# SAFETY DATA SHEET
# GB003 Bare Silver based (Cadmium free) brazing rods.

AFROX
A Member of The Linde Group

**Version number:** 1
**Replaces SDS:** 2009-11-23
**Issued:** 2014-03-29

**Not for sale in the USA**

## Section 1. IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

*1.1 Product identifier*

**Trade name** BARE SILVER BASED (CADMIUM FREE) BRAZNG RODS

(Easyflo Flux, Easyflo Flux Paste, Tenacity no. 5 Flux Paste Stainless Steel Grade, Sivlerflo 55, Silverflo 40, Silverflo 30, Fridgebraze Bare, Fluxcoat 402, Silvercoat 30, Flux Coated Frdgebraze, Silvercoat 18)

**Article-no**

| Silver Brazing Flux | | | | | |
|---|---|---|---|---|---|
| ***Product*** | ***Item Number*** | ***Working Range (°C)*** | ***Classification DIN 8511*** | ***Flux Form*** | ***Pack Size*** |
| **Easyflo Flux** | W001852<br>W011854 | -<br>550-800 | -<br>F-SH1 | -<br>Powder | 250 g jar<br>5 kg container |
| **Easyflo Flux Paste** | W0001836 | 500-825<br>001-862 | F-SH1<br>- | Paste<br>- | 500 g jar<br>1kg container |
| **Tenacity No. 5 Flux Paste** | W0001865 | 600-900 | F-SH1/2 | Powder | - |

| Uncoated Cadmium-Free Silver Brazing Alloys | | | |
|---|---|---|---|
| ***Product Name*** | ***Item Number*** | ***Diameter (mm)*** | ***Pack size*** |
| **Silverflo 55** | W0001197<br>W001180 | 1,5<br>1,5 | 100g<br>Sleeve |
| **Silverflo 40** | W001031<br>W001171<br>W001172 | 1,5<br>3,0<br>3,0 | 100g<br>100g<br>1kg |
| **Silverflo 30** | W001030 | 1,5 | 100g |
| **Fridgebraze Bare** | W001559<br>W001560<br>W001561 | 1,5<br>1,5<br>1,5 | 100g<br>1kg<br>2kg |

| *Flux Coated Cadmium-Free Silver Brazing Alloys* | | | |
|---|---|---|---|
| ***Product Name*** | ***Item Number*** | ***Diameter (mm)*** | ***Pack size*** |
| **Fluxcoat 402** | W0001197<br>W001180 | 1,5<br>1,5 | 100g<br>Sleeve |
| **Silvercoat 30** | W001031<br>W001032 | 1,5<br>1,5 | 100g<br>1kg |
| **Flux Coated Fridgebraze** | W001556<br>W001557<br>W001558 | 1,5<br>1,5<br>1,5 | 100g<br>1kg<br>2kg |
| **Silvercoat 18** | W001018<br>W001019 | 1,5<br>1,5 | 100g<br>1kg |

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

| | |
|---|---|
| **Article type** | Gas Brazing: Bare Silver based ( Cadmium free) brazing rod Classification: DIN L-Ag55n, AS/NZS 1167.1 |
| **Use** | Oxy-Fuel brazing |

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

| | |
|---|---|
| **Supplier** | Afrox |
| Street address | 23 Webber Street, Selby<br>Johannesburg, 2001<br>South Africa |

| | |
|---|---|
| Telephone | +27 (0) 11 490 0400 |
| Fax | +27 (0) 860 020201 |
| **Email** | Customer.service@afrox.linde.com |

*1.4 Emergency telephone number*

| | |
|---|---|
| **Available outside office hours** | Yes |
| **Emergency phone number** | 0860 02 02 02 |

Other

| | |
|---|---|
| **Additional product information** | **Web site: www.afrox.co.za** |

## Section 2. HAZARDS IDENTIFICATION

*2.1 Classification of the substance or mixture*

Classification according to Regulation (EU) 1271/2008 [CLP] applicable

*2.2 Label elements*

Not applicable

*2.3 Other hazards*

Do not touch hot parts.

