

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

Product form : Mixture
Trade name : Silver Brazing Flux Paste

1.2. Relevant identified uses of the substance or mixture and uses advised against**1.2.1. Relevant identified uses**

Main use category : Industrial use, Professional use
Use of the substance/mixture : Soldering flux

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

LA-CO Industries Europe S.A.S.
Parc Industriel de la Plaine de
l'Ain - Allée des Combes.
01150.BLYES.France.
Phone: +33 (0)4 74 46 23 23
Fax: +33 (0)4 74 46 23 29
E-mail: info@eu.laco.com
Web: http://www.markal.com

1.4. Emergency telephone number

Emergency number : 24-hour emergency: CHEMTREC- U.S. : 1-800-424-9300 International: +1-703-527-3887

EU Member State	Officieel adviesorgaan	Adres	Noodnummer
AUSTRIA	Vergiftungsinformationszentrale (Poisons Information Centre)	Allgemeines Krankenhaus Waehringer Geurtel 18-20 1090 Wien	+43 1 406 43 43
BELARUS	The Belarus Republican Poisons Centre	Kizhevatova str. 58 Minsk 220115	+375 (0)17 201 9158
BELGIUM	Centre Anti-Poisons/Antigifcentrum c/o Hôpital Central de la Base - Reine Astrid	Rue Bruyn 1 B -1120 Bruxelles/Brussel	+32 70 245 245
BULGARIA	Национален токсикологичен информационен център National Clinical Toxicology Centre, Emergency Medical Institute "Pirogov"	21 Tolleben Boulevard 1606 SOFIA	+359 2 9154 409
CROATIA	Poisons Control Centre Institute of Medical Research & Occupational Health	Ksaverska Cesta 2 P.O. Box 291 HR-10000 Zagreb	+385 1 234 8342
CZECH REPUBLIC	Toxikologické informační středisko Clinic For Occupational Medicine, 1st Medical Faculty, Charles University	Na Bojišti 1 120 00 Praha 2	+42 2 2491 9293 +42 2 2491 5402
DENMARK	Giftlinjen Bispebjerg Hospital	Bispebjerg Bakke 23, 60, 1 DK-2400 København NV	+45 82 12 12 12 +45 35 31 55 55
ESTONIA	Mürgistusteabekeskus	Gonsiori 29 15027 Tallinn	+372 626 93 90
FINLAND	Myrkytystietokeskus	P.O.B 340 (Haartmaninkatu 4) HUS SF - 00029 Helsinki	+358 9 471 977
FRANCE	ORFILA		+33 1 45 42 59 59
GERMANY	Berliner Betrieb für Zentrale Gesundheitliche Aufgaben	Oranienburger Strasse 285 13437 Berlin	+49 30 19240
GERMANY	Informations und Beratungszentrum für Vergiftungsfälle	Kirrberger Straße, Gebäude 9 D-66421 Homburg/Saar	+49 6841 19240
GERMANY	Beratungstelle bei Vergiftungen, Klinische Toxikologie und Beratungsstelle bei Vergiftungen	Langenbeckstrasse 1 55131 Mainz	+49 6131 19240
GREECE	Poisons Information Centre	11527 Athens	+30 10 779 3777
HUNGARY	Országos Kémiai Biztonsági Intézet (National Institute of Chemical Safety) Egészségügyi Toxikológiai Tájékoztató Szolgálat (Health Toxicological Information Service)	1437 Budapest PO Box 839 1097 Budapest, Nagyváradi tér 2	+36 80 20 11 99
ICELAND	Eitrunarmiðstöðin	Eitrunarmiðstöðin 108 Reykjavík	+354 543 22 22
IRELAND	National Poisons Information Centre	Beaumont Hospital PO Box 1297 Beaumont Road 9 Dublin	+353 1 809 2166

