Safety Data Sheet
acc. to OSHA GHS (29 CFR 1910.1200)

Printing date: 02/08/2017 Revision: 02/08/2017

1 Identification

· **Product identifier**

· **Trade name: Stay Silv® White Paste Brazing Flux**

· **Other means of identification:**
· **SDS Number:** 0134

· **Recommended use and restriction on use**
· **Recommended use:** Metal Brazing
· **Restrictions on use:** No relevant information available.

· **Manufacturer/Importer/Supplier/Distributor information**
· **Manufacturer/Supplier:**
Harris Products Group
4501 Quality Place
Mason, Ohio 45040 US
513-754-2000

· **Safety Data Sheet Questions:** salesinfo@jwharris.com
· **Arc Welding Safety Information:** www.lincolnelectric.com/safety

· **24-Hour Emergency Response Telephone Numbers:**
USA/Canada/Mexico: +1 (888) 609-1762
Americas/Europe: +1 (216) 383-8962
Asia Pacific: +1 (216) 383-8966
Middle East/Africa: +1 (216) 383-8969

· **3E Company Access Code:** 333988

2 Hazard(s) identification

Classified according to the criteria of the Globally Harmonized System of Classification and Labeling of Chemicals (GHS), OSHA Hazard Communication Standard (29 CFR 1910.1200) and the Canadian Controlled Products Regulations.

· **Classification of the substance or mixture**


GHS08 Health hazard

Repr. 2 H361 Suspected of damaging fertility or the unborn child. Route of exposure: Oral.


GHS07

Acute Tox. 4 H302 Harmful if swallowed.
Acute Tox. 4 H312 Harmful in contact with skin.
Acute Tox. 4 H332 Harmful if inhaled.

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· **Label elements**
· **GHS label elements**
The product is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms:**

GHS07 GHS08

· **Signal word:** Warning
· **Hazard-determining components of labeling:**
potassium difluorodihydroxyborate(1-)
potassium fluoride
· **Hazard statements:**
H302 Harmful if swallowed.
H312 Harmful in contact with skin.
H332 Harmful if inhaled.
H361 Suspected of damaging fertility or the unborn child. Route of exposure: Oral.
· **Precautionary statements:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P261 Avoid breathing dust.
P264 Wash thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P330 Rinse mouth.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P362+P364 Take off contaminated clothing and wash it before reuse.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
· **Additional information:**
· **Other hazards which do not result in GHS classification:**
Heat rays (infrared radiation) from flame or hot metal can injure eyes. Overexposure to brazing fumes and gases can be hazardous. Read and understand the manufacturer's instructions, Safety Data Sheet and the precautionary labels before using this product.

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**

· **Components:**		
85392-66-1	potassium difluorodihydroxyborate(1-)	>50%

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7789-23-3	potassium fluoride	20-30%

· **Additional information:**
For the listed ingredient(s), the identity and/or exact percentage(s) are being withheld as a trade secret.

4 First-aid measures

· **Description of first aid measures**
· **After inhalation:**
Move to fresh air if breathing is difficult. If breathing has stopped, perform artificial respiration and obtain medical assistance at once.
· **After skin contact:**
Rub in Calcium gluconate solution or Calcium gluconate gel immediately.
Remove contaminated clothing and wash the skin thoroughly with soap and water. For reddened or blistered skin, or thermal burns, obtain medical assistance at once.
· **After eye contact:**
Dust or fume from this product should be flushed from the eyes with copious amounts of clean, tepid water until transported to an emergency medical facility. Do not allow victim to rub or keep eyes tightly closed. Obtain medical assistance at once.
· **After swallowing:**
Rinse out mouth and then drink plenty of water.
Do not induce vomiting; immediately call for medical help.
· **Most important symptoms and effects, both acute and delayed:**
Nausea
Gastric or intestinal disorders when ingested.
Breathing difficulty
Coughing
· **Danger:**
Harmful if swallowed, in contact with skin or if inhaled.
Suspected of damaging fertility or the unborn child. Route of exposure: Oral.
Brazing hazards are complex and may include physical and health hazards such as but not limited to infrared radiation from flame or hot metal, physical strains, thermal burns due to hot metal or spatter and potential health effects of overexposure to brazing fume or dust. Refer to Section 11 for more information.
· **Indication of any immediate medical attention and special treatment needed:**
Treat symptomatically.
Medical supervision for at least 48 hours.

