

# METALLI

## SAFETY DATASHEET – EASY-FLO FLUX POWDER

@ Copyright, Metalli as 2013

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

#### 1.1 Product Identifier

Trade name or designation of the mixture

### Easy-flo Flux Powder

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

Identified uses

Brazing flux for use with low-temperature silver brazing type filler metals that have liquidus temperatures of less than 750°C.

Uses advised against

None known.

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

Company

Metalli A/S  
Nyholms alle 46  
2610 Rødovre  
Denmark

E-mail

[info@metalli.dk](mailto:info@metalli.dk)

Telephone number

+45 3670 0544











#### 1.4 Emergency telephone number

+45 3670 0544

### SECTION 2: Compositional information

#### 2.1 Mixtures

##### General information

Substance	CAS no.	EINECS NO.	CLP-Classification	DPD- Classification	% Concentration
Potassium difluorodihydroxybrat (1-)	85392-66-1	286-925-2	 GHS07 Acute toxicity oral cat. 4	 Xn, R22	25-50
Potassium tetraborate	1332-77-0	215-575-5	 GHS08, reproduktionstoxicitet, Cat. 1B	 Xn, R62, R63, Repr. Cat 3	25-50
Boric acid	10043-35-3	233-139-2	 GHS08, H360	 T, Repr. Cat 2, R60, R61	<1
Potassium hydrogendifluoride	7789-29-9	232-156-2	 GHS06  GHS05 Acute toxicity Oral Cat 3 skin corr. Cat 1B	 T, R25  C, R34	<1

# METALLI

## SAFETY DATASHEET – EASY-FLO FLUX POWDER

@ Copyright, Metalli as 2013

### Composition comments

The full text for all R-phrases is displayed in Section 16. All concentrations are in percent by weight unless ingredient is a gas.

### Additional information

This product contains a substance listed on the list of candidate substances according to the article 59 of the Regulation n. 1907/2006("REACH") at a concentration >\_ 0.1% by weight.

## SECTION 3: Hazards Identification

### 3.1 Classification of the substance or mixture

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

**Classification** Xn; R22, R62, R62

#### Hazard Summary

**Physical hazards** Not classified for physical hazards.

**Health hazards** As supplied, the product is harmful by ingestion, and will be irritating to the eyes. Skin contact may cause moderate irritation. If the skin is broken immediate irritation will occur on contact.

#### Environmental hazards

Not classified for hazards to the environment.

#### Specific hazards

The main hazards associated with this product arise when it is used as a brazing flux. On heating it will fume slightly and with overheating the flux fume will increase. The fumes produced may include hydrogen fluoride and boron trifluoride, which can cause irritation of the nasal passages, eyes and throat.

To minimize the evolution of flux fume always use the product with brazing filler metals that have liquidus temperatures of no greater than 750°C.

#### Main symptoms

Sensitisation. Irritation of nose and throat. Irritation of eyes and mucous membranes.

#### Label elements

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

<b>R-Phrases</b>	R22	Harmful if swallowed
	R62	Possible risk of impaired fertility
	R63	Possible risk of harm to the unborn child

# METALLI

## SAFETY DATASHEET – EASY-FLO FLUX POWDER

@ Copyright, Metalli as 2013

<b>S-Phrases</b>	<b>S29</b>	Do not empty into drains
	<b>S36/37</b>	Wear suitable protective clothing and gloves
	<b>S60</b>	This material and its container must be disposed of as hazardous water.
<b>3.3 Other hazards</b>		Not a PBT or vPvB substance or mixture. Presence of Substances of Very High Concern(SVHCs) according to REACH regulation terms.

