### SAFETY DATA SHEET – EASY-FLO™ FLUX POWDER

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

<table>
<thead>
<tr>
<th>1.1 Product Identifier</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Trade name or designation of the mixture</strong></td>
</tr>
<tr>
<td><strong>Synonyms</strong></td>
</tr>
<tr>
<td><strong>Issue date</strong></td>
</tr>
<tr>
<td><strong>Issue number</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1.2 Relevant identified uses of the substance or mixture and uses advised against</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Identified uses</strong></td>
</tr>
<tr>
<td><strong>Uses advised against</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1.3 Details of the supplier of the safety data sheet</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Company name</strong></td>
</tr>
<tr>
<td><strong>Address</strong></td>
</tr>
<tr>
<td><strong>e-mail</strong></td>
</tr>
<tr>
<td><strong>Contact person</strong></td>
</tr>
<tr>
<td><strong>Telephone number</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1.4 Emergency telephone number</th>
</tr>
</thead>
<tbody>
<tr>
<td>+44 (0) 1763 253 000</td>
</tr>
</tbody>
</table>

#### SECTION 2: Hazards Identification

<table>
<thead>
<tr>
<th>2.1 Classification of the substance or mixture</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Classification according to Regulation (EC) No. 1272/2008</strong></td>
</tr>
<tr>
<td><strong>CLP classification</strong></td>
</tr>
<tr>
<td>GHS08: Health hazard</td>
</tr>
<tr>
<td>Repr. 2: H361d Suspected of damaging the unborn child.</td>
</tr>
<tr>
<td>GHS07: Irritant</td>
</tr>
<tr>
<td>Acute Tox. 4 H302 Harmful if swallowed</td>
</tr>
<tr>
<td><strong>Classification according to Directive 67/548/EEC or 1999/45/EC as amended</strong></td>
</tr>
<tr>
<td><strong>DPD classification</strong></td>
</tr>
<tr>
<td>Xn: Harmful</td>
</tr>
<tr>
<td>R22, R63: Harmful if swallowed. Possible risk of harm to the unborn child.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hazard Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physical hazards</strong></td>
</tr>
<tr>
<td><strong>Health hazards</strong></td>
</tr>
<tr>
<td><strong>Environmental hazards</strong></td>
</tr>
<tr>
<td><strong>Specific hazards</strong></td>
</tr>
<tr>
<td><strong>Main symptoms</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2.2 Label elements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Label according to Regulation (EC) No. 1272/2008</strong></td>
</tr>
</tbody>
</table>
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Hazard Pictograms

CLP Signal word
Warning

Hazard-determining components of labelling:
potassium difluorodihydroxyborate(1-)
potassium tetraborate

Hazard Statements (CLP)
H302 Harmful if swallowed
H361d Suspected of damaging the unborn child.

Precautionary statements (CLP)
P281 Use personal protective equipment as required.
P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

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

Presence of Substances of Very High Concern (SVHC) according to REACH Regulation terms.

SECTION 3: Compositional information

3.2 Mixtures

General information

| Substance | CAS No. | EINECS No. | Hazards | % Concentration |
|-----------|---------|------------|---------|----------------|----------------|
| Potassium difluorodihydroxyborate (1-) | 85392-66-1 | 286-925-2 | Acute Tox. 4, H302 Xn, R22, R63 | 25 to 50 |
| Potassium tetraborate | 12045-78-2 | 215-575-5 | Repr. 2, H361fd Xn, R63, Repr. Cat 3 | 25 to 50 |
| Boric acid | 10043-35-3 | 233-139-2 | Repr. 1B, H360FD Xn, R22 | < 1 |

SVHCs
Boric acid CAS No. 10043-35-3 is used as an ingredient in the manufacture of this flux, but undergoes reaction with other substances during manufacture of the product, which results in the formation of the potassium difluorodihydroxyborate compound. While the boric acid should be completely reacted away during the manufacturing process some possibility of some residue of un-reacted Boric acid being present in the product cannot be excluded above the 0.1% SVHC limit.

In addition, the product is manufactured in a facility where both Boric acid CAS No. 10043-35-3 and Sodium tetraborate CAS No. 1303-96-4 are used in the manufacture of brazing fluxes and therefore the possibility of cross contamination to a level above the maximum impurity level of for both substances of 0.1% cannot be excluded.

Compositional comments
The full text for all hazard statements is displayed in Section 16. All concentrations are in percent by weight unless ingredient is a gas.

Additional information
None.

SECTION 4: First aid measures

General information
Get medical attention if any discomfort develops. Seek medical attention for all burns, regardless of how minor they may seem. Show this safety data sheet to the doctor in attendance.

4.1 Description of first aid measures

Inhalation
Remove from source of exposure and allow to rest in fresh air. In acute cases apply artificial respiration and if necessary summon medical aid.

