



# SAFETY DATA SHEET

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

### 1.1. Product identifier

Trade name or designation of the mixture	ECO Smart Boric Acid Free Flux - Paste
Registration number	-
Synonyms	None.
Issue date	23-July-2013
Version number	01
Revision date	-
Supersedes date	-

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

Identified uses	Flux Brazing or Soldering
Uses advised against	None known.

### 1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier	Harris Products Group 4501 Quality Place Mason, Ohio 45040 US salesinfo@jwharris.com 513-754-2000
Telephone	
Distributor	
1.4. Emergency telephone number	(+ 44 808 189 0979 (United Kingdom)  (+) 1-760-476-3962 Please quote 333895

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

Classification according to Directive 67/548/EEC or 1999/45/EC as amended

Classification T;R25, C;R34

Classification according to Regulation (EC) No 1272/2008 as amended

<b>Health hazards</b>		
Acute toxicity, oral	Category 3	H301 - Toxic if swallowed.
Skin corrosion/irritation	Category 1B	H314 - Causes severe skin burns and eye damage.
Serious eye damage/eye irritation	Category 1	

### Hazard summary

<b>Physical hazards</b>	Not classified for physical hazards.
<b>Health hazards</b>	Toxic if swallowed. Causes burns.
<b>Environmental hazards</b>	Not classified for hazards to the environment.
<b>Specific hazards</b>	Causes severe skin burns and eye damage.
<b>Main symptoms</b>	Symptoms include itching, burning, redness, and tearing of eyes. Itching, redness, burning of skin. Absorbed fluoride can cause metabolic imbalances with irregular heartbeat, nausea, dizziness, vomiting and seizures.

### 2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Contains: Potassium bifluoride

Hazard pictograms



Signal word: Danger

**Hazard statements** H301 - Toxic if swallowed.  
H314 - Causes severe skin burns and eye damage.

**Precautionary statements**

**Prevention** P260 - Do not breathe gas/fumes/vapor/spray.  
P264 - Wash thoroughly after handling.  
P270 - Do not eat, drink or smoke when using this product.  
P280 - Wear protective gloves/protective clothing/eye protection/face protection.

**Response** P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting.  
P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P310 - Immediately call a POISON CENTRE or doctor/physician.  
P363 - Wash contaminated clothing before reuse.

**Storage** P405 - Store locked up.

**Disposal** P501 - Dispose of contents/container in accordance with local/regional/national/international regulations.

**Supplemental label information** Not applicable.

**2.3. Other hazards** Not a PBT or vPvB substance or mixture.

**SECTION 3: Composition/information on ingredients**

**3.2. Mixtures**

**General information**

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	INDEX No.	Notes
Potassium fluoborate	15 - 40	14075-53-7 237-928-2	-	-	#
<b>Classification:</b>	<b>DSD:</b> -				
	<b>CLP:</b> -				
Potassium bifluoride	10 - 20	7789-29-9 232-156-2	-	009-008-00-9	#
<b>Classification:</b>	<b>DSD:</b> T;R25, C;R34				
	<b>CLP:</b> Acute Tox. 3;H301, Skin Corr. 1B;H314				
Fumed silica	< 3	7631-86-9 231-545-4	-	-	
<b>Classification:</b>	<b>DSD:</b> -				
	<b>CLP:</b> -				

#: This substance has been assigned Community workplace exposure limit(s).

**Composition comments** All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume. The full text for all R- and H-phrases is displayed in section 16.

**SECTION 4: First aid measures**

**General information** Show this safety data sheet to the doctor in attendance.

**4.1. Description of first aid measures**

**Inhalation** Remove victim to fresh air. If breathing is difficult, give oxygen. Get medical attention.

**Skin contact** Immediately flush skin at least 15 minutes with plenty of water. If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Get medical attention.

**Eye contact** Immediately rinse eyes with water. Remove any contact lenses, and continue flushing eyes with running water for at least 15 minutes. Hold eyelids apart to ensure rinsing of the entire surface of the eye and lids with water. Get immediate medical attention.

**Ingestion** Rinse mouth thoroughly with water. Do not induce vomiting. If vomiting occurs, the head should be kept low so that stomach vomit doesn't enter the lungs. Never give anything by mouth to an unconscious person. Seek medical advice.

**4.2. Most important symptoms and effects, both acute and delayed** Symptoms include itching, burning, redness, and tearing of eyes. Itching, redness, burning of skin. Absorbed fluoride can cause metabolic imbalances with irregular heartbeat, nausea, dizziness, vomiting and seizures.

**4.3. Indication of any immediate medical attention and special treatment needed** Treat symptomatically. A 2.5 pct calcium gluconate gel applied topically after skin has been thoroughly washed will help reduce severity of symptoms. A 1.0 pct calcium gluconate gel solution can be used as an eye wash.

