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| Infosafe No™ | 1CH0S | Issue Date : August 2016 | RE-ISSUED by CHEMSUPP |
|--------------|-------|--------------------------|-----------------------|

Product Name : **ALUMINIUM POWDER**

Not classified as hazardous

1. Identification

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| GHS Product Identifier | ALUMINIUM POWDER | | |
| Company Name | CHEM-SUPPLY PTY LTD (ABN 19 008 264 211) | | |
| Address | 38 - 50 Bedford Street GILLMAN SA 5013 Australia | | |
| Telephone/Fax Number | Tel: (08) 8440-2000 Fax: (08) 8440-2001 | | |
| Recommended use of the chemical and restrictions on use | Used in the manufacture of construction materials, containers, electrical equipment, appliances, explosives, photoengraving plates, permanent magnets, printing inks, automobile industry, aircraft industry, production of inorganic and organic aluminium chemicals, therapeutic and pharmaceutical agent, hydrate for water purification, reducing agent, cryogenic technology, paint, protective coatings, rocket fuel, catalyst and laboratory reagent. | | |
| Other Names | <u>Name</u> | | <u>Product Code</u> |
| | ALUMINIUM POWDER LR | | AL030 |
| Other Information | EMERGENCY CONTACT NUMBER: +61 08 8440 2000 Business hours: 8:30am to 5:00pm, Monday to Friday. | | |

Chem-Supply Pty Ltd does not warrant that this product is suitable for any use or purpose. The user must ascertain the suitability of the product before use or application intended purpose. Preliminary testing of the product before use or application is recommended. Any reliance or purported reliance upon Chem-Supply Pty Ltd with respect to any skill or judgement or advice in relation to the suitability of this product of any purpose is disclaimed. Except to the extent prohibited at law, any condition implied by any statute as to the merchantable quality of this product or fitness for any purpose is hereby excluded. This product is not sold by description. Where the provisions of Part V, Division 2 of the Trade Practices Act apply, the liability of Chem-Supply Pty Ltd is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.

2. Hazard Identification

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| GHS classification of the substance/mixture | Not classified as hazardous according to the Approved Criteria for Classifying Hazardous Substances [NOHSC:1008(2004) 3rd Edition, Safe Work Australia. | | |
| Other Information | Not classified as dangerous goods according to the Australian Dangerous Goods Code (ADG). Dangerous Goods Classification: This grade of aluminium atomised powder has been tested by an independent laboratory in accordance with the test procedures laid out in the ADG Code. The criteria for the 'dangerous when wet' classification is NOT met by this aluminium atomised powder, and accordingly has not been classified as a Dangerous Good. The decreased sensitivity to moisture and reactive nature of finely divided metal powders is due to a protective oxide layer. | | |

3. Composition/information on ingredients

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|----------------------------------|-------------|------------|-------------------|----------------------|--------------------|
| Chemical Characterization | Solid | | | | |
| Ingredients | <u>Name</u> | <u>CAS</u> | <u>Proportion</u> | <u>Hazard Symbol</u> | <u>Risk Phrase</u> |
| | Aluminium | 7429-90-5 | 100 % | | |

4. First-aid measures

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| Inhalation | If inhaled, remove from contaminated area to fresh air immediately. Apply artificial respiration if not breathing. If breathing is difficult, give oxygen. Get medical aid if cough or other symptoms appear. |
| Ingestion | Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. DO NOT INDUCE VOMITING. Seek medical advice if effects persist. |
| Skin | Wash with plenty of soap and water. If irritation occurs seek medical advice. |
| Eye contact | Immediately irrigate with copious quantity of water for at least 15 minutes. Eyelids to be held open. Seek immediate medical assistance. |
| First Aid Facilities | Maintain eyewash fountain and safety shower in work area. |
| Advice to Doctor | Treat symptomatically based on judgement of doctor and individual reactions of the patient. |
| Other Information | For advice, contact a Poisons Information Centre (Phone eg Australia 13 1126; New Zealand 0800 764 766) or a doctor. |

5. Fire-fighting measures



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| Hazards from Combustion Products | Under fire conditions this product will emit oxides of aluminium. |
| Specific Methods | Small fire: Use dry chemical, soda ash, lime or sand. DO NOT USE WATER OR FOAM. If safe to do so, move undamaged containers from fire area. Large fire: Use DRY sand, dry chemical, soda ash or lime or withdraw and let fire burn. DO NOT USE WATER OR FOAM. Cool containers with flooding quantities of water until well after fire is out. Avoid getting water inside containers. |
| Specific hazards arising from the chemical | Non flammable, however finely divided dust may form explosive mixtures in air when exposed to heat or ignition source (DO NOT disturb burning dust). Fires may re-ignite during extinguishing process. |
| Precautions in connection with Fire | Wear SCBA and chemical splash suit. Structural firefighter's uniform may provide limited protection. |

