systemic	10,95 mg/m³
Worker DNEL, long-term		inhalation	local	18,4 mg/m³
Consumer DNEL, long-term		oral	systemic	1,46 mg/kg bw/day
Consumer DNEL, acute		oral	systemic	1,46 mg/kg bw/day
Consumer DNEL, long-term		dermal	systemic	250,39 mg/kg bw/day
Consumer DNEL, long-term		inhalation	systemic	5,11 mg/m³
Consumer DNEL, long-term		inhalation	local	18,4 mg/m³
Consumer DNEL, acute		inhalation	local	18,4 mg/m³

PNEC values

CAS No	Substance	
Environmental compartment	Value	
85392-66-1	Dihydroxy Difluoro potassium borate (1 -)	
Freshwater	2,02 mg/l	
Freshwater (intermittent releases)	13,7 mg/l	
Marine water	2,02 mg/l	
Marine water (intermittent releases)	13,7 mg/l	
Micro-organisms in sewage treatment plants (STP)	10 mg/l	
Soil	5,4 mg/kg	

Additional advice on limit values

If local exhaust ventilation is not possible or not sufficient, the entire working area must be ventilated by technical means.

8.2. Exposure controls

Appropriate engineering controls

If local exhaust ventilation is not possible or not sufficient, the entire working area must be ventilated by technical means.

Individual protection measures, such as personal protective equipment
Eye/face protection

Tightly sealed safety glasses. Protective Goggles (EN 166)

Hand protection

Before starting work, apply solvent-resistant skincare preparations.

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

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 can not be calculated in advance and has therefore to be checked prior to the application.

Pull-over gloves of rubber. EN ISO 374 After cleaning apply high-fat content skin care cream.

The precise time of rupture can be found out from the manufacturer of the protective gloves and must be observed.

Skin protection

When handling with chemical substances, protective clothing with CE-labels including the four control digits must be worn.

Respiratory protection

Full-face mask or mouthpiece with particulate filter: maximum use concentration for substances with exposure

limits: P1 filter: up to a max. of 4 times the exposure limit. P2 filter: up to a max. of 15 times the exposure limit.

P3 filter: up to a max. of Extract vapours and lead to the open.

Environmental exposure controls

No data available.

SECTION 9: Physical and chemical properties
9.1. Information on basic physical and chemical properties

Physical state:	solid
Colour:	brown
Odour:	odourless

Test method
Changes in the physical state

Melting point/freezing point: 500 °C

Boiling point or initial boiling point and boiling range: 110 °C

Softening point: not determined

Flammability

Solid/liquid: not applicable

Explosive properties

not explosive according to EU A.14

Auto-ignition temperature: not applicable

Self-ignition temperature

Solid:

Product is not selfigniting.

Decomposition temperature:

not determined

pH-Value (at 20 °C):

5,5

Viscosity / dynamic:
(at 20 °C)

150 - 250 mPa·s

Water solubility:

500 g/L

Partition coefficient n-octanol/water:

not determined

Density (at 20 °C):

1,6 g/cm³

Relative vapour density:

not determined

9.2. Other information
Information with regard to physical hazard classes

Sustaining combustion:

No data available ASTM D 4206

Oxidizing properties
no classification

Other safety characteristics

Solid content:

60,00 %

Evaporation rate:

not determined

Further Information
SECTION 10: Stability and reactivity
10.1. Reactivity

No data available.

10.2. Chemical stability

No information available.

10.3. Possibility of hazardous reactions

No data available.

10.4. Conditions to avoid

Protect from direct sunlight. To prevent drying-out.

10.5. Incompatible materials

Acid, sulphuric acid

10.6. Hazardous decomposition products

In case of fire: Hydrogen fluoride, Hydrogen

SECTION 11: Toxicological information
11.1. Information on hazard classes as defined in GB CLP Regulation
Acute toxicity

Harmful if swallowed.

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
85392-66-1	Dihydroxy Difluoro potassium borate (1 -)				
	oral	LD50 608 mg/kg	Rat	ECHA	OECD 401

Irritation and corrosivity

Based on available data, the classification criteria are not met.

Sensitising effects

Based on available data, the classification criteria are not met.

