

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name LEAD ALLOYS (WITHOUT SILVER)
Synonyms 4000 TO 4800 - PRODUCT CODE • 5000 TO 6900 - PRODUCT CODE • ANTIMONIAL LEAD ALLOY • CABLE ALLOY • CALCIUM LEAD ALLOY • PB • SELENIUM ANTIMONIAL LEAD ALLOY • SELENIUM LEAD ALLOY

1.2 Uses and uses advised against

Uses LEAD PRODUCTION

1.3 Details of the supplier of the product

Supplier name NYRSTAR PORT PIRIE
Address PO Box 219, Port Pirie, SA, 5540, AUSTRALIA
Telephone (08) 8638 1500
Fax (08) 8638 1583
Website <http://www.nyrstar.com>

1.4 Emergency telephone numbers

Emergency (08) 8638 1500

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

GHS classifications Acute Toxicity: Oral: Category 4
Acute Toxicity: Inhalation: Category 4
Toxic to Reproduction: Category 1A
Specific Target Organ Systemic Toxicity (Repeated Exposure): Category 2

2.2 GHS Label elements

Signal word DANGER

Pictograms



Hazard statements

H302 Harmful if swallowed.
H332 Harmful if inhaled.
H360 May damage fertility or the unborn child.
H373 May cause damage to organs through prolonged or repeated exposure.

Prevention statements

P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P281 Use personal protective equipment as required.

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Response statements

P304 + P340 IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P330 Rinse mouth.

Storage statements

P405 Store locked up.

Disposal statements

P501 Dispose of contents/container in accordance with relevant regulations.

2.3 Other hazards

Toxic effects of Lead and alloying metals arise from exposure to dust, fume, vapour or mist forms and are not considered toxic in solid (metal) form.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

| Ingredient | CAS Number | EC Number | Content |
|-------------------------------|------------|-----------|---------|
| LEAD | 7439-92-1 | 231-100-4 | >95% |
| ANTIMONY | 7440-36-0 | 231-146-5 | <5% |
| TIN | 7440-31-5 | 231-141-8 | <1.2% |
| CALCIUM | 7440-70-2 | 231-179-5 | <0.5% |
| SELENIUM | 7782-49-2 | 231-957-4 | <0.5% |
| ARSENIC | 7440-38-2 | 231-148-6 | <0.4% |
| ALUMINIUM POWDER (PYROPHORIC) | 7429-90-5 | 231-072-3 | <0.03% |

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye Exposure is considered unlikely.
Inhalation Due to product form / nature of use, an inhalation hazard is not anticipated.
Skin Exposure is considered unlikely. Skin irritation is not anticipated.
Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). Due to product form and application, ingestion is considered unlikely.
First aid facilities None allocated.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture

Non flammable. May evolve toxic gases (lead oxides) when heated to decomposition.

5.3 Advice for firefighters

No fire or explosion hazard exists.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

PRODUCT NAME LEAD ALLOYS (WITHOUT SILVER)

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

If spilt, collect and return to manufacturer.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store removed from incompatible substances and foodstuffs. Ensure product is adequately labelled.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

| Ingredient | Reference | TWA | | STEL | |
|---------------------------------------|-----------|-----|-------------------|------|-------------------|
| | | ppm | mg/m ³ | ppm | mg/m ³ |
| Aluminium (metal dust) | SWA (AUS) | -- | 10 | -- | -- |
| Aluminium (welding fumes) (as Al) | SWA (AUS) | -- | 5 | -- | -- |
| Aluminium, alkyls (NOC+) (as Al) | SWA (AUS) | -- | 2 | -- | -- |
| Aluminium, pyro powders (as Al) | SWA (AUS) | -- | 5 | -- | -- |
| Aluminium, soluble salts (as Al) | SWA (AUS) | -- | 2 | -- | -- |
| Antimony & compounds (as Sb) | SWA (AUS) | -- | 0.5 | -- | -- |
| Arsenic & soluble compounds (as As) | SWA (AUS) | -- | 0.05 | -- | -- |
| Lead, inorganic dusts & fumes (as Pb) | SWA (AUS) | -- | 0.15 | -- | -- |
| Selenium compounds (as Se) | SWA (AUS) | -- | 0.1 | -- | -- |
| Tin, metal | SWA (AUS) | -- | 2 | -- | -- |