6. Accidental release measures

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| Spills & Disposal | ELIMINATE all ignition sources (no smoking, flares, sparks or flames) within at least 25m. Do not touch or walk through spilled material. Stop leak if safe to do so - Prevent entry into waterways, drains or confined areas. Water spray may be used to knock down vapours or divert vapour clouds. DO NOT GET WATER inside containers or in contact with substance. Cover with DRY earth, sand or other non-combustible material followed by plastic sheet to minimize spreading or contact with rain. If large quantities of this material enter the waterways contact the Environmental Protection Authority, or your local Waste Management Authority. SEEK EXPERT ADVICE ON HANDLING AND DISPOSAL. |
| Personal Precautions | Avoid substance contact. Avoid generation of dusts: do not inhale dusts. Ensure supply of fresh air in enclosed rooms. |
| Personal Protection | Wear protective clothing specified for normal operations (see Section 8) |
| Clean-up Methods - Small Spillages | Sweep up (avoid generating dust) and using clean non-sparking tools transfer to a clean, suitable, clearly labelled container for disposal in accordance with local regulations. |

7. Handling and storage

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| Precautions for Safe Handling | Avoid substance contact and generation and inhalation of dust. Contaminated clothing should be removed and washed before reuse. Take precautionary measures against static discharges. Electrostatic charges may be generated during handling; for example, when crushing, grinding, and sewing or emptying bags. Earth all equipment including funnels, chutes and drums. Extinguish any naked flames. Remove ignition sources. Avoid sparks. Do not smoke. |
| Conditions for safe storage, including any incompatibilities | Store away from acids. Keep container tightly closed in a dry, well-ventilated place away from direct sunlight and other sources of heat or ignition. Store at room temperature (15 - 25 °C). Store away from bases. Store away from foodstuffs. Store away from chlorinated hydrocarbons. |
| Unsuitable Materials | Metals - Aluminium is strongly electropositive so that it corrodes rapidly in contact with other metals. |

8. Exposure controls/personal protection

| Occupational exposure limit values | Name | STEL | | TWA | | Footnote |
|---|--|-------------------|-----|-------------------|-----|--------------------------|
| | | mg/m ³ | ppm | mg/m ³ | ppm | |
| | Aluminium | | | 10 | | (metal dust) (elemental) |
| Other Exposure Information | A time weighted average (TWA) has been established for Aluminium (metal dust - elemental) (Safe Work Australia) of 10 mg/m ³ . The exposure value at the TWA is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. | | | | | |
| Appropriate engineering controls | In industrial situations maintain the concentrations values below the TWA. This may be achieved by process modification, use of local exhaust ventilation, capturing substances at the source, or other methods. | | | | | |
| Respiratory Protection | Where ventilation is not adequate, respiratory protection may be required. Avoid breathing dust, vapours or mists. Respiratory protection should comply with AS 1716 - Respiratory Protective Devices and be selected in accordance with AS 1715 - Selection, Use and Maintenance of Respiratory Protective | | | | | |



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| Eye Protection | Devices. Filter capacity and respirator type depends on exposure levels. In event of emergency or planned entry into unknown concentrations a positive pressure, full-facepiece SCBA should be used. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection. |
| Hand Protection | The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336. Hand protection should comply with AS 2161, Occupational protective gloves - Selection, use and maintenance. Recommendation: Impervious PVC or rubber gloves should be worn to avoid prolonged skin contact. |
| Personal Protective Equipment | Final choice of personal protective equipment will depend on individual circumstances and/or according to risk assessments undertaken. |
| Footwear | Safety boots in industrial situations is advisory, foot protection should comply with AS 2210, Occupational protective footwear - Guide to selection, care and use. |
| Body Protection | Flame retardant protective clothing. Clean clothing or protective clothing should be worn, preferably with an apron. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals. |
| Hygiene Measures | Always wash hands before smoking, eating or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using. |

9. Physical and chemical properties

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| Form | Solid |
| Appearance | Silvery-white, crystalline solid or grit. |
| Odour | Odourless. |
| Melting Point | 660 °C |
| Boiling Point | 2450 - 2467 °C |
| Solubility in Water | Insoluble. |
| Solubility in Organic Solvents | Insoluble in most organic solvents. Forms soluble salts with alkalis, sulfuric acid and hydrochloric acid. Insoluble in hot acetic acid and concentrated nitric acid. |
| Specific Gravity | 2.7 |
| Molecular Weight | 26.98154 |

