



Safety Data Sheet – lead and lead alloys

1. Identification of the Preparation and Company

Intended Use	For professional use only
Company Name	Aura Metals Limited
Company Address	9 Beauchamp Place London SW3 1NQ
Telephone Number	020 7052 0095
Fax Number	020 7052 0112

2. Composition

This product contains the following substances including any that present a health hazard within the meaning of the Dangerous Substances Directive 67/548/EEC and the Dangerous Preparations Directive 1999/45/EC, both as amended and adapted to technical progress, and the Chemicals (Hazard Information and Packaging for Supply) Regulations SI 2002 No. 1689, or have occupational exposure limits detailed in HSE Guidance Note EH40.

Name	Concentration Range	Symbol	Risk Phrases*	Safety Phrases*	CAS Number
Lead	85 to 100%	Pb	Repr Cat 1: R61 Repr Cat 3: R20/22 R33 N: R50/53	S53, 45, 60, 61	7439-92-1
Aluminium	0 to 0.1%	Al	-	-	7429-90-5
Antimony	0 to 15%	Sb	Xn: R20/22 N: R51/53	S (2), 61	7440-36-0
Arsenic	0 to 1%	As	T: R23/25 N: R50/53	S (1/2), 20/21, 28, 45, 60, 61	7440-38-0
Calcium	0 to 1%	Ca	-	-	7440-70-2
Copper	0 to 0.1%	Cu	-	-	7440-50-8
Selenium	0 to 0.1%	Se	T: R23/25 R33 N: R50/53	S (1/2), 20/21, 28, 45, 60, 61	7782-49-2
Tin	0 to 2%	Sn	-	-	7440-31-5
Graphite	0 to 1%	C	-	-	7440-44-0

* For full text of Risk Phrases and Safety Phrases, see Appendix 1.

Aluminium, calcium (assigned OES is for calcium oxide, see Section 8), copper and tin have been assessed as non-hazardous when present in lead alloys at up to the concentrations given above.

Lead is assessed as low hazard whilst it remains in solid massive metallic form. The risk phrases given above apply to lead compounds, and are not considered as strictly applicable to



lead in massive metallic form, but rather should be considered where lead is heated or otherwise processed.

Graphite, where present, is a surface coating, and is only of concern as a possible slip hazard.

3. Hazard Identification of the Product

Lead and Lead Alloys, in massive metallic form, as ingots, blocks, slugs, shot, strip and wire.

4. First Aid Measures

Wash off with soap and water.

Skin Contact

Eye Contact If dust enters the eyes, flush with cold clean water. Seek medical attention.

Inhalation N / A

Ingestion Seek medical attention. Give the doctor a copy of this Safety Data Sheet.

5. Fire Fighting Measures

Not combustible.

If product is present at fire, suitable extinguishing media are dry powder, foam, water fog or spray.

6. Accidental Release Measures

If product is spilled, return to container for reuse, recycling or disposal.

Do not allow to enter any watercourse or drain.

7. Handling and Storage

Avoid inhaling dust or fume, which may be generated when the product is heated.

Store in a clean, cool, dry area.



8. Exposure Controls and Personal Protection

The HSE Guidance Note EH40 gives the relevant values for Occupational Exposure Standards as:

CAS Number	Substance	Type of Standard	8 hour Time-Weighted Average
7439-92-1	Lead	OEL (CLAW)	0.15 mg/m ³
7429-90-5	Aluminium (respirable dust)	OES (COSHH)	4 mg/m ³
7440-36-0	Antimony and antimony compounds except stibine (as Sb)	MEL (COSHH)	0.5 mg/m ³
7440-38-0	Arsenic and compounds except arsine (as As)	MEL (COSHH)	0.1 mg/m ³
1305-78-8	Calcium (oxide)	OES (COSHH)	2 mg/m ³
7440-50-8	Copper (dust)	OES (COSHH)	1 mg/m ³
7782-49-2	Selenium and compounds except hydrogen selenide (as Se)	OES (COSHH)	0.1 mg/m ³
7440-31-5	Tin compounds (as Sn)	OES (COSHH)	2 mg/m ³
7440-44-0	Graphite (respirable dust)	OES (COSHH)	4 mg/m ³

Personal Protection It is the responsibility of the user to carry out a suitable and sufficient risk assessment and to record and act on any significant findings, in accordance with the Approved Code of Practice for the Control of Lead at Work.

Ventilation Suitable equipment, which may include hoods, air movers and air cleaning equipment, may be required where lead and / or lead alloys are being melted, refined, cast or otherwise worked.

Respiratory Protection Use approved equipment if conditions require it.

Hand / Skin Protection Wear suitable gloves and clothing to avoid soiling and abrasions when handling solid lead. Cut resistant gloves should be worn when handling steel banding.

Specialist heat resistant and flame retardant clothing will be required for working with, or close to, hot or molten lead and lead alloys.

Wash hands after contact to avoid risk of ingestion.

Eye Protection Suitable eye and face protection will be required for working with, or close to molten lead and lead alloys. Simple safety spectacles will **NOT** be sufficient to prevent ingress of molten metal splash. Full-face visors offering a sufficient rating against molten metal may be suitable, but must only be selected in accordance with a suitable and sufficient risk assessment.

Other Protection As indicated by risk assessment. Suitable P.P.E. for use when heating / melting will typically include leather boots with protective toecaps and / or metatarsal guards.