Biological limits

| Ingredient | Determinant | Sampling Time | BEI |
|------------|--|-----------------|-------------|
| ARSENIC | Inorganic arsenic plus methylated metabolites in urine | End of workweek | 35 µg As/L |
| LEAD | Lead in blood | Not critical | 200 µg/L |
| | Lead in blood (women of child bearing potential) | Not critical | 10 µg/100ml |
| | Lead in blood | Not critical | 30 µg/L |
| | Lead in blood (women of child bearing potential) | Not critical | 10 µg/L |

Reference: ACGIH Biological Exposure Indices

8.2 Exposure controls

Engineering controls No special precautions are normally required when handling this product.

PRODUCT NAME LEAD ALLOYS (WITHOUT SILVER)

PPE

| | |
|-------------|--|
| Eye / Face | Wear safety glasses. |
| Hands | Wear leather gloves. |
| Body | Wear safety boots. |
| Respiratory | Not required under normal conditions of use. |



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

| | |
|---------------------------|---|
| Appearance | BLUE/WHITE TO SILVER/GREY METALLIC SOLID (25 KG INGOTS, 1 TONNE AND 2 TONNE BLOCKS) |
| Odour | ODOURLESS |
| Flammability | NON FLAMMABLE |
| Flash point | NOT RELEVANT |
| Boiling point | 1740°C |
| Melting point | 250°C to 327°C |
| Evaporation rate | NOT AVAILABLE |
| pH | NOT AVAILABLE |
| Vapour density | NOT AVAILABLE |
| Specific gravity | 10.00 - 11.34 |
| Solubility (water) | INSOLUBLE |
| Vapour pressure | NOT AVAILABLE |
| Upper explosion limit | NOT RELEVANT |
| Lower explosion limit | NOT RELEVANT |
| Partition coefficient | NOT AVAILABLE |
| Autoignition temperature | NOT AVAILABLE |
| Decomposition temperature | NOT AVAILABLE |
| Viscosity | NOT AVAILABLE |
| Explosive properties | NOT AVAILABLE |
| Oxidising properties | NOT AVAILABLE |
| Odour threshold | NOT AVAILABLE |

10. STABILITY AND REACTIVITY

10.1 Reactivity

No reactivity hazard other than the effects described in sub-sections below.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid contact with incompatible substances.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites) and acids (e.g. nitric acid).

10.6 Hazardous decomposition products

May evolve toxic gases (lead oxides) when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

PRODUCT NAME LEAD ALLOYS (WITHOUT SILVER)

Acute toxicity Lead is expected to be harmful if swallowed, in contact with skin, and/or if inhaled.

Information available for the ingredients:

| Ingredient | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|------------|-----------------------|-------------|-----------------|
| LEAD | 50 - 600 mg/kg (calf) | -- | -- |
| ANTIMONY | 7000 mg/kg (rat) | -- | -- |
| SELENIUM | 6700 mg/kg (rat) | -- | -- |
| ARSENIC | 15 mg/kg (rat) | -- | -- |

| | |
|---------------------------------|--|
| Skin | Non irritant. Metallic lead is very poorly absorbed through the skin and is therefore not considered a hazard through this route of exposure. |
| Eye | Exposure considered unlikely. Due to product form and nature of use, the potential for exposure is reduced. |
| Sensitisation | Not classified as causing skin or respiratory sensitisation. |
| Mutagenicity | The evidence for genotoxic effects of lead is contradictory, with numerous studies reporting both positive and negative effects. Responses appear to be induced by indirect mechanisms, mostly at very high concentrations that lack physiological relevance. |
| Carcinogenicity | Lead compounds (inorganic) are classified as probably carcinogenic to humans (IARC Group 2A). |
| Reproductive | There is sufficient data to indicate that lead compounds may damage fertility or the unborn child. |
| STOT - single exposure | Not classified as causing organ damage from single exposure. Due to the product form (solid), an inhalation hazard is not anticipated. |
| STOT - repeated exposure | Lead is a cumulative poison and may be absorbed into the body through ingestion or inhalation. Lead has been documented in observational human studies to produce toxicity in multiple organ systems and body function including the haematopoietic (blood) system, kidney function, reproductive function and the central nervous system. |
| Aspiration | Not applicable for solids. |

12. ECOLOGICAL INFORMATION

12.1 Toxicity

No information provided.

