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SAFETY DATASHEET – EASY-FLO 100 FLUX PASTE

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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 100 Flux Paste**
Synonyms None.
Issue date 10 April 2013
Version number 5
- 1.2 Relevant identified use 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
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	% Concentration
Potassium difluorodihydroxyborate (1-)	85392-66-1	286-925-2	 GHS07 H302	25 to 50
Potassium tetraborate	1332-77-0	215-575-5	 GHS08, H360	10 to 25
Cetrimonium bromide	57-09-0	200-311-3	 GHS07, H302, akut toxicitet oral kat. 4  GHS09, H400, akut 1	< 2.5
Potassium hydrogendifluoride	7789-29-9	232-156-2	 GHS06  GHS05 H302 H312	< 1
Boric acid	10043-35-3	233-139-2	 GHS08, H360	< 5

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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 $\geq 0.1\%$ 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

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 minimise 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



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R-Phrases	R22	Harmful if swallowed
	R62	Possible risk of impaired fertility
	R63	Possible risk of harm to the unborn child
S-Phrases	S23	Do not breathe fumes
	S29	Do not empty into drains
	S36/37	Wear suitable protective clothing and gloves
	S45	In case of accident or if you feel unwell seek medical advice immediately (show the label where possible)
	S60	This material and its container must be disposed of as hazardous waste

3.3	Other hazards	Not a PBT or vPvB substance or mixture. Presence of Substances of Very High Concern (SVHCs) according to REACH regulation terms.
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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	Remove any contaminated clothing and wash skin immediately with soap and water. Seek medical attention if sores develop. Launder clothing before re-use.
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 water & give patient water or milk mixed with calcium carbonate (chalk) to drink. Do not induce vomiting. 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.

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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 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 mop up as much as is possible.

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6.4 Reference to other sections

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

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 / m ³ (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.

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Eye/face protection	If 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 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

Appearance	White pasta.
Physical state	Liquid
Form	Pasta
Colour	White
Odour	No detectable odour
Odour threshold	Not determined
pH	Not determined
Melting point/freezing point	100°C boiling point of water
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	23 hPa.
Vapour density	Not determined
Relative density	Not determined

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	Solubility	Slightly 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 applicable
	VOC (Weight %)	Not applicable

SECTION 10: Stability and reactivity

10.1	Reactivity	Product is stable, but being an aqueous paste, water can be lost due to evaporation and the product can increase in viscosity and eventually become a hard mass.
10.2	Chemical stability	Stable at normal conditions.
10.3	Possibility of hazardous	Avoid contact with acids and strong oxidizing agents
	Hazardous decomposition products	Hydrogen fluoride
10.4	Conditions to avoid	Avoid contact with acids and strong oxidizing agents.
10.5	Incompatible materials	Avoid contact with acids and strong oxidizing 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	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

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

Acute toxicity	Not classified.
Skin corrosion/irritation	Not classified.
Respiratory sensitization	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.
Carcinogenicity	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 harm to the unborn child.
Reproductive toxicity	Possible risk of impaired fertility. Possible risk of harm to the unborn child. Limited evidence of a carcinogenic effect.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not classified	According to http://monographs.irc.fr/ENG/Classification/index.php accessed 08.04.2013
Specific target organ toxicity – single Exposure	Not applicable.
Specific target organ toxicity – Repeated exposure	Not applicable
Aspiration hazard	Not applicable
Mixture versus substance Information	Not applicable
Other information	None.

SECTION 12: Ecological information

12.1 Toxicity Potassium tetraborate:

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

12.2 Persistence and degradability	No further relevant information available.
12.3 Bioaccumulative potential	No further relevant information available.
Partition coefficient n-octanol/water (log Kow)	No further relevant information available.
Bioconcentration factor (BCF)	Unknown.
12.4 Mobility in soil	
Mobility in general	No further relevant information available.

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12.5	Results of PBT and vPvB Assessment	Unknown.
12.6	Other adverse effects	Water hazard class 1 (German Regulation) (Self-assessment): slightly Hazardous for water.

SECTION 13: Disposal considerations

13.1	Water treatment method	
	Residual waste	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.
	Contaminated packaging	Not applicable
	EU waste code	Not applicable.
	Disposal methods/information	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

Land transport ADR/RID (cross-border)



14.1	UN number	3287
14.2	UN proper shipping name	UN3287, TOXIC LIQUID, INORGANIC N.O.S. (fluoborates), 6.1, III
14.3	Transport hazard class(es)	6.1 Toxic substances
14.4	Packing group	III
14.5	Environmental hazards	Not applicable.
	Tunnel restriction code	E
	Labels required	6.1
14.6	Special precautions for user	Warning: Toxic substances.

Maritime transport IMDG



14.1	UN number	3287
14.2	UN proper shipping name	UN3287, TOXIC LIQUID, INORGANIC N.O.S. (fluoborates), 6.1, III
14.3	Transport hazard class(es)	6.1 Toxic substances

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14.4	Packing group	III
14.5	Environmental hazards	Not applicable.
	Marine pollutant	No
	Labels required	6.1
	EmS No.	Not applicable.
14.6	Special precautions for user	Warning: Toxic substances.
14.7	Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

Air transport ICAO-TI and IATA-DGR



14.1	UN number	3287
14.2	UN proper shipping name	UN3287, TOXIC LIQUID, INORGANIC N.O.S. (fluoroborates), 6.1, III
14.3	Transport hazard class(es)	6.1 Toxic substances
14.4	Packing group	III
14.5	Environmental hazards	Not applicable.
	Labels required	6.1
	ERG Code	None.
14.6	special precautions for user	Warning: Toxic substances.

SECTION 15: Regulatory information

15.1	Safety, health and environmental regulation specific for the substance or mixture	
	EU Regulations	Article 57 of Regulation (EC) No 1907/2006 ("REACH").
	Substances of very high concern (SVHC) according to REACH article 57:	Boric acid (CAS 10043-35-3)
	Authorisations	Not regulated.
	Restrictions on use	No restrictions on use.
	Other EU regulations	Not regulated.
	Other regulations	The product is classified and labeled 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.
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

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References	SVHC:	Substances of Very High Concern
	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
	R37/38	Irritating to respiratory system and skin
	R41	Risk of serious damage to eyes
	R50	Very toxic to aquatic organisms
	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
	S20	When using do not eat or drink
	S26	In case of eye contact, rinse immediately with water and seek medical advice
	S36/37/39	Wear suitable protective clothing, gloves and eye/face protection
	S45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible)
	S60	This material and its container must be disposed of as hazardous waste
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 ³

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 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

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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

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