Overexposure to the fumes and gases can give rise to dryness of the nose, throat and eyes, respiratory irritation and, in some cases, longer term health effects such as irreversible central nervous system damage and lung deposits.

## Section 3. COMPOSITION / INFORMATION ON INGREDIENTS

*3.1 Substances*

This product is a mixture and please refer to Section 3.2

*3.2 Mixtures*

| AWS Classification | Ag | Cu | Zn | Ni | Sn | Li | Mn |
|---|---|---|---|---|---|---|---|
| Bag-4,5,6,7, | 39.0-57.0 | 21.0-35.0 | 14.0-30.0 | 0-2.5 | 0-5.5 | - | - |
| Bag-8,8a | 71.0-73.0 | Bal. | - | - | - | 0-0.50 | - |
| Bag-9,10 | 64.0-71.0 | 19.0-21.0 | 8.0-17.0 | - | - | - | - |
| Bag-13,13a,18,19 | 53.0-93.0 | Bal. | 0-6.0 | 0-2.5 | 0-10.5 | 0-0.30 | - |
| Others | 24.0-86.0 | 0-41.0 | 0-35.0 | 0-5.0 | 0-7.0 | - | 0-16.0 |

## Section 4. FIRST AND MEASURES

*4.1 Description of first aid measures*

| | |
|---|---|
| **Inhalation** | IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms occur. |
| **Skin contact** | Burns should be treated by a doctor. |
| **Eye contact** | Generally not applicable |
| **Ingestion** | Contact a doctor if more than an insignificant amount has been swallowed. |

*4.2 Most important symptoms and effects, both acute and delayed*

| | |
|---|---|
| **Inhalation** | Inhalation of vapours may cause irritation of the respiratory system in very susceptible persons.<br>Copper, magnesium, aluminium, antimony, iron, manganese, nickel, zinc (and their compounds) in brazing al give rise to thermally produced particulates of smaller dimension than may be produced if the metals are divided mechanically. Where insufficient ventilation or respiratory protection is available these particulates may produce “metal fume fever” in workers from an acute or long term exposure.<br>Onset occurs in 4-6 hours generally on the evening following exposure. |

*4.3 Indication of any immediate medical attention and special treatment needed*

Not applicable

## Section 5. FIRE-FIGHTING MEASURES

*5.1 Extinguishing media*

| | |
|---|---|
| **Suitable extinguishing media** | There is no restriction on the type of extinguisher which may be used.<br>Use extinguishing media suitable for surrounding area |

*5.2 Special hazards arising from the substance or mixture*

Not applicable

*5.3 Advice for fire fighters*

| | |
|---|---|
| **Special protective equipment for fire fighters** | Wear self contained breathing apparatus |

## Section 6. ACCIDENTAL RELEASE MEASURES

*6.1 Personal precautions, protective equipment and emergency procedures*

General ventilation and local fume extraction must be adequate to keep fume concentrations within safe limits. Use respiratory equipment when brazing in a confined space. Wear protective clothing and eye protection appropriate to welding. Skin contact should be avoided to prevent possible allergic reactions.

*6.2 Environmental precautions*

Try to prevent the material from entering drains or water courses.

*6.3 Methods and material for containment and cleaning up*

Not applicable

*6.4 Reference to other sections*

For *Personal protection* see section 8. For *Disposal* see section 13. For *Environmental precautions* see section 12. For *Precautions for safe handling* see 7.1.