10. Stability and reactivity

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| Chemical Stability | Bulk solid is stable. Dust forms explosive mixtures in air. Bulk dust when damp may heat spontaneously. Hazard is greater as size of particles decreases. |
| Incompatible Materials | Water, strong acids (eg nitric acid) and alkalis (eg hydroxides), oxidizing materials (eg hypochlorites, peroxides), halogens, nitrates, sulfates, sulfides, alcohols, ammonium compounds, alkali hydroxides, alkali salts, halogenated hydrocarbons, semimetallic oxides, nonmetals, nonmetallic oxides, halogen-halogen compounds, metallic oxides, metallic salts, oxygen, mercury compounds, semimetallic halides and nonmetallic halides. |
| Hazardous Decomposition Products | Aluminium oxides. |
| Possibility of hazardous reactions | Bulk aluminum powder may heat spontaneously when wet and flammable hydrogen gas may form. Mixtures of aluminum powder and water can explode if detonated. Contact with strong acids and bases releases flammable hydrogen gas. Contact with oxidising agents may react violently or ignite. Contact with metals may cause rapid corrosion when wet. Mixtures with metal oxides react vigorously when ignited. Temperature may reach 2200 °C. Mixtures with halogens may ignite. Mixtures with halogenated hydrocarbons with heating or friction may cause explosive reaction. May react with alcohols when heated to form alkoxides. |
| Hazardous Polymerization | Will not occur. |

11. Toxicological Information

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| Toxicology Information | High levels of aluminium in the diet may inhibit absorption of phosphorus into the body. Animals given about 1400 ppm aluminium in the diet had decreased phosphorus in the blood and bone. |
| Acute Toxicity - Oral | Acute Exposure: LD50 values for aluminium ingestion are unavailable, because aluminium is only sparingly absorbed from the gut, causing death to occur from intestinal blockage due to precipitated aluminium species rather than systemic aluminium toxicity. |



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| Ingestion | Low toxicity. Causes irritation of the mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract and nausea and vomiting. |
| Inhalation | High concentrations of dust may be physically irritating to the respiratory system and cause deposits of dust in nasal passages. |
| Skin | May cause irritation by abrasion. |
| Eye | Dust may cause irritation due to abrasion. May cause lachrymation, redness and pain. Particles lodged in the eye may cause conjunctivitis and corneal damage. |
| Carcinogenicity | Not listed in the IARC Monographs. |
| Chronic Effects | Prolonged or repeated exposure to fine aluminium powder may cause asthma-like symptoms, scarring of lung tissue (lung fibrosis), brain damage (encephalopathy) and Alzheimers disease. Symptoms of lung injury include difficulty breathing, coughing, drowsiness, loss of appetite and rapid breathing. Inhaled aluminium particles may remain deposited in the lungs. |
| Mutagenicity | No evidence of mutagenic properties. |
| Respiratory Irritation | May cause minor irritation to lungs. |

12. Ecological information

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| Known Harmful Effects on the Environment | No environmental hazard is anticipated provided that the material is handled and disposed of with due care and attention. |
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13. Disposal considerations

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| Disposal Considerations | Whatever cannot be saved for recovery or recycling should be disposed of according to relevant local, state and federal government regulations. |
| Waste Disposal | Dispose of according to relevant local, state and federal government regulations. |

14. Transport information

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|------------------------------|---|
| Transport Information | Not classified as a Dangerous Good according to the Australian Code for the Transport of Dangerous Goods by Road and Rail. Dangerous Goods Classification: This grade of aluminium atomised powder has been tested by an independent laboratory in accordance with the test procedures laid out in the ADG Code. The criteria for the 'dangerous when wet' classification is NOT met by this aluminium atomised powder, and accordingly has not been classified as a Dangerous Good. The decreased sensitivity to moisture and reactive nature of finely divided metal powders is due to a protective oxide layer. |
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15. Regulatory information

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| Regulatory Information | Listed in the Australian Inventory of Chemical Substances (AICS). |
| Poisons Schedule | Not Scheduled |

16. Other Information

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| Literature References | 'Standard for the Uniform Scheduling of Medicines and Poisons No. 6', Commonwealth of Australia, February 2015. Lewis, Richard J. Sr. 'Hawley's Condensed Chemical Dictionary 13th. Ed.', Rev., John Wiley and Sons, Inc., NY, 1997. National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.', 2007. Safe Work Australia, 'National Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals', 2011. Standards Australia, 'SAA/SNZ HB 76:2010 Dangerous Goods - Initial Emergency Response Guide', Standards Australia/Standards New Zealand, 2010. Safe Work Australia, 'Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004)]'. Safe Work Australia, 'Hazardous Substances Information System, 2005'. Safe Work Australia, 'National Code of Practice for the Labelling of Safe Work Hazardous Substances (2011)'. Safe Work Australia, 'National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995) 3rd Edition]'. Paul McCarthy Ph. (08) 8440 2000 DISCLAIMER STATEMENT: All information provided in this data sheet or by our technical representatives is compiled from the best knowledge available to us. However, since data, safety standards and government regulations are subject to change and the conditions of handling and use, or misuse, are beyond our control, we make |
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Safety Data Sheet

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