5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:**
As shipped, the product will not burn. In case of fire in the surroundings: use appropriate extinguishing agent.
· **For safety reasons unsuitable extinguishing agents:** For metal fires: Use specific agents only.
· **Special hazards arising from the substance or mixture**
Infrared radiation from flame or hot metal can ignite combustibles and flammable products.

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· **Advice for firefighters**
· **Special fire fighting procedures:**
Use standard firefighting procedures and consider the hazards of other involved materials.
· **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.
· **Additional information:**
Read and understand American National Standard Z49.1, "Safety In Welding, Cutting and Allied Processes" and National Fire Protection Association NFPA 51B, "Standard for Fire Prevention During Welding, Cutting and Other Hot Work" before using this product.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
If airborne dust and/or fume is present, use adequate engineering controls and, if needed, personal protection to prevent overexposure. Refer to recommendations in Section 8.
· **Environmental precautions**
Avoid release to the environment.
Prevent further leakage or spillage if safe to do so.
Inform respective authorities in case of seepage into water course or sewage system.
· **Methods and material for containment and cleaning up**
Clean up spills immediately, observing the precautions in the personal protective equipment of Section 8.
Avoid generating dust. Prevent product from entering any drains, sewers or water sources.
Pick up mechanically.
Send for recovery or disposal in suitable receptacles.
· **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.

7 Handling and storage

· **Handling**
· **Precautions for safe handling:**
Prevent formation of dust. Ensure good ventilation/exhaustion at the workplace. Any deposit of dust which cannot be avoided must be regularly removed. Read and understand the manufacturer's instruction and the precautionary label on the product. Refer to Lincoln Safety Publications at www.lincolnelectric.com/ safety. See American National Standard Z49.1, "Safety In Welding, Cutting and Allied Processes" published by the American Welding Society, http:// pubs.aws.org and OSHA Publication 2206 (29CFR1910), U.S. Government Printing Office, www.gpo.gov.
· **Information about protection against explosions and fires:** No special measures required.

· **Conditions for safe storage, including any incompatibilities**
· **Storage**
· **Requirements to be met by storerooms and receptacles:**
Store in closed original container in a dry place. Store away from incompatible materials. Store in accordance with local/regional/national regulations.

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· **Information about storage in one common storage facility:**
Store in accordance with local/regional/national/international regulations.
· **Specific end use(s)** No relevant information available.

8 Exposure controls/personal protection

· **Control parameters**
· **Exposure Guidelines:**
Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs) are values published by the American Conference of Government Industrial Hygienists (ACGIH). ACGIH Statement of Positions Regarding the TLVs® and BEIs® states that the TLV-TWA should be used as a guide in the control of health hazards and should not be used to indicate a fine line between safe and dangerous exposures. See Sections 2, 3, 8, 10, and 11 for information on potential fume constituents of health interest. Threshold Limit Values are figures published by the American Conference of Government Industrial Hygienists.

· **Components with limit values that require monitoring at the workplace:**

7789-23-3 potassium fluoride	
PEL (USA)	Long-term value: 2.5 mg/m³ as F
REL (USA)	Long-term value: 2.5 mg/m³ as F
TLV (USA)	Long-term value: 2.5 mg/m³ as F, BEI
EL (Canada)	Long-term value: 2.5 mg/m³ as F
LMPE (Mexico)	Long-term value: 2.5 mg/m³ A4, IBE; como F

· **Ingredients with biological limit values:**

7789-23-3 potassium fluoride	
BEI (USA)	2 mg/L Medium: urine Time: prior to shift Parameter: Fluoride (background, nonspecific) 3 mg/L Medium: urine Time: end of shift Parameter: Fluoride (background, nonspecific)

· **Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:**
The usual precautionary measures for handling chemicals should be followed.
Determine the composition and quantity of fumes and gases to which workers are exposed by taking an air sample from inside the welder's helmet if worn or in the worker's breathing zone. Improve ventilation if exposures are not below limits. See ANSI/AWS F1.1, F1.2, F1.3 and F1.5, available from the American Welding Society, www.aws.org.
Keep away from foodstuffs, beverages and feed.