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LATVIA	Valsts Toksikoloģijas centra Saindēšanās un zāļu informācijas centrs	2 Hipocrate Street LV 1038 Riga	+371 67 04 24 73
LITHUANIA	Apsinuodijimų kontrolės ir informacijos biuras	Siltnamiu 29 2043 Vilnius	+370 5 236 20 52/+370 687 53 378
MALTA	Medicines & Poisons Info Office	Mater Dei Hospital, Msida MSD 2090 Malta	25450000
NETHERLANDS	Nationaal Vergiftigingen Informatie Centrum National Institute for Public Health and the Environment, NB this service is only available to health professionals	Huispostnummer B.00.118, PO Box 85500 3508 GA Utrecht	+31 30 274 88 88
PORTUGAL	Centro de Informação Antivenenos Instituto Nacional de Emergência Médica (INEM)	Rua Almirante Barroso, 36 1000-013 Lisboa	808 250 143 (for use only in Portugal), +351 21 330 3284
ROMANIA	Biroul pentru Regulamentul Sanitar International si Informare Toxicologica	Str. Dr. Leonte Anastasievici Nr.1-3, Sector 5 50463 Bucuresti	+40 21 318 36 06
SLOVAKIA	Národné toxikologické informačné centrum University Hospital Bratislava	Limbová 5 833 05 Bratislava	+421 2 54 77 4 166
SPAIN	Servicio de Información Toxicológica Instituto Nacional de Toxicología, Departamento de Madrid	Calle Luis Cabrera 9 E-28002 Madrid	+34 91 562 04 20
SWEDEN	Giftinformationscentralen Swedish Poisons Information Centre, Karolinska Hospital	Box 60 500 SE-171 76 Stockholm	+46 8 33 12 31 (International) 112 (National)
SWITZERLAND	Centre Suisse d'Information Toxicologique	Freiestrasse 16 Postfach CH-8028 Zurich	+41 44 251 51 51 (International) 145 (National)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Acute Tox. 4 (Oral) H302

Skin Corr. 1B H314

Eye Dam. 1 H318

Repr. 1B H360

Full text of H-phrases: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

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

Hazard pictograms (CLP)



Signal word (CLP)

: Danger

Hazardous ingredients

: boric acid, tetrasodium pyrophosphate, potassium hydrogendifluoride, potassium fluoride

Hazard statements (CLP)

: H302 - Harmful if swallowed
H314 - Causes severe skin burns and eye damage
H360 - May damage fertility or the unborn child

Precautionary statements (CLP)

: P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P260 - Do not breathe dust, fume
P264 - Wash hands thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P280 - Wear eye protection, protective gloves, face shield, protective clothing
P301+P312 - If swallowed: Call a poison center or doctor
P301+P330+P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting
P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P308+P313 - IF exposed or concerned: Get medical advice/attention
P310 - Immediately call a POISON CENTER/doctor
P321 - Specific treatment (see First aid measures on this label)
P330 - Rinse mouth

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P405 - Store locked up

P501 - Dispose of contents/container to an approved waste disposal plant

2.3. Other hazards

PBT: not yet assessed

vPvB: not yet assessed

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
boric acid substance listed as REACH Candidate	(CAS No) 10043-35-3 (EC no) 233-139-2 (EC index no) 005-007-00-2	20 – 30	Repr. 1B, H360FD
potassium hydrogendifluoride	(CAS No) 7789-29-9 (EC no) 232-156-2 (EC index no) 009-008-00-9	20 – 30	Acute Tox. 3 (Oral), H301 Skin Corr. 1B, H314
Carbon dioxide	(CAS No) 124-38-9 (EC no) 204-696-9	10 – 20	Not classified
Potassium tetraborate tetrahydrate	(CAS No) 12045-78-2 (EC no) *601-707-2	1 – 10	Aquatic Chronic 3, H412
potassium fluoride	(CAS No) 7789-23-3 (EC no) 232-151-5 (EC index no) 009-005-00-2	1 – 10	Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Inhalation:dust,mist), H331
tetrasodium pyrophosphate	(CAS No) 7722-88-5 (EC no) 231-767-1	< 0.1	Acute Tox. 4 (Oral), H302 Eye Dam. 1, H318
Name	Product identifier	Specific concentration limits	
boric acid	(CAS No) 10043-35-3 (EC no) 233-139-2 (EC index no) 005-007-00-2	(C >= 5.5) Repr. 1B, H360FD	
potassium hydrogendifluoride	(CAS No) 7789-29-9 (EC no) 232-156-2 (EC index no) 009-008-00-9	(0.1 <= C < 1) Skin Irrit. 2, H315 (0.1 <= C < 1) Eye Irrit. 2, H319 (C >= 1) Skin Corr. 1B, H314	

