

Silver Brazing Flux Paste

LA-CO Industries, Inc.

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
according to Canadian Hazardous Products Regulations (HPR)
Date of issue: 04/04/2011 Revision date: 03/09/2015 Supersedes: 04/04/2011
Version: 2.0

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

Use of the substance/mixture : Soldering flux

1.3. Details of the supplier of the safety data sheet

LA-CO Industries, Inc.
1201 Pratt Boulevard
Elk Grove Village, IL. 60007-5746
Phone: (847) 956-7600
Fax: (847) 956-9885
E-mail: customer_service@laco.com



1.4. Emergency telephone number

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

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification in accordance with the Globally Harmonized Standard

Acute Tox. 4 (Oral) H302
Skin Corr. 1B H314
Repr. 1B H360

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

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

Precautionary statements (GHS-US) :

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, face shield, protective clothing, protective gloves
P301+P312 - If swallowed: Call a POISON CENTER, a doctor if you feel unwell
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
P310 - Immediately call a doctor
P321 - Specific treatment (see First aid measures on this label)
P330 - Rinse mouth
P363 - Wash contaminated clothing before reuse
P405 - Store locked up
P501 - Dispose of contents/container to an approved waste disposal plant

Silver Brazing Flux Paste

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
according to Canadian Hazardous Products Regulations (HPR)

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	% (w/w)	GHS-US classification
boric acid	(CAS No) 10043-35-3	26.36 - 26.63	Repr. 1B, H360
potassium hydrogendifluoride	(CAS No) 7789-29-9	25.45	Acute Tox. 3 (Oral), H301 Skin Corr. 1B, H314
Potassium tetraborate tetrahydrate	(CAS No) 12045-78-2	7.88 - 7.96	Aquatic Chronic 3, H412
potassium fluoride	(CAS No) 7789-23-3	6.43	Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Inhalation:dust,mist), H331

Full text of 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.
Reactivity	: Thermal decomposition generates : Corrosive vapours.

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/flame resistant/retardant clothing. Wear a self contained breathing apparatus.

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.
------------------	--

Silver Brazing Flux Paste

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
according to Canadian Hazardous Products Regulations (HPR)

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

Silver Brazing Flux Paste		
ACGIH	Not applicable	
OSHA	Not applicable	
boric acid (10043-35-3)		
ACGIH	ACGIH TWA (mg/m ³)	2 mg/m ³
ACGIH	ACGIH STEL (mg/m ³)	6 mg/m ³
OSHA	Not applicable	
Potassium tetraborate tetrahydrate (12045-78-2)		
ACGIH	Not applicable	
OSHA	Not applicable	
potassium hydrogendifluoride (7789-29-9)		
ACGIH	Not applicable	
OSHA	Not applicable	
potassium fluoride (7789-23-3)		
ACGIH	Not applicable	
OSHA	Not applicable	

Silver Brazing Flux Paste

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
according to Canadian Hazardous Products Regulations (HPR)

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.
Eye protection	: Face shield. Chemical goggles or safety glasses.
Skin and body protection	: Wear suitable protective clothing. Impervious clothing.
Respiratory protection	: Wear appropriate mask. Use air-purifying respirator equipped with particulate filtering cartridges.
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)	: No data available
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
Log Kow	: 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 %
-------------	-------

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.

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).

Silver Brazing Flux Paste

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
according to Canadian Hazardous Products Regulations (HPR)

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Oral: Harmful if swallowed.

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

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.

Serious eye damage/irritation : Not classified

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

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

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

Potential adverse human health effects and symptoms

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.

Likely routes of exposure : Skin and eye contact;Inhalation

SECTION 12: Ecological information

12.1 Toxicity

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

Silver Brazing Flux Paste

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
according to Canadian Hazardous Products Regulations (HPR)

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.

Potassium tetraborate tetrahydrate (12045-78-2)	
Persistence and degradability	Readily biodegradable.

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. 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.