Skin contact
Generally the product does not irritate the skin.
Eye contact
Irrigate with water or isotonic saline for up to 20 minutes. Seek medical attention if there is any hint of eye damage.

Ingestion
Rinse mouth with water & give patient water or milk mixed with calcium carbonate (chalk) to drink. Do not induce vomiting. Do not drink. Summon medical aid.

4.2 Most important symptoms and effects, both acute and delayed
In acute cases there is a danger of pulmonary oedema although this occurrence could also result from inhalation of brazing filler metal fume or torch gases.

Inhalation of the fume will be irritating to the nose and throat and will cause smarting of the eyes.

The product is toxic by ingestion, and will be irritating to the eyes.

Skin contact may cause moderate irritation.

4.3 Indication of any immediate medical attention and special treatment needed
Treat symptomatically. No specific antidote.

SECTION 5: Fire fighting measures

General fire hazards
Non-flammable.

5.1 Extinguishing media
Suitable extinguishing media
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

Unsuitable extinguishing media
Not applicable.

5.2 Special hazards arising from the substance or mixture
Hydrogen fluoride (HF).

5.3 Advice for fire-fighters
Special protective equipment for fire-fighters
Use full protection with breathing apparatus if involved in a fire as harmful fumes may be evolved.

Special fire fighting procedures
Not applicable.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
For non-emergency personnel
Avoid contact with skin or eyes.

Use personal protective equipment during clean-up operation, gloves, eye protection etc. as considered appropriate to the size and nature of the release. Do not inhale dust.

For emergency responders
Not applicable.

6.2 Environmental precautions
If product is likely to enter watercourse or sewerage system, inform necessary authorities. Product should be prevented from entering sewers, drainage systems and surface or groundwater. Dispose of all collected product / absorbent material as directed in Section 13.

6.3 Methods and material for containment and cleaning up
Scrape up as much of the spill as possible and place collected product into a suitable container for disposal. Wash contaminated area with soap and water and mop up as much as is possible.

Use absorbent material to mop up remaining diluted product. Place mopped up product and any absorbent material into a suitable container for disposal.

6.4 Reference to other sections
For safe handling see section 7.
For personal protection, see section 8.
For waste disposal, see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Use only under conditions of good local ventilation or efficient extraction systems and do not inhale fumes evolved during use.

Avoid contact with skin and eyes. Do not eat, drink, smoke or apply cosmetics whilst using these materials. Keep away from food, drink and animal feed stuffs and out of reach of children.

Wash hands with soap and water following skin contact with the product and wash hands with soap and water after handling the product even if no direct skin contact has occurred. Observe good industrial hygiene practices.
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7.2 Conditions for safe storage, including any incompatibilities
Store in a cool, dry place. Keep container closed when not in use. Do not freeze.

7.3 Specific end use(s)
No further relevant information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

<table>
<thead>
<tr>
<th>Element</th>
<th>Long term (8 hour) TWA Value</th>
<th>Short term (15 mins) TWA Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium hydrogen difluoride (10-25%)</td>
<td>2.5 mg / m³ (as fluorine)</td>
<td>-</td>
</tr>
</tbody>
</table>

TWA = Time weighted average

Biological limit values
No biological exposure limits noted for the ingredient(s).

Recommended monitoring procedures
Follow standard monitoring procedures.

8.2 Exposure controls

Appropriate engineering controls
Avoid exposure to fume by using good natural ventilation or local exhaust extraction. Local exhaust extraction systems should be tested for effectiveness to ensure adequate capture of the fume on initial installation and then checked on a regular basis to confirm on-going effectiveness.

Individual protection measures, such as personal protective equipment

- General information
  - If risk of inhalation exists, personal respiratory protection should be worn.

- Eye/face protection
  - It is recommended that safety glasses are worn when handling or using this product for brazing.

- Skin protection
  - Hand protection
    - Where regular, on-going skin contact with the product cannot be avoided suitable gloves should be worn. Seek advice from glove supplier to most suitable type of glove to protect against this type of product. Show glove supplier this Safety Data Sheet.
    - In cases where skin contact with the product may occur on an irregular basis the use of barrier creams will help to prevent skin irritation in such circumstances. Suitable gloves should also be worn where the nature of the brazing operation may result in hand contact with the molten flux or brazing filler metal to protect against burns.

- Other
  - None

- Respiratory protection
  - If risk of inhalation exists, personal respiratory protection should be worn.

- Thermal hazards
  - On heating product will fume slightly and with overheating the flux fumes will increase. The fumes produced may include hydrogen fluoride and boron trifluoride, which can cause irritation of the nasal passages, eyes and throat.

Hygiene measures
Wash hands after using these products.