Full text of R- and H-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
First-aid measures after inhalation	: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.
First-aid measures after skin contact	: Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a POISON CENTER or doctor/physician.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.
First-aid measures after ingestion	: Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician.

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

Symptoms/injuries	: May damage fertility or the unborn child.
Symptoms/injuries after inhalation	: Inhalation may cause: irritation, coughing, shortness of breath.
Symptoms/injuries after skin contact	: Causes severe skin burns and eye damage.
Symptoms/injuries after eye contact	: Causes serious eye damage.
Symptoms/injuries after ingestion	: Swallowing a small quantity of this material will result in serious health hazard. Harmful if swallowed.

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

All treatments should be based on observed signs and symptoms of distress in the patient.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Carbon dioxide. Dry powder. Foam.

Unsuitable extinguishing media : None known.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Not flammable.

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Hazardous decomposition products in case of fire	: Burning produces irritating, toxic and noxious fumes. Hydrogen fluoride. Potassium oxide. Fluorine (F). boron.
5.3. Advice for firefighters	
Firefighting instructions	: Exercise caution when fighting any chemical fire. Do not allow run-off from fire fighting to enter drains or water courses. Cool adjacent structures and containers with water spray to protect and prevent ignition.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection. Wear fire/flamm resistant/retardant clothing. Wear a self contained breathing apparatus. EN469.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Avoid all eye and skin contact and do not breathe vapour and mist.

6.1.1. For non-emergency personnel

Protective equipment : Chemical goggles or safety glasses. Wear suitable gloves. Face shield.

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Wear suitable gloves. Chemical goggles or safety glasses. Face shield.

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Stop the flow of material, if this is without risk. Contain and/or absorb spill with inert material, then place in suitable container.

Methods for cleaning up : Take up in non-combustible absorbent material and shove into container for disposal.

6.4. Reference to other sections

Section 13: disposal information. Section 7: safe handling. Section 8: personal protective equipment.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Do not breathe vapours, fume. Do not handle until all safety precautions have been read and understood. Obtain special instructions before use.

Hygiene measures : Do not eat, drink or smoke when using this product. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Comply with applicable regulations.

Storage conditions : Keep only in original container. Keep container tightly closed and in a well-ventilated place.

Incompatible products : Strong oxidizers. Strong acids. Strong bases. Halogens.

Prohibitions on mixed storage : Keep away from incompatible materials.

7.3. Specific end use(s)

Flux.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

boric acid (10043-35-3)		
Spain	VLA-ED (mg/m ³)	2 mg/m ³
Spain	VLA-EC (mg/m ³)	6 mg/m ³
Spain	Notes	vía dérmica
tetrasodium pyrophosphate (7722-88-5)		
Belgium	Remark (BE)	(pyrophosphate de)
Switzerland	Remark (CH)	(einatebarer Staub)
potassium fluoride (7789-23-3)		
EU	IOELV TWA (mg/m ³)	2.5 mg/m ³
EU	Notes	(Fluorides, inorganic)
Carbon dioxide (124-38-9)		
EU	IOELV TWA (mg/m ³)	9000 mg/m ³
EU	IOELV TWA (ppm)	5000 ppm

