

GROSVENOR ELECTRONICS SUPPLIES UK

MATERIAL SAFETY DATA SHEET

HIGH PURITY SOLDER ALLOYS

1. PRODUCT & COMPANY IDENTIFICATION

Grosvenor Electronics Supplies (UK), Priory Tec. Park, Saxon Way, Hessle, East Yorkshire. HU13 9PB.

Product Identification: High Purity Solder Alloys.

Trade Name: Ingots, Solid Wire, Pellets, Tinmans & Blowpipe

Uses: Hand or Machine Soldering.

2. COMPOSITION/INFORMATION ON INGREDIENTS.

Ingredient	%	CAS-NO	EXPOSURE	
			OSHA PEL (PPM)	HAZARD
Tin	5 – 95	7440-31-5	2 mg/m ³	
Lead	5 - 95	7439-92-1	0.15 mg/m ³	
Rosin	0.7-3.5		0.1 mg/m ³	(Measured as formaldehyde)
Alkylamine halide	0.5			

* (8 hrs. TWA) - Occupational Exposure Limits 1990, Guidance not EH 40/90 from Health & Safety Executive.

3. HAZARDS IDENTIFICATION.

Inhalation of the flux fumes given off at soldering temperatures will irritate the nose, throat and respiratory system.

Solder alloys containing lead give off negligible lead fume at normal soldering temperatures and at temperatures up to 500°C. Lead is harmful if absorbed into the body and can cause lead poisoning, birth defects and other reproductive harm.

4. FIRST AID MEASURES

Inhalation: Flux fumes emitted during soldering will irritate the nose, throat and lungs
Remove patient to fresh air. Obtain medical attention if there is any respiratory Distress.

Ingestion: Do not induce vomiting, seek medical advice.

Skin contact: Flux fumes produced during soldering may cause irritation of exposed skin. Wash with water and soap after handling solder. If any skin irritation develops seek medical attention.

Eye contact: Flux fumes may irritate the eyes. The flux may spit during soldering.
Flush **immediately** with plenty of water for at least 15 minutes.

5. FIRE FIGHTING

Extinguishers: Dry foam, sand, Co2, Alcohol Foam.
Unsuitable extinguisher : Never use water near molten metal.

6. ACCIDENTAL RELEASE MEASURES.

Not applicable.

7. HANDLING - STORAGE

Avoid inhaling the fumes emitted by the fluxes used with these products. Ensure that the general area is well ventilated. Wash hands with soap and water after handling solder, particularly before eating, drinking or smoking. The products should be stored in a cool, dry area. Keep out of the reach of children and away from food and drink.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

In normal soldering operations where the temperature is below 500°C the exposure to lead will be minimal and the risks from the toxic effects of lead insignificant. (Ref: *Approved Code of Practice supporting the Control of Lead at Work Regulations.*) Extraction should be provided to control exposure to flux fumes. Suitable examples include bench top, soldering iron tip extraction or an extraction arm.

Occupational Exposure Limits

Substance	Long term exposure limit (8 hour TWA)	Short term exposure limit (15 minute)
Lead *	(0.15 mg/m ³)	-

* From appendix 1 of the Approved Code of Practice supporting the Control of Lead at Work Regulations.

Employees should be under medical surveillance if the risk assessment made under the Control of Lead at Work Regulations indicates they are likely to be exposed to significant concentrations of lead, or if an Employment Medical Advisor or appointed doctor so certifies.

A women employed on work which exposes her to lead should notify her employer as soon as possible if she becomes pregnant. The Employment Medical Advisor/Appointed Doctor should be informed of the pregnancy.

Under the Management of Health and Safety at Work (Amendment) Regulations, employers are required to assess the particular risks to health at work of pregnant workers and workers who have recently given birth or who are breast feeding.

Respiratory Protection: Necessary if there is a risk of exposure to flux fumes.

Eye Protection: Operators should wear safety glasses or goggles to protect the eyes from spitting flux.

9. PHYSICAL AND CHEMICAL DATA

Appearance: Silver-white to grey alloy wire.
Odour: Odourless at ambient temperatures.
Boiling range: The vapour pressure of lead may be significant above 500°C
Solubility in Water: Insoluble.

10. STABILITY - REACTIVITY

Conditions to Avoid

If solder is exposed to temperatures above 500°C then lead dust, fume and/or vapour may be produced.

Materials to Avoid

Solder will react with concentrated nitric acid to release toxic fumes of nitric oxide, which oxidises to nitrogen dioxide, a red gas with a pungent odour. If personnel are exposed to these gases then immediate medical attention should be sought, as symptoms can be delayed for a considerable time and can be fatal.

Under reducing conditions antimony containing alloys may form the toxic gas stibine (antimony trihydride.)

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Lead can cause weakness, pains in the joints, vomiting, loss of appetite and stupor.

Chronic Toxicity

Lead can cause weakness, insomnia, headache and possible paralysis. Chronic overexposure to lead may result in damage to the blood forming, nervous, urinary and reproductive systems. Lead is classified as a 2B carcinogen by the IARC (1987), i.e. evidence of carcinogenicity is adequate in animals but inadequate for humans. Severe lead toxicity has long been known to cause sterility, abortion and neonatal mortality and morbidity.

12. ECOLOGICAL INFORMATION

Lead is not degradable and will persist in the environment. Lead is insoluble in water and is not attacked by most inorganic acids and bases.

13. DISPOSAL CONSIDERATIONS

Wherever possible unwanted solder should be recycled for recovery of metal. Otherwise disposal should be in accordance with local and national legislation. In the UK this is the Control of Pollution Act 1974, the Environmental Protection Act 1998 and regulations made under them.

14. TRANSPORT INFORMATION

Solder alloys are not classified as hazardous for transport.

15. REGULATORY INFORMATION

Classification according to the Chemicals (Hazard information and Packaging for Supply) Regulations 1994:

Tin/lead solder alloy is considered to be an article and is not subject to the above regulations. However, it is recommended that the following information be included on labels:

Contains lead, which may harm your health. Lead can cause birth defects and other reproductive harm.

Regulations forbid the use of lead containing solder in any private or public drinking water supply system.

After handling wash hands with soap and water before eating, drinking and smoking.

Keep out of the reach of children.

Applicable EC Directives

Directive 82/605/EEC on the protection of workers from the risks related to the exposure to metallic lead and its ionic compounds at work.

Directive 80/1107/EEC on the protection of workers from the risk related to physical, chemical and biological agents at work.

Directive 92/85/EEC on the introduction of measures to encourage improvements in the safety and health at work of pregnant workers and workers who have recently given birth or are breastfeeding

Applicable UK Legislation

The Health and Safety at Work etc Act 1974

The Control of Lead at Work Regulation 1980

The Control of Substances Hazardous to Health Regulations 1994

The Management of Health and Safety at Work Regulations 1992

The Management of Health and Safety at Work (Amendment) Regulations 1994.

The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995

The information contained in this safety data sheet is accurate to the best of knowledge and belief of Grosvenor Electronics Supplies (UK). As we cannot anticipate all conditions under which this information and our products, or the products of other manufacturers in combination with our products, are used this safety data sheet cannot constitute the user's assessment of workplace risk. Users are advised to make their own test to determine the safety and suitability of each product or product combination for their own purposes.

16. OTHER INFORMATION

Recommended Uses

This safety data sheet covers a range of alloys in the form of wire and bar. Reference should be made to the Grosvenor Data sheets or Technical Department for further information.