12.2 Persistence and degradability

Inorganic lead does not degrade.

12.3 Bioaccumulative potential

Inorganic lead is considered to be bioaccumulating in the environment, and may accumulate in aquatic and terrestrial plants and animals.

12.4 Mobility in soil

Insoluble in water.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Return to manufacturer/supplier where possible. Contact the manufacturer/supplier for additional information (if required).

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

PRODUCT NAME LEAD ALLOYS (WITHOUT SILVER)

| | LAND TRANSPORT (ADG) | SEA TRANSPORT (IMDG / IMO) | AIR TRANSPORT (IATA / ICAO) |
|------------------------------------|----------------------|----------------------------|-----------------------------|
| 14.1 UN Number | None allocated. | None allocated. | None allocated. |
| 14.2 Proper Shipping Name | None allocated. | None allocated. | None allocated. |
| 14.3 Transport hazard class | None allocated. | None allocated. | None allocated. |
| 14.4 Packing Group | None allocated. | None allocated. | None allocated. |

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user**Hazchem code** None allocated.**Other information** Solid material not regulated for transport under 2.3.2.1.3 of the Australian Dangerous Goods (ADG) and International Maritime Dangerous Goods (IMDG) codes, and under 3.6.1.5.3 of the International Air Transport Association (IATA).**15. REGULATORY INFORMATION****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****Poison schedule** Classified as a Schedule 6 (S6) Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).**Classifications** Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.

The classifications and phrases listed below are based on the Approved Criteria for Classifying Hazardous Substances [NOHSC: 1008(2004)].

Hazard codes Repr. Reproductive toxin
Xn Harmful**Risk phrases** R20/22 Harmful by inhalation and if swallowed.
R33 Danger of cumulative effects.
R61 May cause harm to the unborn child.
R62 Possible risk of impaired fertility.**Safety phrases** S45 In case of accident or if you feel unwell seek medical advice immediately (show the label where possible).
S53 Avoid exposure - obtain special instructions before use.
S61 Avoid release to the environment. Refer to special instructions/safety data sheets.**Inventory listings** **AUSTRALIA: AICS (Australian Inventory of Chemical Substances)**
All components are listed on AICS, or are exempt.**16. OTHER INFORMATION****Additional information** EXPOSURE STANDARDS - TIME WEIGHTED AVERAGES: Exposure standards are established on the premise of an 8 hour work period of normal intensity, under normal climatic conditions and where a 16 hour break between shifts exists to enable the body to eliminate absorbed contaminants. In the following circumstances, exposure standards must be reduced: Strenuous work conditions; hot, humid climates; high altitude conditions; extended shifts (which increase the exposure period and shorten the period of recuperation).

IARC GROUP 2B - POSSIBLE HUMAN CARCINOGEN. This product contains an ingredient which has demonstrated sufficient evidence to have been classified by the International Agency for Research into Cancer (IARC) as possibly carcinogenic to humans and whose use should be strictly monitored and controlled.

RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

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PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

| | |
|-------------------|---|
| ACGIH | American Conference of Governmental Industrial Hygienists |
| CAS # | Chemical Abstract Service number - used to uniquely identify chemical compounds |
| CNS | Central Nervous System |
| EC No. | EC No - European Community Number |
| EMS | Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods) |
| GHS | Globally Harmonized System |
| GTEPG | Group Text Emergency Procedure Guide |
| IARC | International Agency for Research on Cancer |
| LC50 | Lethal Concentration, 50% / Median Lethal Concentration |
| LD50 | Lethal Dose, 50% / Median Lethal Dose |
| mg/m ³ | Milligrams per Cubic Metre |
| OEL | Occupational Exposure Limit |
| pH | relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline). |
| ppm | Parts Per Million |
| STEL | Short-Term Exposure Limit |
| STOT-RE | Specific target organ toxicity (repeated exposure) |
| STOT-SE | Specific target organ toxicity (single exposure) |
| SUSMP | Standard for the Uniform Scheduling of Medicines and Poisons |
| SWA | Safe Work Australia |
| TLV | Threshold Limit Value |
| TWA | Time Weighted Average |

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

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