### SECTION 4: First aid measures

<b>General information</b>	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.
<b>4.1 Description of first aid measures</b>	
<b>Inhalation</b>	Remove from source of exposure and allow to rest in fresh air. In acute cases apply artificial respiration and if necessary summon medical aid.
<b>Skin contact</b>	Remove any contaminated clothing and wash skin immediately with soap and water. Seek medical attention if sores develop. Launder clothing before re-use.
<b>Eye contact</b>	Irrigate with water or isotonic saline for up to 20 minutes. Seek medical attention if there is any hint of eye damage.
<b>Ingestion</b>	Rinse mouth water & give patient water or milk mixed with calcium carbonate (chalk) to drink. Do not induce vomiting. Summon medical aid.
<b>4.2 Most important symptoms and effects, both acute and delayed</b>	<p>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.</p> <p>Inhalation of the fume will be irritating to the nose and throat and will cause smarting of the eyes.</p> <p>The product is toxic by ingestion, and will be irritating to the eyes.</p> <p>Skin contact may cause moderate irritation.</p>
<b>4.3 Indication of any immediate medical attention and special treatment needed</b>	Treat symptomatically. No specific antidote.

# METALLI

## SAFETY DATASHEET – EASY-FLO FLUX POWDER

@ Copyright, Metalli as 2013

### SECTION 5: Fire fighting measures

	<b>General fire hazards</b>	Non-flammable
<b>5.1</b>	<b>Extinguishing media</b>	
	<b>Suitable extinguishing media</b>	CO <sub>2</sub> , extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
	<b>Unsuitable extinguishing media</b>	Not applicable.
<b>5.2</b>	<b>Special hazards arising from the substance or mixture</b>	Hydrogen fluoride (HF).
<b>5.3</b>	<b>Advice for fire-fighters</b>	
	<b>Special protective equipment for fire-fighters</b>	Use full protection with breathing apparatus if involved in a fire as harmful fumes may be evolved.
	<b>Special fire fighting procedures</b>	Not applicable.

### SECTION 6: Accidental release measures

<b>6.1</b>	<b>Personal precautions, protective equipment and emergency procedures</b>	
	<b>For non-emergency personnel</b>	Avoid contact with skin or eyes. Use personal equipment during clean-up operation, gloves, eye protection etc. as considered appropriate to the size and nature of the release. Do not inhale dust.
	<b>For emergency responders</b>	Not applicable.
<b>6.2</b>	<b>Environmental precautions</b>	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.
<b>6.3</b>	<b>Methods and material for Containment and cleaning up</b>	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 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.
<b>6.4</b>	<b>Reference to other sections</b>	For safe handling see section 7. For personal protection, see section 8. For waste disposal, see section 13.

### SECTION 7: Handling and storage

# METALLI

## SAFETY DATASHEET – EASY-FLO FLUX POWDER

@ Copyright, Metalli as 2013

- 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.
- 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

Element	Long term (8 Hour) TWA Value	Short term ( 15 mins) TWA Value
Potassium hydrogendifluoride (10-25%) (CAS 7789-29-9)	2.5 mg / m3 (as fluorine)	–

TWA = Time weighted average

- Biological limit values** No biological exposure limits 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 gloves supplier to most suitable type of gloves to protect against this type of product. Show gloves 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

# METALLI

## SAFETY DATASHEET – EASY-FLO FLUX POWDER

@ Copyright, Metalli as 2013

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 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

<b>Appearance</b>	White powder.
<b>Physical state</b>	Solid
<b>Form</b>	Powder
<b>Colour</b>	White
<b>Odour</b>	No detectable odour.
<b>Odour threshold</b>	Not applicable.
<b>pH</b>	8 (of aqueous paste)
<b>Melting point/freezing point</b>	Not determined
<b>Initial boiling point and boiling range</b>	Not determined
<b>Flash point</b>	Not determined
<b>Evaporation rate</b>	Not determined
<b>Flammability (Solid, gas)</b>	Not determined
<b>Upper/lower flammability or explosive limits</b>	
<b>Flammability limit – lower (%)</b>	Not determined
<b>Flammability limit – upper (%)</b>	Not determined
<b>Vapour pressure</b>	Not determined
<b>Vapour density</b>	Not determined
<b>Relative density</b>	Not determined
<b>Solubility</b>	Partly soluble
<b>Partition coefficient (n-octanol/water)</b>	Not determined
<b>Decomposition temperature</b>	Not determined
<b>Viscosity</b>	Not applicable
<b>Explosive properties</b>	Product does not present an explosion hazard
<b>Oxidizing properties</b>	Not determined
<b>9.2 Other information</b>	No further relevant information available
<b>Bulk density</b>	Not determined
<b>VOC (Weight %)</b>	Not determined

