# SAFETY DATA SHEET
# Pure Aluminium

## 1. identification of the substance/preparation and of the company/undertaking

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| Date issued | 02.10.2008 |
| Product name | Pure Aluminium |
| Synonyms | AA: 1xx serie |
| Product group | Ingots: mould cast and continuously cast, 5-25 kg, in bundles of 500 - 1200 kg |
| Use of the substance/preparation | Casting alloy |

### Producer

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| Company name | Hydro Aluminium AS |
| Postcode | 0240 |
| Place name | Oslo |
| Country | Norway |
| Prepared by | BIS Production Partner, Kari-Anne Barstad |

## 2. hazards identification

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| Hazard description | No subject to classification.<br><br>Not hazarding as solid ingot. Fine particles from processing may be easily ignitable. Molten metal and fine particles are highly reactive in contact with water, acids, alkalis, strong oxidisers, halogenated compounds and certain metal oxides. |

## 3. composition/information on ingredients

| Component name | Identification | Labelling/classification | Contents |
|---|---|---|---|
| Aluminium (metal) | CAS no.: 7429-90-5<br>EC no.: 231-072-3 | | 99 - 100 % |
| Silicon | CAS no.: 7440-21-3<br>EC no.: 231-130-8 | | 0 - 0,5 % |
| Iron | CAS no.: 7439-89-6<br>EC no.: 231-096-4 | | 0 - 0,5 % |
| Column headings | CAS no. = Chemical Abstracts Service; EU (Einecs or Elincs number) = European inventory of Existing Commercial Chemical Substances; Ingredient name = Name as specified in the substance list (substances that are not included in the substance list must be translated, if possible). Contents given in; %, %wt/wt, %vol/wt, %vol/vol, mg/m3, ppb, ppm, weight%, vol% | | |
| HH/HF/HE | T+ = Very toxic, T = Toxic, C = Corrosive, Xn = Harmful, Xi = Irritating, E = Explosive, O = Oxidizing, F+ = Extremly flammable, F = Very flammable, N = Environmental hazard | | |
| Component comments | Other impurities usually < 0,1 %. | | |

## 4. first-aid measures

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| General | Normally not relevant for ingots. |
| Inhalation | In case of discomfort, move to ventilated area. If necessary, seek medical advice |
| Skin contact | In case of contact with hot or molten metal, flush with plenty of water. If severe, seek medical advice. |
| Eye contact | If particles or dust got in the eyes, flush with plenty of water. Seek medical |

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| | advice if discomfort persists. |

## 5. fire-fighting measures

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| Suitable extinguishing media | In case of aluminium fires or presence of liquid aluminium use a dry-powder extinguisher. |
| Improper extinguishing media | Do not use water or halogenated media. |
| Fire and explosion hazards | In shape of ingots, the product is not flammable and has no risk of explosion. Fine dust from the product may be ignited and represent a risk of explosion. Burning dust from this product will produce noxious smoke containing metal oxides. |

## 6. accidental release measures

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| Methods for cleaning | Collect mechanically, recycle if possible. |
| Other instructions | This product is not considered to be hazardous to the environment. |

## 7. handling and storage

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| Handling | Ingots may have sharp edges (continuous cast) and sharp surface defects. Add only completely dry and/or preheated solid metal to a melt in order to avoid the risk of explosion. |
| Storage | Ingots shall be stored dry and free from oil and dust. Pay attention to stack stability, if bundles are put on each other. |

## 8. exposure controls/personal protection

### Exposure limit values

| Component name | Identification | Unit | Year |
|---|---|---|---|
| Aluminium, dust (OSHA, PEL) | CAS no.: 7429-90-5<br>EC no.: 231-072-3 | 8h: 5 mg/m³ (resp.)<br>8h: 15 mg/m³ (total) | 2008 |
| Aluminium metal (ACGIH, TLV) | CAS no.: 7429-90-5<br>EC no.: 231-072-3 | 8h: 1 mg/m³ (resp) | 2008 |
| Silicon, dust (OSHA, PEL) | CAS no.: 7440-21-3<br>EC no.: 231-130-8 | 8h: 5 mg/m³ (resp.)<br>8h: 15 mg/m³ (total) | 2008 |
| Iron oxide, fume or respirable dust (as Fe) (OSHA, PEL) | CAS no.: 1309-37-1<br>EC no.: 215-168-2 | 8h: 1 mg/m³ | 2008 |
| Iron oxide (ACGIH, TLV) | CAS no.: 1309-37-1<br>EC no.: 215-168-2 | 8h: 5 mg/m³ (resp) | 2008 |