## SECTION 5: Firefighting measures

**General fire hazards** This product is not flammable.

**5.1. Extinguishing media**

**Suitable extinguishing media** Use fire-extinguishing media appropriate for surrounding materials. Water spray, foam, dry powder or carbon dioxide.

**Unsuitable extinguishing media** None known.

**5.2. Special hazards arising from the substance or mixture** Hydrogen fluoride, a corrosive and toxic gas, and other potentially hazardous fluorine-containing compounds may be released upon combustion.

**5.3. Advice for firefighters**

**Special protective equipment for firefighters** Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

**Special fire fighting procedures** Move containers from fire area if you can do so without risk.

## SECTION 6: Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**

**For non-emergency personnel** Avoid contact with skin and eyes. Wear protective clothing as described in Section 8 of this SDS. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

**For emergency responders** Keep unnecessary personnel away. Use personal protection as recommended in section 8 of the SDS.

**6.2. Environmental precautions** Do not allow to enter drains, sewers or watercourses. Reporting of releases to appropriate regulatory agencies may be required.

**6.3. Methods and material for containment and cleaning up** This product is miscible in water. Prevent product from entering drains. Do not allow material to contaminate ground water system. Scrape up spillage or absorb with absorbing material. Store in a closed container for later disposal. Neutralize spill area and wash with plenty of water.

Never return spills to original containers for re-use.

**6.4. Reference to other sections** For waste disposal, see section 13 of the SDS.

## SECTION 7: Handling and storage

**7.1. Precautions for safe handling** Provide adequate ventilation if fumes or vapours are generated. Avoid contact with skin and eyes. Avoid inhalation of fumes from heated product. Wear appropriate personal protective equipment (See Section 8). Do not eat, drink or smoke when using the product. Avoid release to the environment.

**7.2. Conditions for safe storage, including any incompatibilities** Store in tightly closed original container in a dry, cool and well-ventilated place. Keep away from food, drink and animal feeding stuffs. Store away from incompatible materials.

**7.3. Specific end use(s)** Flux Brazing or Soldering

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Occupational exposure limits

##### UK. EH40 Workplace Exposure Limits (WELs)

Components	Type	Value	Form
Fumed silica (CAS 7631-86-9)	TWA	6 mg/m <sup>3</sup>	Inhalable dust.
		2.4 mg/m <sup>3</sup>	Respirable dust.
Potassium bifluoride (CAS 7789-29-9)	TWA	2.5 mg/m <sup>3</sup>	
Potassium fluoborate (CAS 14075-53-7)	TWA	2.5 mg/m <sup>3</sup>	

##### EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU

Components	Type	Value
Potassium bifluoride (CAS 7789-29-9)	TWA	2.5 mg/m <sup>3</sup>

Components	Type	Value
Potassium fluoborate (CAS 14075-53-7)	TWA	2.5 mg/m <sup>3</sup>
<b>Biological limit values</b>	No biological exposure limits noted for the ingredient(s).	
<b>Recommended monitoring procedures</b>	Follow standard monitoring procedures.	
<b>Derived no-effect level (DNEL)</b>	Not available.	
<b>Predicted no effect concentrations (PNECs)</b>	Not available.	
<b>8.2. Exposure controls</b>		
<b>Appropriate engineering controls</b>	Provide adequate ventilation. Observe Occupational Exposure Limits and minimise the risk of inhalation. Provide eyewash station and safety shower.	
<b>Individual protection measures, such as personal protective equipment</b>		
<b>General information</b>	Personal protective equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.	
<b>Eye/face protection</b>	Wear safety glasses with side shields (or goggles).	
<b>Skin protection</b>		
<b>- Hand protection</b>	Wear chemical-resistant, impervious gloves. Suitable gloves can be recommended by the glove supplier.	
<b>- Other</b>	Wear appropriate chemical resistant clothing.	
<b>Respiratory protection</b>	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.	
<b>Thermal hazards</b>	Wear appropriate thermal protective clothing, when necessary.	
<b>Hygiene measures</b>	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.	
<b>Environmental exposure controls</b>	Contain spills and prevent releases and observe national regulations on emissions.	

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

#### Appearance

<b>Physical state</b>	Liquid.
<b>Form</b>	Paste.
<b>Colour</b>	Green. Black.
<b>Odour</b>	Not available.
<b>Odour threshold</b>	Not available.
<b>pH</b>	Not available.
<b>Melting point/freezing point</b>	Not available.
<b>Initial boiling point and boiling range</b>	Not available.
<b>Flash point</b>	Not available.
<b>Evaporation rate</b>	Not available.
<b>Flammability (solid, gas)</b>	Not available.
<b>Upper/lower flammability or explosive limits</b>	
<b>Flammability limit - lower (%)</b>	Not available.
<b>Flammability limit - upper (%)</b>	Not available.
<b>Vapour pressure</b>	Not available.
<b>Vapour density</b>	Not available.
<b>Relative density</b>	Not available.
<b>Solubility(ies)</b>	Not available.