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Carbon dioxide (124-38-9)		
Austria	MAK (mg/m ³)	9000 mg/m ³
Austria	MAK (ppm)	5000 ppm
Austria	MAK Short time value (mg/m ³)	18000 mg/m ³ max. 3x60 min./Schicht
Austria	MAK Short time value (ppm)	10000 ppm max. 3x60 min./Schicht
Belgium	Limit value (mg/m ³)	9131 mg/m ³
Belgium	Limit value (ppm)	5000 ppm
Belgium	Short time value (mg/m ³)	54784 mg/m ³
Belgium	Short time value (ppm)	30000 ppm
Belgium	Remark (BE)	A "(dioxyde de)"
Czech Republic	Expoziční limity (PEL) (mg/m ³)	9000 mg/m ³
Czech Republic	Expoziční limity (PEL) (ppm)	5004 ppm
Czech Republic	Expoziční limity (NPK-P) (mg/m ³)	45000 mg/m ³
Czech Republic	Expoziční limity (NPK-P) (ppm)	25020 ppm
Denmark	Grænseværdie (langvarig) (mg/m ³)	9000 mg/m ³
Denmark	Grænseværdie (langvarig) (ppm)	5000 ppm
Denmark	Grænseværdie (kortvarig) (mg/m ³)	18000 mg/m ³
Denmark	Grænseværdie (kortvarig) (ppm)	10000 ppm
Finland	HTP-arvo (8h) (mg/m ³)	9000 mg/m ³
Finland	HTP-arvo (8h) (ppm)	5000 ppm
Finland	Huomautus (FI)	Räjätys- ja louhintatyöt
France	VME (mg/m ³)	9000 mg/m ³
France	VME (ppm)	5000 ppm
Germany	TRGS 900 Occupational exposure limit value (mg/m ³)	9100 mg/m ³
Germany	TRGS 900 Occupational exposure limit value (ppm)	5000 ppm
Germany	TRGS 900 Limitation of exposure peaks (mg/m ³)	18200 mg/m ³
Germany	TRGS 900 Limitation of exposure peaks (ppm)	10000 ppm
Hungary	AK-érték	9000 mg/m ³
Ireland	OEL (8 hours ref) (mg/m ³)	9000 mg/m ³
Ireland	OEL (8 hours ref) (ppm)	5000 ppm
Ireland	OEL (15 min ref) (mg/m ³)	27000 mg/m ³
Ireland	OEL (15 min ref) (ppm)	15000 ppm
Ireland	Notes (IE)	IOELV
Lithuania	IPRV (mg/m ³)	9000 mg/m ³
Lithuania	IPRV (ppm)	5000 ppm
Lithuania	Remark (LT)	Anglies dioksidas dažnai nustatomas kaip indikatorius darbo patalpose, kuriose oro teršalai susidaro dėl įmonių buvimo jose.
Netherlands	Grenswaarde TGG 8H (mg/m ³)	9000 mg/m ³
Poland	NDS (mg/m ³)	9000 mg/m ³
Poland	NDSch (mg/m ³)	27000 mg/m ³
Slovakia	NPHV (priemerná) (mg/m ³)	9000 mg/m ³
Slovakia	NPHV (priemerná) (ppm)	5000 ppm
Spain	VLA-ED (mg/m ³)	9150 mg/m ³
Spain	VLA-ED (ppm)	5000 ppm
Spain	VLA-EC (mg/m ³)	27400 mg/m ³
Spain	VLA-EC (ppm)	15000 ppm
Spain	Notes	VLI
Sweden	nivågränsvärde (NVG) (mg/m ³)	9000 mg/m ³
Sweden	nivågränsvärde (NVG) (ppm)	5000 ppm
Sweden	kortidsvärde (KTV) (mg/m ³)	18000 mg/m ³
Sweden	kortidsvärde (KTV) (ppm)	10000 ppm
Sweden	Anmärkning (SE)	40

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Carbon dioxide (124-38-9)		
United Kingdom	WEL TWA (mg/m³)	9150 mg/m³
United Kingdom	WEL TWA (ppm)	5000 ppm
United Kingdom	WEL STEL (mg/m³)	27400 mg/m³
United Kingdom	WEL STEL (ppm)	15000 ppm
Norway	Gjennomsnittsverdier (AN) (mg/m³)	9000 mg/m³
Norway	Gjennomsnittsverdier (AN) (ppm)	5000 ppm
Switzerland	VME (mg/m³)	9000 mg/m³
Switzerland	VME (ppm)	5000 ppm