## Section 7. HANDLING AND STORAGE

*7.1 Precautions for safe handling*

| | |
|---|---|
| **Preventive handling precautions** | Ensure adequate ventilation for the welder and others. Use respiratory equipment when brazing in a confined space. Wear protective clothing and eye protection appropriate to welding. Remove all flammable materials and liquids before welding. |
| **General hygiene** | Wash hands before breaks and immediately after handling the product. |

*7.2 Conditions for safe storage, including any incompatibilities*

Store welding consumables inside a room without humidity. Do not store welding consumables directly on the ground or beside walls. Store away from chemical substances like acids which could cause chemical reactions.

*7.3 Specific end use(s)*

Welding process.

## Section 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

*8.1 Control parameters*

| Welding fume component | CAS No. | ES-TWA | ES-STEL |
|---|---|---|---|
| Copper, fume | 7440-50-8 | 0.2 | |
| Manganese and its inorganic compounds (as Mn) | 7439-96-5 | 0.5 | |
| Zinc oxide, fume | 1314-13-2 | 5 | 10 |
| Nickel and its inorganic compounds<br>Water soluble<br>Water insoluble | | <br>0.1<br>0.5 | |
| Silver compounds (as Ag) | | 0.01 | |
| Tin compounds, inorganic (as Sn) | 7440-31-5 | 2 | 4 |
| Carbon Dioxide | 124-38-9 | 5000ppm | 15000ppm |
| Carbon Monoxide | 630-08-0 | 30ppm | 200ppm |

*8.2 Exposure controls*

*Environmental Exposure Control _ Refer to Section 6 of this SDS*

| | |
|---|---|
| **Technical precaution measures** | General ventilation and local fume extraction must be adequate to keep fume concentrations within safe limits. |
| **Eye / face protection** | Wear eye protection appropriate for welding. |
| **Safety gloves** | Skin contact should be avoided to prevent possible allergic reactions. |
| **Other skin protection** | Wear body protection which helps to prevent injury from radiation, sparks . |
| **Respiratory protection** | Use respiratory equipment when welding in a confined space. Wear protective clothing and eye protection appropriate to gas welding. |

## Section 9. PHYSICAL AND CHEMICAL PROPERTIES

*9.1 Information on basic physical and chemical properties*

| | |
|---|---|
| **Appearance, colour** | Metal rods; does not mix with water |

| | |
|---|---|
| **Appearance, physical state** | Rod |
| **Auto-ignition temperature** | Not applicable |
| **Auto-inflammability** | Not auto-flammable |
| **Decomposition temperature** | Not applicable |
| **Evaporation rate** | Not applicable |
| **Explosive properties** | Not explosive |
| **Flammability (solid gas)** | Not applicable |
| **Flash point** | Not applicable |
| **Form** | Fast |
| **Initial boiling point and boiling range** | Not applicable |
| **Melting point / Freezing point** | Not applicable |
| **Odour** | Odourless |
| **Odour threshold** | Not applicable |
| **Oxidising properties** | Not applicable |
| **Partition coefficient: n-octanol / water** | Not applicable |
| **pH value** | Not applicable |
| **Relative density** | Not applicable |
| **Solubility** | Not applicable |
| **Solubility in water** | Insoluble |
| **Upper / lower flammability or explosive limits** | Not applicable |
| **Vapour density** | Not applicable |
| **Vapour pressure** | Not applicable |
| **Viscosity** | Not applicable |

*9.2 Other information*

Not applicable

Other

| | |
|---|---|
| **Density** | 9.3-10.5g/cm$^3$ |

## Section 10. STABILITY AND REACTIVITY

*10.1 Reactivity*

Not applicable

*10.2 Chemical stability*

Stable at normal conditions.