## SECTION 10: Stability and reactivity

# METALLI

## SAFETY DATASHEET – EASY-FLO FLUX POWDER

@ Copyright, Metalli as 2013

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

### SECTION 11: Toxicological information

<b>General information</b>	Occupational exposure to the substance or mixture may cause adverse effects.
<b>Information on likely routes of exposure</b>	
<b>Ingestion</b>	Ingestion may cause irritation and malaise.
<b>Inhalation</b>	Fumes inhaled may include hydrogen fluoride and boron trifluoride, which can cause irritation of the nasal passages, eyes and throat.
<b>Skin contact</b>	Skin contact may cause moderate irritation. If the skin is broken immediate irritation will occur on contact.
<b>Eye contact</b>	Not likely given nature of product.
<b>Symptoms</b>	Sensitisation. Irritation of nose and throat. Irritation of eyes and mucous membranes.
11.1 <b>Information on toxicological effects</b>	Potassium tetraborate has been classified a reproductive toxin category 3, Repr. Cat3. and presents possible risks of impaired fertility and risks of harm to the unborn child.

Values relevant for classification:	Test	Result
	LD50 (oral - rat)	300-3000 mg/kg

Individual elements	Test	Result
Potassium tetraborate (CAS 1332-77-0)	LD50 (oral - rat)	3500-4100 mg/kg

<b>Acute toxicity</b>	Not classified.
<b>Skin corrosion/irritation</b>	Not classified.
<b>Respiratory sensitization</b>	When heated, the vapours/fumes given off may cause respiratory tract irritation.
<b>Skin sensitisation</b>	Not classified.
<b>Germ cell mutagenicity</b>	No test data available for the product.
<b>Carcinogenicity</b>	Risk of cancer cannot be excluded with prolonged exposure. Potassium tetraborate has been classified a reproductive toxin category 3, Repr. Cat 3. and presents possible risks of impaired fertility and risks of ham to the unborn child.
<b>Reproductive toxicity</b>	Possible risk of impaired fertility. Possible risk of harm to the unborn child. Limited evidence of a carcinogenic effect.

# METALLI

## SAFETY DATASHEET – EASY-FLO FLUX POWDER

@ Copyright, Metalli as 2013

### IARC Monographs. Overall Evaluation of Carcinogenicity

Not classified	According to <a href="http://monographs.iarc.fr/ENG/Classification/index.php">http://monographs.iarc.fr/ENG/Classification/index.php</a> <a href="#">accessed 08.04.2013</a>
<b>Specific target organ toxicity – single Exposure</b>	Not applicable.
<b>Specific target organ toxicity – Repeated exposure</b>	Not applicable
<b>Aspiration hazard</b>	Not applicable
<b>Mixture versus substance Information</b>	Not applicable
<b>Other information</b>	None.

## SECTION 12: Ecological information

### 12.1 Toxicity Potassium tetraborate:

Component	Test	Method	test results
Protassium tetraborate	CL50	Daphnia (en bore (B) 48h daphnia magna straus)	133 mg/l
Protassium tetraborate	CL50 / 96h	Fish (en bore (B) -limanda limanda)	40 mg/l

12.2	<b>Persistence and degradability</b>	No further relevant information available.
12.3	<b>Bioaccumulative potential</b>	No further relevant information available.
	<b>Partition coefficient n-octanol/water (log Kow)</b>	No further relevant information available.
	<b>Bioconcentration factor (BCF)</b>	Unknown.
12.4	<b>Mobility in soil</b>	
	<b>Mobility in general</b>	No further relevant information available.
12.5	<b>Results of PBT and vPvB assessment</b>	Not applicable
12.6	<b>Other adverse effects</b>	Water hazard class 1 (German Regulation) (Self-assessment): slightly Hazardous for water.