SECTION 14: Transport information

In accordance with DOT and TDG

Transport document description : UN1740 Hydrogendifluorides, solid, n.o.s. (Potassium Bifluoride), 8, II
UN-No.(DOT) : UN1740
Proper Shipping Name (DOT) : Hydrogendifluorides, solid, n.o.s. (Potassium Bifluoride)
Department of Transportation (DOT) Hazard Classes : 8 - Corrosive
Packing group (DOT) : II - Medium Danger

ADR

Transport document description : UN 1740 HYDROGENDIFLUORIDES, SOLID, N.O.S. (Potassium Bifluoride), 8, II, (E)
Proper Shipping Name (ADR) : HYDROGENDIFLUORIDES, SOLID, N.O.S. (Potassium Bifluoride)
Packing group (ADR) : II
Class (ADR) : 8 - Corrosive substances

Transport by sea

UN-No. (IMDG) : UN 1740
Proper Shipping Name (IMDG) : HYDROGENDIFLUORIDES, SOLID, N.O.S. (Potassium Bifluoride)
Class (IMDG) : 8 - Corrosive substances
Packing group (IMDG) : II

Air transport

UN-No.(IATA) : UN 1740
Proper Shipping Name (IATA) : Hydrogendifluorides, solid, n.o.s. (Potassium Bifluoride)
Class (IATA) : 8 - Corrosives
Packing group (IATA) : II

Silver Brazing Flux Paste

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
according to Canadian Hazardous Products Regulations (HPR)

SECTION 15: Regulatory information

15.1. US Federal regulations

Boric acid (10043-35-3)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Potassium tetraborate tetrahydrate (12045-78-2)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

potassium hydrogendifluoride (7789-29-9)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

potassium fluoride (7789-23-3)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

Boric acid (10043-35-3)

Listed on the Canadian DSL (Domestic Substances List) inventory.

Potassium tetraborate tetrahydrate (12045-78-2)

Not listed on the Canadian DSL (Domestic Substances List) inventory.

potassium hydrogendifluoride (7789-29-9)

Listed on the Canadian DSL (Domestic Substances List) inventory.

potassium fluoride (7789-23-3)

Listed on the Canadian DSL (Domestic Substances List) inventory.

EU-Regulations

Boric acid (10043-35-3)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Potassium tetraborate tetrahydrate (12045-78-2)

Not listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

potassium hydrogendifluoride (7789-29-9)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

potassium fluoride (7789-23-3)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations

Silver Brazing Flux Paste

All ingredients are listed in the Toxic Substances Control Act (TSCA).

All ingredients are listed on the Canadian Domestic Substances List (DSL) or Non-Domestic Substances List (NDSL).

15.3. US State regulations

potassium hydrogendifluoride (7789-29-9)

U.S. - New Jersey - Right to Know Hazardous Substance List

U.S. - New York - Right to Know List of Hazardous Chemicals

potassium fluoride (7789-23-3)

U.S. - New Jersey - Right to Know Hazardous Substance List

U.S. - New York - Right to Know List of Hazardous Chemicals

SECTION 16: Other information

Indication of changes

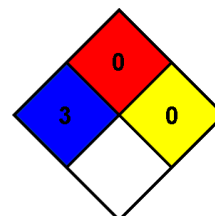
: GHS classification information. Revised format. Revised sections: 1 - 16.

Silver Brazing Flux Paste

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
according to Canadian Hazardous Products Regulations (HPR)

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 .
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. STEL: Short Term Exposure Limits. TSCA: Toxic Substances Control Act. TWA: Time Weight Average.
Other information	: None.
NFPA health hazard	: 3 - Short exposure could cause serious temporary or residual injury even though prompt medical attention was given.
NFPA fire hazard	: 0 - Materials that will not burn.
NFPA reactivity	: 0 - Normally stable, even under fire exposure conditions, and not reactive with water.



Full text of H-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
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
H331	Toxic if inhaled
H360	May damage fertility or the unborn child
H412	Harmful to aquatic life with long lasting effects

SDS Prepared by: The Redstone Group, LLC
6397 Emerald Pkwy.
Suite 200
Dublin, OH USA 43016
T 614-923-7472
www.redstonegrp.com

LACO NA GHS SDS

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