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Pregnant women should strictly avoid inhalation or ingestion.
· **Engineering controls:** No relevant information available.
· **Ventilation**
Use enough ventilation, local exhaust at the the flame or heat source, or both to keep the fumes and gases from the worker's breathing zone and the general area. Train the operator to keep his head out of the fumes. Keep exposure as low as possible.
· **Breathing equipment:**
Keep your head out of fumes. Use enough ventilation and local exhaust to keep fumes and gases from your breathing zone and the general area. An approved respirator should be used unless exposure assessments are below applicable exposure limits.
· **Protection of hands:**

Thermally-protective gloves.

Suitable gloves can be recommended by the glove supplier.
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
· **Eye protection:**

Wear glasses or face shield with appropriate shading for brazing operations.

· **Body protection:** Protective work clothing
· **Limitation and supervision of exposure into the environment** No special requirements.
· **Risk management measures** No special requirements.

9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **Appearance:**	
Form:	Pasty
Color:	White
· **Odor:**	Odorless
· **Odor threshold:**	Not determined.
· **pH-value:**	Not applicable.
· **Melting point/Melting range:**	Not determined.
· **Boiling point/Boiling range:**	Not determined.
· **Flash point:**	Not applicable.
· **Flammability (solid, gaseous):**	Not determined.
· **Auto-ignition temperature:**	Not applicable.
· **Decomposition temperature:**	Not determined.
· **Danger of explosion:**	Product does not present an explosion hazard.

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· **Explosion limits**	
Lower:	Not determined.
Upper:	Not determined.
· **Vapor pressure:**	Not applicable.
· **Density:**	
Relative density:	1.5-1.7
Vapor density:	Not applicable.
Evaporation rate:	Not applicable.
· **Solubility in / Miscibility with**	
Water:	Negligible
· **Partition coefficient (n-octanol/water):**	Not determined.
· **Viscosity**	
Dynamic:	Not applicable.
Kinematic:	Not applicable.
· **Other information**	No relevant information available.

10 Stability and reactivity

· **Reactivity:** The product is non-reactive under normal conditions of use, storage and transport.
· **Chemical stability:** Stable under normal temperatures and pressures.
· **Thermal decomposition / conditions to be avoided:**
No decomposition if used and stored according to specifications.
· **Possibility of hazardous reactions**
Reacts with strong acids and alkali.
Reacts with strong oxidizing agents.
Reacts with halogenated compounds.
· **Conditions to avoid**
Excessive heat.
Prevent formation of dust.
· **Incompatible materials** Oxidizers, strong bases, strong acids
· **Hazardous decomposition products**
Hydrogen fluoride
Brazing fumes and gases cannot be classified simply. The composition and products: quantity of both are dependent upon the metal being joined, the process, procedure and filler metals and flux used. Other conditions which also influence the composition and quantity of the fumes and gases to which workers may be exposed include: coatings on the metal being joined (such as paint, plating, or galvanizing), the number of operators and the volume of the worker area, the quality and amount of ventilation, the position of the operator's head with respect to the fume and fumes from chemical fluxes used in some brazing operations.

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11 Toxicological information

· **Information on toxicological effects**
· **Inhalation**
Short-term (acute) overexposure to brazing fumes may result in discomfort such as metal fume fever, dizziness, nausea, or dryness or irritation of nose, throat, or eyes. May aggravate pre-existing respiratory problems (e.g. asthma, emphysema). Long-term (chronic) overexposure to brazing fumes can lead to siderosis (iron deposits in lung), central nervous system effects, bronchitis and other pulmonary effects.
· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**		
7789-23-3 potassium fluoride		
Oral	LD50	245 mg/kg (rat)

· **Primary irritant effect:**
· **On the skin:** Heat rays can burn skin.
· **On the eye:** Heat rays (infrared radiation) from flame or hot metal can injure eyes.
· **Sensitization:** Based on available data, the classification criteria are not met.
· **Subacute to chronic toxicity:**
Short-term (acute) overexposure to brazing fumes may result in discomfort such as metal fume fever, dizziness, nausea, or dryness or irritation of nose, throat, or eyes. May aggravate pre-existing respiratory problems (e.g. asthma, emphysema). Long-term (chronic) overexposure to brazing fumes can lead to siderosis (iron deposits in lung), central nervous system effects, bronchitis and other pulmonary effects.