## SECTION 13: Disposal considerations

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

## SECTION 14: Transport information



# METALLI

## SAFETY DATASHEET – EASY-FLO FLUX POWDER

@ Copyright, Metalli as 2013

Land transport ADR/RID (cross-border)		
14.1	UN number	Not classified for transport
14.2	UN proper shipping name	-
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		
14.1	UN number	Not classified for transport
14.2	UN proper shipping name	-
14.3	Transport hazard class(es)	-
14.4	Packing group	-
14.5	Environmental hazards	-
	Marine pollutant	-
	Labels required	-
	EmS No.	-
14.6	Special precautions for user	-
14.7	Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	-

Air transport ICAO-TI and IATA-DGR		
14.1	UN number	Not classified for transport
14.2	UN proper shipping name	-
14.3	Transport hazard class(es)	-
14.4	Packing group	-
14.5	Environmental hazards	-
	Labels required	-
	ERG Code	-
14.6	special precautions for user	-

### SECTION 15: Regulatory information

15.1	<b>Safety, health and environmental regulations/legislation specific for the substance or mixture</b>	
	<b>EU Regulations</b>	Not listed under REACH Article 59( 1) Candidate List as Currently published by ECHA.
	<b>Substances of very high concern (SVHC) according to REACH article 57:</b>	Boric acid (CAS 10043-35-3)

# METALLI

## SAFETY DATASHEET – EASY-FLO FLUX POWDER

@ Copyright, Metalli as 2013

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  
REACH: Registration, Evaluation, Authorisation & restriction of Chemicals  
SVHC: Substances of Very High Concern

#### References

ESIS: European chemical Substances information System  
IRAC: International Agency for Research on Cancer

#### Full text of any statements or R/S Phrases used in sections 2 to 15

R22 Harmful if swallowed  
R25 Toxic if swallowed  
R34 Causes burns  
R60 May impair fertility  
R61 May cause harm to the unborn child  
R62 Possible risk of impaired fertility  
R63 Possible risk of harm to the unborn child  
  
S29 Do not empty into drains  
S36/37 Wear suitable protective clothing and gloves  
S60 This material and its container must be disposed of as hazardous water.

#### 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

Element	Long term (8 hour) TWA Value	Short term (15 minutes) TWA Value
Boron trifluoride (CAS No. 7637-07-2)	-	2.8 mg/m <sup>3</sup>

TWA = Time weighted average

#### REACH Substance of very High Concern.

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 (-1) compound.

While the boric acid should be completely reacted away during the manufacturing process the possibility of some residue of unreacted boric

# METALLI

## SAFETY DATASHEET – EASY-FLO FLUX POWDER

@ Copyright, Metalli as 2013

---

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 for both substances of 0.1% cannot be excluded.

### Disclaimer

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is given in good faith, being based on the latest information available to Metalli and is to the best of Metalli knowledge and belief, accurate and reliable at the time of preparation. However, no representation, warranty or guarantee is made as to the accuracy, Liability or completeness and Metalli assumes no responsibility therefore and disclaims any loss, damage or injury howsoever arising (including in respect of any claim brought by any third party) incurred using this information. The product is supplied on the condition that the end user accepts responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. Freedom from patent or any other proprietary rights of any third party must not be assumed.

### Liability

Copyright: Information and images contained on printed or electronic media or stored within web pages published by Metalli are copyright and the property of Metalli. Metalli authorizes you copy printed or electronic SDS Documents either for non-commercial use or to support sales of genuine Metalli joining products. Any such copy shall retain all copyrights and other proprietary notices, and any disclaimer contained thereon. Please note that none of the content of these documents or web pages may be incorporated into, reproduced on or stored in any other publication, whether in hard copy or electronic form. You may not, without our permission, 'mirror' this information in your own documents, on a website, or modify or re-use text. Trademarks: The Metalli logo, the Metalli name and all product names referred to in printed or electronic documents or on pages published by Metalli are trademarks of the Metalli company.