Environmental exposure controls
See section 6.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- Appearance
  - White powder.

- Physical state
  - Solid

- Form
  - Powder

- Colour
  - White

- Odour
  - No detectable odour.

- Odour threshold
  - Not applicable.

- pH
  - 8 (of aqueous paste)

- Melting point/freezing point
  - Not determined.

- Initial boiling point and boiling range
  - Not determined.

- Flash point
  - Not determined.
Evaporation rate Not determined.
Flammability (Solid, gas) Not determined.
Upper/lower flammability or explosive limits
  Flammability limit – lower (%) Not determined.
  Flammability limit – upper (%) Not determined.
Vapour pressure Not determined.
Vapour density Not determined.
Relative density Not determined.
Solubility Partly soluble.
Partition coefficient (n-octanol/water) Not determined.
Decomposition temperature Not determined.
Viscosity Not applicable.
Explosive properties Product does not present an explosion hazard.
Oxidizing properties Not determined.
9.2 Other information No further relevant information available.
Bulk density Not determined.
VOC (Weight %) Not determined.

SECTION 10: Stability and reactivity

10.1 Reactivity Product is stable. Containers of powder left open may absorb moisture and become lumpy.
10.2 Chemical stability Stable at normal conditions.
10.3 Possibility of hazardous reactions
  Hazardous decomposition products Hydrogen fluoride.
10.4 Conditions to avoid Avoid contact with acids and strong oxidising agents.
10.5 Incompatible materials Avoid contact with acids and strong oxidising agents.

SECTION 11: Toxicological information

General information Occupational exposure to the substance or mixture may cause adverse effects.
Information on likely routes of exposure
  Ingestion Ingestion may cause irritation and malaise.
  Inhalation Fumes inhaled may include hydrogen fluoride and boron trifluoride, which can cause irritation of the nasal passages, eyes and throat.
  Skin contact Skin contact may cause moderate irritation. If the skin is broken immediate irritation will occur on contact.
  Eye contact Not likely given nature of product.
Symptoms Sensitisation. Irritation of nose and throat. Irritation of eyes and mucous membranes.

11.1 Information on toxicological effects

<table>
<thead>
<tr>
<th>Values relevant for classification:</th>
<th>Test</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD₅₀ (oral – rat)</td>
<td></td>
<td>300-3000 mg/kg</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Individual elements</th>
<th>Test</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium tetraborate (CAS 12045-78-2)</td>
<td>LD₅₀ (oral – rat)</td>
<td>3500-4100 mg/kg</td>
</tr>
</tbody>
</table>

Acute toxicity Not classified.
Skin corrosion/irritation: Not classified.
Respiratory sensitisation: When heated, the vapours/fumes given off may cause respiratory tract irritation.
Skin sensitisation: Not classified.
Germ cell mutagenicity: No test data available for the product.
Carcigenicity: Risk of cancer cannot be excluded with prolonged exposure.
Reproductive toxicity: Potassium tetraborate has been classified a reproductive toxin category 2, Rep. Cat 2. and is suspected of damaging fertility or the unborn child.

IARC Monographs. Overall Evaluation of Carcinogenicity: Not classified

Specific target organ toxicity – single exposure: Not applicable.
Specific target organ toxicity – repeated exposure: Not applicable.
Aspiration hazard: Not applicable.
Mixture versus substance information: None.
Other information: None.

SECTION 12: Ecological information

12.1 Toxicity: Potassium tetraborate:

<table>
<thead>
<tr>
<th>Component</th>
<th>Test</th>
<th>Method</th>
<th>Test results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium tetraborate</td>
<td>CL50</td>
<td>Daphnia (en bore (B) 48h daphnia magna straus)</td>
<td>133 mg/l</td>
</tr>
<tr>
<td>Potassium tetraborate</td>
<td>CL50 / 96h</td>
<td>Fish (en bore (B) – limanda limanda)</td>
<td>40 mg/l</td>
</tr>
</tbody>
</table>

12.2 Persistence and degradability: No further relevant information available.
12.3 Bioaccumulative potential: No further relevant information available.
12.4 Mobility in soil: No further relevant information available.
12.5 Results of PBT and vPvB assessment: Not applicable.
12.6 Other adverse effects: Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water.

SECTION 13: Disposal considerations

13.1 Waste treatment methods:
Residual waste: Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Contaminated packaging: Not applicable.
EU Waste code: Not applicable.
Disposal methods/information: Dispose according to local and national regulations. Registered waste contractors should be aware of the composition and data given in section 2 of this document.