8.2. Exposure controls

Appropriate engineering controls	: Avoid creating mist or spray. Emergency safety showers should be available in the immediate vicinity of any potential exposure. Eyewash stations. Either local exhaust or general room ventilation is usually required.
Personal protective equipment	: Avoid all unnecessary exposure.
Hand protection	: Wear suitable gloves resistant to chemical penetration. Use rubber gloves. EN 374.
Eye protection	: Face shield. Chemical goggles or safety glasses. EN 166.
Skin and body protection	: Wear suitable protective clothing. Impervious clothing. EN702.
Respiratory protection	: Wear appropriate mask. Use air-purifying respirator equipped with particulate filtering cartridges. EN 12083.
Other information	: Do not eat, drink or smoke when using this product.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Paste.
Colour	: white.
Odour	: odourless.
Odour threshold	: No data available
pH	: 8 - 10
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: 100 °C
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Non flammable
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: 1.6 - 1.7
Solubility	: Soluble in water.
Log Pow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

9.2. Other information

VOC content	: 0 %
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SECTION 10: Stability and reactivity

10.1. Reactivity

Thermal decomposition generates : Corrosive vapours.

10.2. Chemical stability

Stable at ambient temperature and under normal conditions of use.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

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10.4. Conditions to avoid

Extremely high or low temperatures. Moisture.

10.5. Incompatible materials

Strong acids. Strong bases. Strong oxidizing agents. Halogens.

10.6. Hazardous decomposition products

Thermal decomposition generates : Corrosive vapours. Potassium oxides. boron. Fluorine (F).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Oral: Harmful if swallowed. Dermal: Not classified. Inhalation:dust,mist: Not classified.

Silver Brazing Flux Paste	
LD50 oral rat	387
ATE CLP (oral)	387.000 mg/kg bodyweight

boric acid (10043-35-3)	
LD50 oral rat	>= 2660 mg/kg
LD50 dermal rabbit	> 2000 mg/kg
LC50 inhalation rat (mg/l)	> 2 mg/l/4h

tetrasodium pyrophosphate (7722-88-5)	
LD50 oral rat	> 300 (300 - 2000) mg/kg
LD50 oral	1825 mg/kg 2nd study rat
LD50 dermal rabbit	> 2000 mg/kg No mortality observed
LC50 inhalation rat (mg/l)	> 0.58 mg/l/4h
ATE CLP (oral)	300.000 mg/kg bodyweight

Potassium tetraborate tetrahydrate (12045-78-2)	
LD50 oral rat	3500 - 4100 mg/kg
LD50 dermal rabbit	> 2000 mg/kg
ATE CLP (oral)	3500.000 mg/kg bodyweight

potassium hydrogendifluoride (7789-29-9)	
ATE CLP (oral)	100.000 mg/kg bodyweight

potassium fluoride (7789-23-3)	
LD50 oral rat	148.5 mg/kg
LC50 inhalation rat (mg/l)	1 mg/l/4h
ATE CLP (oral)	148.500 mg/kg bodyweight
ATE CLP (dermal)	300.000 mg/kg bodyweight
ATE CLP (vapours)	1.000 mg/l/4h
ATE CLP (dust,mist)	1.000 mg/l/4h

Skin corrosion/irritation : Causes severe skin burns and eye damage.

pH: 8 - 10

Serious eye damage/irritation : Causes serious eye damage.

pH: 8 - 10

Respiratory or skin sensitisation : Not classified (Based on available data, the classification criteria are not met)

Germ cell mutagenicity : Not classified (Based on available data, the classification criteria are not met)

Carcinogenicity : Not classified (Based on available data, the classification criteria are not met)

potassium fluoride (7789-23-3)	
NOAEL (chronic, oral, animal/male, 2 years)	100 mg/kg bodyweight ppm
NOAEL (chronic, oral, animal/female, 2 years)	175 mg/kg bodyweight ppm

Reproductive toxicity : May damage fertility or the unborn child.