<b>Partition coefficient (n-octanol/water)</b>	No data available.
<b>Auto-ignition temperature</b>	Not available.
<b>Decomposition temperature</b>	Not available.
<b>Viscosity</b>	Not available.
<b>Explosive properties</b>	Not available.
<b>Oxidizing properties</b>	Not available.
<b>9.2. Other information</b>	No relevant additional information available.

## SECTION 10: Stability and reactivity

<b>10.1. Reactivity</b>	Stable at normal conditions.
<b>10.2. Chemical stability</b>	Stable under normal storage and handling conditions.
<b>10.3. Possibility of hazardous reactions</b>	Corrosive to metals.
<b>10.4. Conditions to avoid</b>	Contact with incompatible materials.
<b>10.5. Incompatible materials</b>	Strong acids. Strong oxidising agents. Reactive metals. Silicate-based materials.
<b>10.6. Hazardous decomposition products</b>	Hydrogen fluoride, fluorine-, boron- and potassium-containing compounds.

## SECTION 11: Toxicological information

**General information** Occupational exposure to the substance or mixture may cause adverse effects.

### Information on likely routes of exposure

<b>Ingestion</b>	Toxic if swallowed. May cause digestive tract burns.
<b>Inhalation</b>	When heated, the vapours/fumes given off may cause respiratory tract irritation.
<b>Skin contact</b>	Causes severe skin burns.
<b>Eye contact</b>	Causes serious eye damage.

**Symptoms** Symptoms include itching, burning, redness, and tearing of eyes. Itching, redness, burning of skin. Absorbed fluoride can cause metabolic imbalances with irregular heartbeat, nausea, dizziness, vomiting and seizures.

### 11.1. Information on toxicological effects

<b>Acute toxicity</b>	Toxic if swallowed.
<b>Skin corrosion/irritation</b>	Causes severe skin burns.
<b>Serious eye damage/eye irritation</b>	Causes serious eye damage.
<b>Respiratory sensitisation</b>	No data available.
<b>Skin sensitisation</b>	This product is not expected to cause skin sensitisation.
<b>Germ cell mutagenicity</b>	No data available.
<b>Carcinogenicity</b>	Not classified.

#### IARC Monographs. Overall Evaluation of Carcinogenicity

Potassium bifluoride (CAS 7789-29-9) 3 Not classifiable as to carcinogenicity to humans.

<b>Reproductive toxicity</b>	Due to lack of data the classification is not possible.
<b>Specific target organ toxicity - single exposure</b>	Not classified.
<b>Specific target organ toxicity - repeated exposure</b>	Not classified.
<b>Aspiration hazard</b>	Not classified.
<b>Mixture versus substance information</b>	Not available.
<b>Other information</b>	Repeated exposure to fluorides may cause excessive calcification of the bone and calcification of ligaments of the ribs, pelvis and spinal column. Exposure to extremely high levels of fluorides can cause abdominal pain, diarrhea, muscular weakness, and convulsions. In extreme cases it can cause loss of consciousness and death.

## SECTION 12: Ecological information

<b>12.1. Toxicity</b>	No toxicity data noted for the ingredient(s).
<b>12.2. Persistence and degradability</b>	No data is available on the degradability of this product.

<b>12.3. Bioaccumulative potential</b>	No data available.
<b>Partition coefficient n-octanol/water (log Kow)</b>	No data available.
<b>Bioconcentration factor (BCF)</b>	Not available.
<b>12.4. Mobility in soil</b>	This product is water soluble and may disperse in soil.
<b>12.5. Results of PBT and vPvB assessment</b>	Not a PBT or vPvB substance or mixture.
<b>12.6. Other adverse effects</b>	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

<b>Residual waste</b>	Dispose of in accordance with local regulations.
<b>Contaminated packaging</b>	Since emptied containers may retain product residue, follow label warnings even after container is emptied.
<b>EU waste code</b>	Waste codes should be assigned by the user based on the application for which the product was used.
<b>Disposal methods/information</b>	This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Dispose in accordance with all applicable regulations.

## SECTION 14: Transport information

### ADR

<b>14.1. UN number</b>	UN2923
<b>14.2. UN proper shipping name</b>	CORROSIVE SOLID, TOXIC, N.O.S. (Potassium bifluoride)
<b>14.3. Transport hazard class(es)</b>	8
<b>Subsidiary class(es)</b>	6.1
<b>14.4. Packing group</b>	II
<b>14.5. Environmental hazards</b>	No
<b>Tunnel restriction code</b>	E
<b>Labels required</b>	8 +6.1
<b>14.6. Special precautions for user</b>	Read safety instructions, SDS and emergency procedures before handling.

