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**SAFETY DATA SHEET**  
**Oro-flo™ Liquid Flux**

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**1. Product Description & Use:** A fluorescent yellow coloured liquid soldering\* flux for use by Jewellers and Silversmiths in conjunction with hallmarking quality Gold and Silver solders\* on Carat Golds and Hallmarking grades of Silver e.g. Sterling.

\*The terms "Soldering" and "Solders" are terms commonly used within the Jewellery and Silversmithing trades. The process referred to as "Soldering" in this context should technically be classified as "Brazing", since the joining process takes place at temperatures above 450°C. Likewise the term "Solder" is used to mean Brazing Filler Metal.

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**2. Composition**

Mixture of the substances listed below with non-hazardous additions.

Hazardous Substance	CAS No.	Percentage Present
Ammonium Bifluoride	107-21-1	2.5 to 10
Ethylene Glycol	1341-49-7	< 2.5%.

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**3. Hazard Identification**

The main hazard with this product occurs in its use as a flux. On heating the flux will fume slightly, and with overheating the fume will increase. The fumes produced include hydrogen fluoride, which can cause irritation of the nasal passages, eyes and throat.

Severe long term exposure to fume may result in fluorosis. In acute cases there is a danger of pulmonary oedema, although this occurrence could also result from the inhalation of metal fumes or torch gases. Inhalation of the fumes will be irritating to the nose and throat and will cause smarting of the eyes.

The flux as supplied is harmful by ingestion and irritating to the eyes and skin.

In its liquid form the flux will be irritating to the skin and if skin is broken immediate irritation will occur on contact.

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**4. 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.

**Ingestion:** Rinse mouth with water. Do not induce vomiting. Summon Medical aid.

**Eyes:** Irrigate with water or isotonic saline for up to 20 minutes. If symptoms persist or there is any hint of eye damage seek medical attention.

**Skin:** Remove contaminated clothing and wash skin with soap and water. Seek medical attention if sores develop. Launder contaminated clothing before re-use.

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## 5. Fire Fighting Measure

Non-flammable. Use full protection with breathing apparatus if product is involved in a fire as harmful fume may be evolved. Use any extinguishing medium; CO<sub>2</sub>, dry powder, foam or water spray.

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## 6. Accidental Release Measures

Absorb any spillage with a liquid binding material; sand, saw dust or any other inert absorbent material and collect in a suitable container for disposal.

Wear protective clothing, impervious gloves, goggles as appropriate whilst dealing with spillage.

Clean affected area with plenty of water.

Ensure area is adequately ventilated while dealing with spillage.

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## 7. Handling and Storage

**Handling:** Use only under conditions of good local ventilation or efficient extraction system, do not inhale fumes evolved during use.

Avoid contact with skin and eyes. Do not eat, drink, smoke or apply cosmetics whilst using the product.

Keep away from food, drink and animal feeding stuffs and out of the reach of children.

Observe good industrial hygiene practices.

**Storage:** Store in a cool, dry place. Keep container closed when not in use.

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## 8. Exposure Controls and Personal Protection

Occupational Exposure Limits are:

Fume / Vapour	Long Term (8 hour) *TWA Value	Short Term (15 minutes) *TWA Value
Hydrogen Fluoride (as F)		2.5 mg/m <sup>3</sup>
Fluoride (as Fluorine)	2.5 mg/m <sup>3</sup>	
Ethylene Glycol (vapour)	104 mg/m <sup>3</sup>	52 mg/m <sup>3</sup>
Ethylene Glycol (Particulate)	10 mg/m <sup>3</sup>	

\* Time Weighted Average

### **Personal Protection**

Avoid exposure to fume with good ventilation or local extraction.

Safety glasses should be worn as flux may spit when heated. If skin contact with product cannot be avoided impervious gloves e.g. rubber or neoprene should be worn. The use of barrier creams, where occasional skin contact occurs can be helpful in preventing irritation. Wash hands after using this product

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### **9. Physical and Chemical Properties**

<b>Appearance</b>	Fluorescent yellow Liquid
<b>pH</b>	8 at 20°C
<b>Boiling Point</b>	100°C
<b>Flash Point</b>	Not applicable
<b>Flammability</b>	Not flammable
<b>Solubility</b>	Fully miscible in water

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### **10. Stability and Reactivity**

No thermal decomposition if used as intended.

No dangerous reactions known.

No dangerous decomposition products known.

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### **11. Toxicological Information**

No specific data available.

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### **12. Ecological Information**

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

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### **13. Disposal Consideration**

Dispose of according to local and national regulations. Registered waste contractors should be aware of the compositional data contained in this document.

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### **14. Transport Information**

Not classified for land or sea transport

**Air transport:** Classified ICAO/IATA Class 8

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## 15. Regulatory Information

EC Supply Harmful



Risk Phrases	R22	Harmful if swallowed
	R36/38	Irritating to eyes and skin
Safety Phrases	S20/21	When using do not eat, drink or smoke
	S23	Do not breath fumes
	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 feeling unwell seek medical attention.
	S60	This container and its contents must be disposed of as hazardous waste.

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## 16. Other Information

This Material Safety Data Sheet conforms to 91/155/EEC – 2001/58/EC

For additional guidance see:

Johnson Matthey Metal Joining Materials Safety Data Sheet 1100/105 “Health and safety in Brazing”.

Health & Safety Executive Guidance Notes Nos.:

EH55 “The control of fume from welding, brazing and similar processes” HSE 1990.

EH54 “Assessment of exposure to fume from welding and allied processes” HSE 1990.