Specific target organ toxicity (single exposure) : Not classified (Based on available data, the classification criteria are not met)

Specific target organ toxicity (repeated exposure) : Not classified (Based on available data, the classification criteria are not met)

Aspiration hazard : Not classified (Based on available data, the classification criteria are not met)

SECTION 12: Ecological information

12.1. Toxicity

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boric acid (10043-35-3)

LC50 fish 1	>= 1.02 g/l Carassius auratus, 3 days
EC50 Daphnia 1	658 - 875 mg/l 48 hours
ErC50 (algae)	< mg/l
LOEC (chronic)	> 97 mg/l salmo gairdneri

tetrasodium pyrophosphate (7722-88-5)

LC50 fish 1	> 100 mg/l 96 h
EC50 Daphnia 1	<= 15 ppm 72 h

Potassium tetraborate tetrahydrate (12045-78-2)

LC50 fish 1	88 mg/l 96 h
EC50 Daphnia 1	242 mg/l 24 h

potassium hydrogendifluoride (7789-29-9)

LC50 fish 1	51 (51 - 340) mg/l 96 h
EC50 Daphnia 1	26 (26 - 48) mg/l 96 h

potassium fluoride (7789-23-3)

LC50 fish 1	299 mg/l 48 h
EC50 Daphnia 1	26 (26 - 48) mg/l 96 h

12.2. Persistence and degradability

boric acid (10043-35-3)

Persistence and degradability	Not readily biodegradable.
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Potassium tetraborate tetrahydrate (12045-78-2)

Persistence and degradability	Readily biodegradable.
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12.3. Bioaccumulative potential

boric acid (10043-35-3)

BCF fish 1	34 mg/l Oncorhynchus tshawytscha, 90 days at 12 degrees C
Log Pow	-0.757 at 25 degrees C

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

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PBT: not yet assessed
vPvB: not yet assessed

Component	
boric acid (10043-35-3)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Sewage disposal recommendations	: Do not dispose of waste into sewer.
Waste disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials	: Avoid release to the environment.
European List of Waste (LoW) code	: For disposal within the EC, the appropriate code according to the European Waste Catalogue (EWC) should be used.
H code	: H10 - 'Toxic for reproduction': substances and preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce non-hereditary congenital malformations or increase their incidence. H5 - 'Harmful': substances and preparations which, if they are inhaled or ingested or if they penetrate the skin, may involve limited health risks. H8 - 'Corrosive': substances and preparations which may destroy living tissue on contact.

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SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

UN-No. (ADR) : 1740
UN-No.(IATA) : 1740
UN-No. (IMDG) : 1740
UN-No.(ADN) : 1740

14.2. UN proper shipping name

Proper Shipping Name (ADR) : Hydrogendifluorides, solid, n.o.s. (Potassium Bifluoride)
Proper Shipping Name (IATA) : Hydrogendifluorides, solid, n.o.s. (Potassium Bifluoride)
Proper Shipping Name (IMDG) : HYDROGENDIFLUORIDES, SOLID, N.O.S. (Potassium Bifluoride)
Proper Shipping Name (ADN) : HYDROGENDIFLUORIDES, SOLID, N.O.S. (Potassium Bifluoride)
Transport document description (ADR) : UN 1740 HYDROGENDIFLUORIDES, SOLID, N.O.S. (Potassium Bifluoride), 8, II, (E)

14.3. Transport hazard class(es)

Class (ADR) : 8
Classification code (ADR) : C2
Class (IATA) : 8
Class (IMDG) : 8
Class (ADN) : 8
Classification code (ADN) : C2

14.4. Packing group

Packing group (ADR) : II
Packing group (IATA) : II
Packing group (IMDG) : II
Packing group (ADN) : II

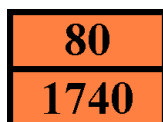
14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Special precautions for user

14.6.1. Overland transport

Hazard identification number (Kemler No.) : 80
Classification code (ADR) : C2
Orange plates :