### Exposure controls

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| Other Information | Exposure Limit Values - Abbreviations:<br>OSHA: Occupational Safety and Health Administration (USA)<br>PEL: Permissible Exposure Limit<br>ACGIH: American Conference of Governmental Industrial Hygienists<br>TLV: Treshold Limit Value<br><br>National occupational exposure limits must be taken into account.<br><br>All protective equipment should be labelled with CE. All protective equipment should be tested according to relevant CEN-standards. |
| Occupational exposure controls | Eye wash facilities should be available. Provide good ventilation. Avoid handling, such as welding, that will produce metal dust. |
| Respiratory protection | Wear respiratory protection with particle filter P2 in dusty conditions and when cutting, welding, grinding, melting etc. |
| Hand protection | Wear leather gloves or the like when cutting, welding, grinding, melting etc. |

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| Eye protection | Wear dust proof goggles in dusty conditions and when cutting, welding, grinding, melting etc. |
| Skin protection (other than of the hands) | When molten metal is handled use appropriate personal protective equipment (ref.: AA Guidelines for handling molten aluminium) |

## 9. physical and chemical properties

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| Physical state | Solid. Ingots 5-25 kg. |
| Odour | None |
| Colour | Grey |
| Solubility description | Insoluble in water |
| Specific gravity | **Value:** 2,68 g/cm³<br>**Comments:** (Al) |
| Melting point/melting range | **Value:** 500-650 °C |
| Boiling point | **Value:** 2494 °C<br>**Comments:** (Al) |
| Vapour pressure | **Value:** 1 mmHg<br>**Comments:** (applies to Al) |

## 10. stability and reactivity

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| Materials to avoid | Strong acids or bases. Molten aluminium may explode when getting in contact with water. When in form of particles, aluminium may explode in presence of halogenated acids, halogenated solvents, bromates, iodates or ammonium nitrate. Aluminium particles in contact with copper, lead or iron oxides can react violently and exothermic provided a source of ignition or intense heat. |
| Hazardous decomposition products | Flammable hydrogen gas may be released when i contact with strong acids or bases. Hydrogen is explosive in consentrations exceding 4 vol-%. Otherwise this product shows little reaction with other chemicals. |
| Stability | Massive metal is stable and non reactive under normal condition of use, storage and transport. |

## 11. toxicological information

### Other information regarding health hazards

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| General | A dust free product does not imply any health risk. Cutting, welding, grinding etc. will generate dust, smoke or particles containing the components of this product. Heating above the melting point wil produce metal vapours that can be oxidized to toxic metal oxides, or the vapour might condensate to aerosol containing respirable particles. Inhalation of metal aerosoles and fumes might imply a health risk.<br><br>Contact with hot metal can give severe burns. |
| Inhalation | Metalldust/fumes may irritate repiratory system. Overexposure to dust or fumes may give chronic health effects (shortness of breath, cough, loss of lungfunction). Inhalation of fumes may give metal fever. |
| Skin contact | Metaldust/fumes may provide skin irritation. |
| Eye contact | Dust irritates eyes. |
| Ingestion | Dust/particles/vapours may irritate muscous membranes. |

## 12. ecological information

### Other ecological information

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| Mobility | Aluminium is not mobile in the environment, unless it comes in contact with an aqueous environment with a pH below 5.5 or above 8.5 |
| Environmental details, conclusion | Not expected to be hazardous to the environment. |

## 13. disposal considerations

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| EWC waste code | 06 04 05 |
| NORSAS | 7091 (Norway) |
| Product classified as hazardous waste | No |
| Specify the appropriate methods of disposal | Collect mechanically and place in suitable container. Dispose of at approved waste receiving station. Recycle if possible. |
| Other Information | Information of wastenumber and EWC-code are only intended as a guide. The user have to decide the final wastegroup numbers and EWC-codes based on the actual use of the product. |

## 14. transport information

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| Dangerous goods RID | **Status:** No |
| Other applicable information. | Not classified as dangerous goods according to ADR, RID, IMDG or IATA. |

## 15. regulatory information

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| R phrases | Not subject to classification. |
| References (laws/regulations) | Compilation of Safety Data Sheet: EC Regulation no. 1907/2006 of European Parliament and of the Counsil of 18. Dec. 2006 (REACH).<br>Classification and labelling of the product: EU Council Directive 67/548/EEC (substances), Annex I (29. ATP) and 1999/45/EC (preparations).<br>Transport classification according to Transport regulations: ADR/RID, IMDG, IATA.<br>OSHA/ACGIH: Occupational Exposure Limit Values<br>European waste catalogue and European Waste List. Norwegian Waste Regulations. |
| No duty to declare owing to | Non hazardous product |

## 16. other information

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| Information which has been added, deleted or revised | First edition in English |
| Supplier's notes | The safety data sheet has been approved in accordance with the regulations in force. BIS Production Partner is not responsible for any errors or deficiencies in the information received from the manufacturer/ supplier. The manufacturer/ supplier mentioned in section 1 is legally responsible for the contents of the safety data sheet. |
| Checking quality of information | GK 02.10.2008 Kab |
| Responsible for safety datasheet | Hydro Aluminium AS |