9. Physical and Chemical Properties

Appearance	Malleable bluish-white to silvery grey metal
Physical State	Solid
Density	11.34 (pure lead, will vary for alloys)
Melting Point	327 °C (pure lead, will vary for lead alloys)
Boiling Point	1740 °C (pure lead, will vary for lead alloys)

10. Stability and Reactivity

Lead is stable under normal conditions but can react vigorously with strong oxidising agents (e.g. hydrogen peroxide) and reactive metals (e.g. sodium). Stable at room temperature. When heated above 500 °C, harmful fumes of lead and lead oxide (from reaction with oxygen in air) are produced.

11. Toxicological Information

Lead is known to produce a continuum of diverse biological effects in humans, depending on the dose, which are usually associated with high and long-term exposure.

The body absorbs lead by breathing in lead dust, fume or vapour, or by swallowing. If, for example, after handling lead a person eats, drinks or smokes, or bites their nails, without washing.

Metallic lead is not absorbed through the skin. Handling of cold metallic lead cannot directly cause lead poisoning.

Always wash hands after handling lead

Acute exposure can cause headaches, tiredness, irritability, constipation, nausea, stomach pains, anaemia, or loss of weight.

Continued uncontrolled exposure can cause kidney damage or nerve and brain damage.

These symptoms can also have causes other than lead exposure so they do not necessarily mean that lead poisoning has occurred.

Source HSE Control of Lead at Work Regulations 2002 (Third Edition) Approved Code of Practice and Guidance L132, and HSE Leaflet "Lead and You" (INDG 305, Sep 2003)

12. Ecological Information

Lead, arsenic and selenium are very toxic to aquatic organisms, and may caused long-term adverse effects in the aquatic environment.

Antimony is toxic to aquatic organisms, and may caused long-term adverse effects in the aquatic environment.

13. Disposal Considerations

Recycling is recommended wherever reasonably practicable.



Any discharge or disposal must be controlled and authorised by the relevant authority (Environment Agency in England and Wales) in accordance with statutory requirements.

14. Transport Information

For lead in massive metallic form (ingots, blocks, slugs, strip, shot etc.) the main consideration is to avoid contact with, and prevent contamination of, foodstuffs and items that might come into contact with foodstuffs.

Specific hazard identification and waste transfer notes are required for various classes of wastes, which contain lead.

15. Regulatory Information

Relevant Statutes and Regulations include (other Acts and Regulations may also apply):

Health and Safety

The Health and Safety at Work etc. Act 1974

The Control of Lead at Work Regulations 2002 (SI 2002 No. 2676)

The Control of Substances Hazardous to Health Regulations 2002 (SI 2002 No. 2677), as amended

The Chemicals (Hazard Information and Packaging for Supply) Regulations 2002 (SI 2002 No. 1689)

The Management of Health and Safety at Work Regulations 1999 (SI 1999 No. 3242)

The Personal Protective Equipment at Work Regulations 1992 (SI 1992 No. 2966)

The Manual Handling Operations Regulations 1992 (SI 1992 No. 2793)

The Workplace (Health, Safety and Welfare) Regulations 1992 (SI 1992 No. 3004)

The Health and Safety Commission publication that is especially valuable with regard to health aspects of working with lead is: Control of Lead at Work Regulations 2002 (Third Edition):

Approved Code of Practice and Guidance, L132, 2002

Environmental

The Environmental Protection Act 1990

The Water Resources Act 1991

The Water Industry Act 1991

The Clean Air Act 1993

The Environment Act 1995

The Pollution Prevention and Control Act 1999

The Controlled Waste Regulations 1992 (SI 1992 No. 588), as amended

The Waste Management Licensing Regulations 1994 (SI 1994 No. 1056), as amended

The Special Waste Regulations 1996 (SI 1996 No. 972), as amended

The Landfill Tax Regulations 1996 (SI 1996 No. 1527), as amended

The Air Quality (England) Regulations 2000 (SI 2000 No. 928)

The Pollution Prevention and Control (England and Wales) Regulations 2000 (SI 2000 No. 1973), as amended

The Landfill (England and Wales) Regulations 2002 (SI 2002 No. 1559)



16. Other Information

The information on this Safety Data Sheet is based on the present state of our knowledge and on current European and United Kingdom laws as applied in England on the date of issue.

Users in other countries should take all necessary steps to identify and satisfy the requirements of applicable laws within their respective countries.

The product should not be used for purposes other than shown in the product data sheet without first obtaining written professional advice.

It is always the responsibility of the user to take all necessary steps to satisfy the requirements of applicable legislation.

17. Appendix I

* Text of Risk Phrases and Safety Phrases

Repr Cat 1: R61 --- Reproductive Toxicity Category 1: May cause harm to the unborn child.

Repr Cat 3: R62 --- Reproductive Toxicity Category 3: Possible risk of impaired fertility.

Xn: R20/22 --- Harmful by inhalation and if swallowed.

T: R23/25 --- Toxic by inhalation and if swallowed.

R33 --- Danger of cumulative effects.

N: R50/53 --- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

N: R51/53 --- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S (1/2) --- Keep locked up and out of the reach of children.

S (2) --- Keep out of the reach of children.

S20/21 --- When using do not eat, drink or smoke.

S28 --- After contact with skin, wash immediately with plenty of soap and water.

S45 --- In case of accident or if you feel unwell seek medical advice immediately (show the label or this safety data sheet if possible).

S53 --- Avoid exposure - Obtain special instructions before use.

S60 --- This material and its container must be disposed of as hazardous waste.

S61 --- Avoid release to the environment. Refer to special instructions / safety data sheet.

DJW

21 January 2009