Tunnel restriction code (ADR) : E
EAC code : 2X

14.6.2. Transport by sea

EmS-No. (Fire) : F-A
EmS-No. (Spillage) : S-B
Stowage category (IMDG) : A

14.6.3. Inland waterway transport

Carriage prohibited (ADN) : No

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

Contains no substances with Annex XVII restrictions

Silver Brazing Flux Paste is not on the REACH Candidate List

Contains substance on the REACH candidate list in concentration $\geq 0.1\%$ or with a lower specific limit: Boric acid (EC 233-139-2, CAS 10043-35-3)

Contains no REACH Annex XIV substances

VOC content : 0 %

Silver Brazing Flux Paste

Safety Data Sheet

according to Regulation (EC) No. 453/2010

Germany

Water hazard class (WGK) : 2 - hazard to waters

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

according to Regulation (EC) No. 453/2010

Indication of changes:

GHS classification information. Revised format. Revised sections: 1 - 16.

Abbreviations and acronyms:

	ACGIH (American Conference of Government Industrial Hygienists)
	ATE: Acute Toxicity Estimate
	CAS (Chemical Abstracts Service) number
	CLP: Classification, Labelling, Packaging.
	EC50: Environmental Concentration associated with a response by 50% of the test population.
	GHS: Globally Harmonized System (of Classification and Labeling of Chemicals).
	LD50: Lethal Dose for 50% of the test population
	OSHA: Occupational Safety & Health Administration
	PBT: Persistent, Bioaccumulative, Toxic
	PNEC: Predicted No Effect Level
	STEL: Short Term Exposure Limits
	TSCA: Toxic Substances Control Act
	TWA: Time Weight Average

Data sources

: ACGIH 2000. Canadian Centre for Occupational Health and Safety. Accessed at: http://www.ccohs.ca/oshanswers/legisl/whmis_classifi.html.

ESIS (European chemical Substances Information System; accessed at: <http://esis.jrc.ec.europa.eu/index.php?PGM=cla>.

European Chemicals Agency (ECHA) Registered Substances list. Accessed at <http://echa.europa.eu/>.

Krister Forsberg and S.Z. Mansdorf, "Quick Selection Guide to Chemical Protective Clothing", Fifth Edition.

National Fire Protection Association; Fire Protection Guide to Hazardous Materials; 10th edition.

OSHA 29CFR 1910.1200 Hazard Communication Standard.

REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

TSCA Chemical Substance Inventory. Accessed at <http://www.epa.gov/oppt/existingchemicals/pubs/tscainventory/howto.html>.

Other information

: None.

Full text of R-, H- and EUH-phrases:

Acute Tox. 3 (Dermal)	Acute toxicity (dermal), Category 3
Acute Tox. 3 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 3
Acute Tox. 3 (Oral)	Acute toxicity (oral), Category 3
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Chronic 3	Hazardous to the aquatic environment — Chronic Hazard, Category 3
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Repr. 1B	Reproductive toxicity, Category 1B
Repr. 1B	Reproductive toxicity, Category 1B
Skin Corr. 1B	Skin corrosion/irritation, Category 1B
H301	Toxic if swallowed
H302	Harmful if swallowed
H311	Toxic in contact with skin
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage
H331	Toxic if inhaled
H360	May damage fertility or the unborn child
H360FD	May damage fertility. May damage the unborn child
H412	Harmful to aquatic life with long lasting effects

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R22	Harmful if swallowed
R23/24/25	Toxic by inhalation, in contact with skin and if swallowed
R25	Toxic if swallowed
R34	Causes burns
R41	Risk of serious damage to eyes
R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R60	May impair fertility
R61	May cause harm to the unborn child
C	Corrosive
T	Toxic
Xi	Irritant
Xn	Harmful

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Acute Tox. 4 (Oral)	H302	On basis of test data
Skin Corr. 1B	H314	Calculation method
Eye Dam. 1	H318	Calculation method
Repr. 1B	H360	Calculation method

LA-CO EU CLP SDS

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This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product