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer):**
None of the ingredients are listed.

· **NTP (National Toxicology Program):**
None of the ingredients are listed.

· **OSHA-Ca (Occupational Safety & Health Administration):**
None of the ingredients are listed.

· **Other information relevant to carcinogenicity**
Cancerous lesions have been reported in persons exposed to arc rays.
· **Probable route(s) of exposure:**
Ingestion.
Inhalation.
Eye contact.
Skin contact.
· **Acute effects (acute toxicity, irritation and corrosivity):**
Harmful if swallowed, in contact with skin or if inhaled.
· **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)**
Repr. 2
· **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 fertility or the unborn child. Route of exposure: Oral.
· **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.

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· **Aspiration hazard:** Based on available data, the classification criteria are not met.

12 Ecological information

· **Toxicity**
· **Aquatic toxicity** No relevant information available.
· **Persistence and degradability** No relevant information available.
· **Bioaccumulative potential:** No relevant information available.
· **Mobility in soil:** No relevant information available.
· **Additional ecological information**
· **General notes:** Avoid release to the environment.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects** No relevant information available.

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Contact waste processors for recycling information.
The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes.

· **Uncleaned packagings**
· **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

· **UN-Number**	
· **DOT, ADR, IMDG, IATA**	Not regulated.
· **UN proper shipping name**	
· **DOT, ADR, IMDG, IATA**	Not regulated.
· **Transport hazard class(es)**	
· **DOT, ADR, IMDG, IATA**	
· **Class**	Not regulated.
· **Packing group**	
· **DOT, ADR, IMDG, IATA**	Not regulated.
· **Environmental hazards**	
· **Marine pollutant:**	No

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· **Special precautions for user**	Not applicable.
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**

· **US Federal Regulations**

None of the ingredients are listed.

· **SARA**

· **Section 313 (TRI reporting)**

None of the ingredients are listed.

· **Section 355 (extremely hazardous substances):**

None of the ingredients are listed.

· **CERCLA Hazardous Substance List (40 CFR 302.4):**

None of the ingredients are listed.

· **TSCA (Toxic Substances Control Act)**

All ingredients are listed.

· **Proposition 65 (California)**

· **Chemicals known to cause cancer:**

None of the ingredients are listed.

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients are listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients are listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients are listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency):**

85392-66-1	potassium difluorodihydroxyborate(1-)	I (oral)

· **IARC (International Agency for Research on Cancer):**

None of the ingredients are listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health):**

None of the ingredients are listed.

· **State Right to Know Listings**

· **US. New Jersey Worker and Community Right-to-Know Act**

potassium fluoride

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· **Canadian Domestic Substances List (DSL):**
All ingredients are listed or exempt.

16 Other information

· **Date of preparation / last revision** 02/08/2017 / -

· **Abbreviations and acronyms:**
LDLo: Lowest Lethal Dose Observed
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
Acute Tox. 4: Acute toxicity – Category 4
Repr. 2: Reproductive toxicity – Category 2

· **Sources**
Website, European Chemicals Agency (echa.europa.eu)
Website, US EPA Substance Registry Services (ofmpub.epa.gov/sor internet/registry/substreg/home/overview/home.do)
Website, Chemical Abstracts Registry, American Chemical Society (www.cas.org)
Patty's Industrial Hygiene, 6th ed., Rose, Vernon, ed. ISBN: 978-0-470-07488-6
Casarett and Doull's Toxicology: The Basic Science of Poisons, 8th Ed., Klaasen, Curtis D., ed., ISBN: 978-0-07-176923-5.
Safety Data Sheets, Individual Manufacturers

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· **Disclaimer:**
We urge each end user and recipient of this SDS to study it carefully. If necessary consult an industrial hygienist or other expert to understand this information and safeguard the environment and protect workers from potential hazards associated with the handling or use of this product.

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