SECTION 14: Transport information

14.1 UN number: Not classified for transport
14.2 UN proper shipping name: -
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**14.3 Transport hazard class(es)**
- 
**14.4 Packing group**
- 
**14.5 Environmental hazards**
- 
**Tunnel restriction code**
- 
**Labels required**
- 
**14.6 Special precautions for user**
- 
**Maritime transport IMDG**

<table>
<thead>
<tr>
<th>Section</th>
<th>Number</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.1 UN number</td>
<td>Not classified for transport</td>
<td></td>
</tr>
<tr>
<td>14.2 UN proper shipping name</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>14.3 Transport hazard class(es)</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>14.4 Packing group</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>14.5 Environmental hazards</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Marine pollutant</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Labels required</td>
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<td></td>
</tr>
<tr>
<td>EmS No.</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>14.6 Special precautions for user</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

**Air transport ICAO-TI and IATA-DGR**

<table>
<thead>
<tr>
<th>Section</th>
<th>Number</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.1 UN number</td>
<td>Not classified for transport</td>
<td></td>
</tr>
<tr>
<td>14.2 UN proper shipping name</td>
<td>-</td>
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</tr>
<tr>
<td>14.3 Transport hazard class(es)</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>14.4 Packing group</td>
<td>-</td>
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</tr>
<tr>
<td>14.5 Environmental hazards</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Labels required</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>ERG Code</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>14.6 Special precautions for user</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

### SECTION 15: Regulatory information

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

- **EU Regulations**: Not listed under REACH Article 59(1) Candidate List as currently published by ECHA.
- **Authorisations**: Not listed.
- **Restrictions on use**: No restrictions on use.
- **Other EU regulations**: Not regulated.
- **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.
- **National regulations**: Not listed.
- **Water hazard class**: Water hazard class 1 (Self-assessment): slightly hazardous for water.
- **Substances of very high concern (SVHC) according to REACH article 57**: None.
- **Chemical safety assessment**: No Chemical Safety Assessment has been carried out.
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SECTION 16: Other information

List of abbreviations

- **AOEL**: Acceptable Operator Exposure Limit.
- **ACGIH**: American Conference of Governmental Industrial Hygienists.
- **CAS**: Chemical Abstracts Service.
- **EC**: European Community.
- **GHS**: Globally Harmonised System of classification and labelling of chemicals.
- **HSE**: Health & Safety Executive.
- **IARC**: International Agency for Research on Cancer.
- **IATA**: International Air Transport Association.
- **IBC**: Intermediate Bulk Container.
- **LC**: Lethal Concentration.
- **LC50**: Lethal Concentration 50 percent kill.
- **LD**: Lethal Dose.
- **LD50**: Lethal Dose 50 percent kill.
- **LOAEL**: Lowest Observed Adverse Effect Level.
- **LOEC**: Lowest Observed Effect Concentration.
- **MARPOL**: International Convention for the Prevention of Marine Pollution from Ships.
- **NIOSH**: The National Institute for Occupational Safety and Health.
- **NOAEC**: No Observed Adverse Effect Concentration.
- **NOAEL**: No Observed Adverse Effect Level.
- **OSHA**: Occupational Safety and Health Administration.
- **PBT**: Persistent, Bioaccumulative and Toxic.
- **PEL**: Permissible Exposure Limit.
- **ppm**: Parts Per Million.
- **REACH**: Registration, Evaluation, Authorisation & restriction of Chemicals.
- **SVHC**: Substances of Very High Concern.
- **vPvB**: Very Persistent and very Bioaccumulative.

References

- **ESIS**: European chemical Substances Information System
- **IRAC**: International Agency for Research on Cancer

Full text of any hazard statements and precautionary statements found in sections 2 to 15.

- H302 **Harmful if swallowed.**
- H360FD **May damage fertility. May damage the unborn child.**
- H361d **Suspected of damaging the unborn child.**
- P281 **Use personal protective equipment as required.**
- P264 **Wash thoroughly after handling.**
- P270 **Do not eat, drink or smoke when using this product.**
- P308+P313 **IF exposed or concerned: Get medical advice/attention.**
- P405 **Store locked up.**
- P501 **Dispose of contents/container in accordance with local/regional/national/international regulations.**
- R22 **Harmful if swallowed.**
- R63 **Possible risk of harm to the unborn child.**

Training information

Training given should be followed when using this material.

Other information

When assessing the risks of using this product a complete assessment of the risks can only be made in conjunction with the SDS for the brazing filler metal and taking into account any hazards associated with the brazing process, such as the gases given off from any torch flames.

Former Occupational Exposure Limits EH40/2004

<table>
<thead>
<tr>
<th>Element</th>
<th>Long term (8 hour) TWA Value</th>
<th>Short term (15 minutes) TWA Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boron trifluoride (CAS No. 7637-07-2)</td>
<td>-</td>
<td>2.8 mg / m³</td>
</tr>
</tbody>
</table>

**TWA** = Time weighted average

Disclaimer

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