Carcinogenic/mutagenic/toxic effects for reproduction

Suspected of damaging the unborn child. (Dihydroxy Difluoro potassium borate (1 -))

Germ cell mutagenicity: Based on available data, the classification criteria are not met.

Carcinogenicity: 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.

Specific effects in experiment on an animal

Toxicological data are not available.

Additional information on tests

none

Practical experience

No special references.

11.2. Information on other hazards
Other information

No special precautionary measures.

SECTION 12: Ecological information
12.1. Toxicity

Do not allow uncontrolled discharge of product into the environment.

Do not allow to enter into surface water or drains.

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method
85392-66-1	Dihydroxy Difluoro potassium borate (1 -)					
	Acute fish toxicity	LC50	750 mg/l	96 h	Danio rerio (zebrafish)	ECHA
						OECD 203

12.2. Persistence and degradability

The methods for determining the biological degradability are not applicable to inorganic substances.

12.3. Bioaccumulative potential

No indication of bioaccumulation potential.

12.4. Mobility in soil

No information available.

12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to UK REACH.

The components in this formulation do not meet the criteria for classification as PBT or vPvB.

12.6. Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

12.7. Other adverse effects

No information available.

SECTION 13: Disposal considerations
13.1. Waste treatment methods

Disposal recommendations

Remove according to the regulations. The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process. Delivery to an approved waste disposal company.

List of Wastes Code - residues/unused products

060204 WASTES FROM INORGANIC CHEMICAL PROCESSES; wastes from the MFSU of bases; sodium and potassium hydroxide; hazardous waste

List of Wastes Code - used product

060204 WASTES FROM INORGANIC CHEMICAL PROCESSES; wastes from the MFSU of bases; sodium and potassium hydroxide; hazardous waste

Contaminated packaging

Non-contaminated packages may be recycled.

Handle contaminated packages in the same way as the substance itself. Delivery to an approved waste disposal company.

SECTION 14: Transport information
Land transport (ADR/RID)

14.1. UN number or ID number: UN 0000

Other applicable information (land transport)

No dangerous good in sense of this transport regulation.

Inland waterways transport (ADN)

14.1. UN number or ID number: UN 0000

Other applicable information (inland waterways transport)

No dangerous good in sense of this transport regulation.

Marine transport (IMDG)

14.1. UN number or ID number: UN 0000

Other applicable information (marine transport)

No dangerous good in sense of this transport regulation.

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID number: UN 0000

Other applicable information (air transport)

No dangerous good in sense of this transport regulation.

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

14.6. Special precautions for user

No special precautionary measures.

14.7. Maritime transport in bulk according to IMO instruments

not relevant

SECTION 15: Regulatory information
15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
EU regulatory information

Restrictions on use (REACH, annex XVII):

Entry 46

2004/42/EC (VOC): no classification

Information according to 2012/18/EU (SEVESO III): Not subject to 2012/18/EU (SEVESO III)

Additional information: 0

Additional information

The product is classified and labelled according to EC directives or corresponding national laws.

Classification according to Regulation (EC) No 1272/2008 [CLP]

National regulatory information

Employment restrictions: Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

Water hazard class (D): 1 - slightly hazardous to water

Additional information

Betriebssicherheitsverordnung (BetrSichV) ---
No further data.

15.2. Chemical safety assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information
Changes

* Data changed compared with the previous version.

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 Organization

"ICAO-TI: Technical Instructions by the ""International Civil Aviation Organization"" (ICAO)"

ADR: Accord européen sur le transport 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 Harmonized 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)

Acute Tox. 4: Acute toxicity, Hazard Category 4

Repr. 2: Reproductive toxicity, Hazard Category 2

Relevant H and EUH statements (number and full text)

H302 Harmful if swallowed.

H361d Suspected of damaging the unborn child.

Further Information

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. The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights.

Identified uses

No	Short title	LCS	SU	PC	PROC	ERC	AC	TF	Specification
1	Flussmittel	-	20	38	13	6a	7	-	85392-66-1

LCS: Life cycle stages

SU: Sectors of use

PC: Product categories

PROC: Process categories

ERC: Environmental release categories

AC: Article categories

TF: Technical functions

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)