*10.3 Possibility of hazardous reactions*

Not applicable

*10.4 Conditions to avoid*

None under normal conditions

*10.5 Incompatible materials*

Not applicable

*10.6 Hazardous decomposition products*

Welding fumes and gases. Additional fume may arise from coatings and contaminants on the base material.

| **Silver Brazing – Including Nickel** | | |
|---|---|---|
| **Classification** | **H phrase** | **Text** |
| Skin Irrit.: Category 2 | H315 | Causes skin irritation |
| Eye Irrit.: Category 2 | H319 | Causes serious eye irritation |
| Skin sensitiser: Category 1 | H317 | May cause an allergic skin reaction |
| Carcinogenicity: Category 2 | H351 | Suspected of causing cancer |
| STOT RE: Category 2 | H373 | May cause damage to organs |

| **Silver Brazing** | | |
|---|---|---|
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| Skin sensitiser: Category 1 | H317 | May cause an allergic skin reaction |
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| | | |
|---|---|---|
| STOT RE: Category 2 | H373 | May cause damage to organs |

**The classification information above relates to the fume during use.**

## Section 11. TOXICOLOGICAL INFORMATION

*11.1 Information on toxicological effects*

Conditions to avoid: none in the form supplied

When welding, fumes and gases generated can be dangerous to health.

| | |
|---|---|
| **Acute toxicology** | Excessive exposures may affect human health, as follows: Aspiration may cause pulmonary oedema and pneumonitis Short-term overexposure can cause dizziness, nausea and irritation of the nose, throat or eyes. |
| **Irritation** | Not applicable |
| **Corrosive effects** | Not applicable |
| **Sensitisation** | May cause sensitisation by skin contact |
| **Mutagenicity** | Not applicable |
| **Carcinogenicity** | Welding fumes are possibly carcinogenic to humans |
| **Repeated dose toxicity** | Not applicable |
| **Reproductive toxicity** | Not applicable |

## Section 12. ECOLOGICAL INFORMATION

*12.1 Toxicity*

Not Available. Refer to individual constituents

*12.2 Persistence and degradability*

Not applicable

*12.3 Bio accumulative potential*

No data available

*12.4 Mobility in Soil*

Not applicable

*12.5 Results of PBT and vPvB assessment*

Not applicable

*12.6 Other adverse effects*

Not applicable

## Section 13. DISPOSAL CONSIDERATIONS

*13.1 Waste treatment methods*

| | |
|---|---|
| **Disposal considerations** | Dispose of any product, residue or packing material according to national and local regulations. Spent ;fume extraction filters shall be disposed of as dangerous waste. |

Other

| | |
|---|---|
| **Waste code (EWC)** | 12 01 13 – welding waste |

## Section 14. TRANSPORT INFORMATION

*14.1 UN number*

Not applicable

*14.2 UN proper shipping name*

Not applicable

*14.3 Transport hazard class(es)*

Not applicable

*14.4 Packing group*

Not applicable

*14.5 Environmental hazards*

Not applicable

*14.6 Special precautions for user*

Not applicable

*14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code*

Not applicable

Other

| | |
|---|---|
| **Dangerous goods** | No |

## Section 15. REGUATORY INFORMATION

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

| | |
|---|---|
| ***EU regulations*** | *The product does not need to be labelled in accordance with EC directives or respective national laws.* |
| ***National regulations*** | *EH40/2005 Workplace exposure limits*<br>*The Waste Regulations 2011 No. 988*<br>*Local laws and regulations should be carefully observed.* |

*15.2 Chemical safety assessment*

*Not applicable*

## Section 16. OTHER INFORMATION

**References to key literature and data sources**

Regulation (EC) No 1907/2006 of the European Parliament and of the Council, (REACH).
Regulation (EC) No 1272/2008 of the European Parliament and of the Council.
EH40/2005 Workplace exposure limits.
The Waste regulations 2011 No.988
C&L Inventory database
Annex VI CLP Regulation (EC) 1272/2008

**Phrase meaning**

| | |
|---|---|
| H315 | Causes skin irritation |
| H319 | Causes serious eye irritation |
| H317 | May cause an allergic skin reaction |
| H351 | Suspected of causing cancer |
| H373 | May cause damage to organs |

Other

**Manufacturer's notes**

*Read this Safety Data Sheet carefully and become aware of hazards implied and the safety information.*

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