### RID

<b>14.1. UN number</b>	UN2923
<b>14.2. UN proper shipping name</b>	Corrosive solid, toxic, n.o.s. (Potassium bifluoride)
<b>14.3. Transport hazard class(es)</b>	8
<b>Subsidiary class(es)</b>	6.1
<b>14.4. Packing group</b>	II
<b>14.5. Environmental hazards</b>	No
<b>Labels required</b>	8+6.1
<b>14.6. Special precautions for user</b>	Read safety instructions, SDS and emergency procedures before handling.

### ADN

<b>14.1. UN number</b>	UN2923
<b>14.2. UN proper shipping name</b>	Corrosive solid, toxic, n.o.s. (Potassium bifluoride)
<b>14.3. Transport hazard class(es)</b>	8
<b>Subsidiary class(es)</b>	6.1
<b>14.4. Packing group</b>	II
<b>14.5. Environmental hazards</b>	No
<b>Labels required</b>	8+6.1
<b>14.6. Special precautions for user</b>	Read safety instructions, SDS and emergency procedures before handling.

### IATA

<b>14.1. UN number</b>	UN2923
<b>14.2. UN proper shipping name</b>	Corrosive solid, toxic, n.o.s. (Potassium bifluoride)

<b>14.3. Transport hazard class(es)</b>	8
<b>Subsidiary class(es)</b>	6.1
<b>14.4. Packing group</b>	II
<b>14.5. Environmental hazards</b>	No
<b>Labels required</b>	8 +6.1
<b>ERG code</b>	8P
<b>14.6. Special precautions for user</b>	Read safety instructions, MSDS and emergency procedures before handling.

#### IMDG

<b>14.1. UN number</b>	UN2923
<b>14.2. UN proper shipping name</b>	CORROSIVE SOLID, TOXIC, N.O.S. (Potassium bifluoride)
<b>14.3. Transport hazard class(es)</b>	8
<b>Subsidiary class(es)</b>	6.1
<b>14.4. Packing group</b>	II
<b>14.5. Environmental hazards</b>	
<b>Marine pollutant</b>	No
<b>Labels required</b>	8+6.1
<b>EmS</b>	F-A, S-B
<b>14.6. Special precautions for user</b>	Read safety instructions, MSDS and emergency procedures before handling.

**14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**      This substance/mixture is not intended to be transported in bulk.

## SECTION 15: Regulatory information

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

#### EU regulations

- Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I**  
Not listed.
- Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex II**  
Not listed.
- Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended**  
Not listed.
- Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 1 as amended**  
Not listed.
- Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 2 as amended**  
Not listed.
- Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 3 as amended**  
Not listed.
- Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex V as amended**  
Not listed.
- Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry**  
Not listed.
- Regulation (EC) No. 1907/2006, REACH Article 59(1) Candidate List as currently published by ECHA**  
Not listed.

#### Authorisations

- Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorisation, as amended**  
Not listed.

#### Restrictions on use

- Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended**  
Not listed.
- Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work**  
Not regulated.

**Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breastfeeding**

Not regulated.

**Other EU regulations**

**Directive 96/82/EC (Seveso II) on the control of major-accident hazards involving dangerous substances**

Not regulated.

**Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work**

Potassium bifluoride (CAS 7789-29-9)

**Directive 94/33/EC on the protection of young people at work**

Potassium bifluoride (CAS 7789-29-9)

**Other regulations**

The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended and respective national laws implementing EC directives. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006.

Young people under 18 years old are not allow to work with this product according to the EU Directive 94/33/EC on the protection of young people at work.

**National regulations**

Follow national regulation for work with chemical agents.

**15.2. Chemical safety assessment**

No Chemical Safety Assessment has been carried out.

**SECTION 16: Other information**

**List of abbreviations**

PBT: Persistent, bioaccumulative and toxic.  
vPvB: Very Persistent and very Bioaccumulative.  
MARPOL: International Convention for the Prevention of Pollution from Ships.

**References**

ICSC  
ECHA C&L Inventory database

**Information on evaluation method leading to the classification of mixture**

The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.

**Full text of any statements or R-phrases and H-statements under Sections 2 to 15**

R25 Toxic if swallowed.  
R34 Causes burns.  
  
H301 Toxic if swallowed.  
H314 Causes severe skin burns and eye damage.

**Training information**

Follow training instructions when handling this material.

**Disclaimer**

The information in the sheet was written based on the best knowledge and experience currently available.