

# MATERIAL SAFETY DATA SHEET – ALUMINIUM ATOMISED GRIT

This MSDS summarises our best knowledge of the health and safety hazard information of the products and how to safely handle and use the product in the workplace. Each user should read this MSDS and consider the information in the context of how the product will be handled and used in the workplace including in conjunction with other products.

## STATEMENT OF HAZARDOUS NATURE Hazardous according to Worksafe Australia criteria

### COMPANY DETAILS

Date: 05/03/2003  
Company: Australian Metal Powders Supplies Pty Ltd ABN 90 074 452 556  
Address: PO Box 477, Merrylands, NSW, 2160, Australia  
Telephone: 02 9681 6155  
Emergency: 13 11 26 Australian Poisons Centre  
Fax: 02 9681 6092

### IDENTIFICATION

#### PHYSICAL AND CHEMICAL PROPERTIES:

Flammability:	NON FLAMMABLE	Flash Point:	NOT RELEVANT
Boiling Point:	2450-2467° C	Melting Point:	660° C
Exposure Standard (TWA):	10 mg/m3	Evaporation Rate:	NOT AVAILABLE
	Aluminium dust		
pH:	NOT AVAILABLE	% Volatiles:	NOT AVAILABLE
Specific Gravity:	2.7	Solubility:	INSOLUBLE
Vapour Pressure:	NOT AVAILABLE	Upper Explosion Limit :	NOT AVAILABLE
Lower Explosion Limit:	NOT AVAILABLE		

### HEALTH HAZARDS:

**Health Hazard Summary** Irritant – Low toxicity. This product has the potential to cause adverse health effects. Use safe work practices to avoid eye or skin contact and dust inhalation. Chronic over exposure to dust may result in breathing difficulties and severe lung fibrosis.

**Eye** Low to moderate irritant. Direct contact may result in lacrimation, pain, redness and conjunctivitis.

**Inhalation** Irritant. Over exposure may result in mucous membrane irritation. Under controlled conditions of use no adverse health effects are anticipated. Some studies report that chronic exposure to fine aluminium dust may cause asthma-like symptoms, lung fibrosis (restricting lung function) and a link with Alzheimer's disease.

**Skin** Low irritant. Prolonged and repeated exposure to dust/powder may result in irritation due to mechanical action.

**Ingestion** Low toxicity. With large doses ingestion may result in nausea, vomiting and gastrointestinal irritation.

### PRECAUTIONS:

**Flammability** Non-flammable. Naked lights if dispersed in air easily ignite dust. May evolve flammable hydrogen gas upon contact with oxidising agents, acids and alkalis.

**Reactivity** Incompatible with oxidising agents (eg. hypochlorites, peroxides), acids (eg. nitric acid), and alkalis (eg. hydroxides).

**Ventilation** Do not inhale dust/powder. Use with adequate natural ventilation. Where a dust hazard exists, mechanical explosion proof extraction ventilation is recommended.

### PERSONAL PROTECTIVE EQUIPMENT:

**PPE** Wear dust-proof goggles and PVC or rubber gloves. When using large quantities or where heavy contamination is likely, wear coveralls. Where an inhalation risk exists, wear a Class P1 (Particulate) respirator. At high dust levels, wear a Powered Air Purifying Respirator (PAPR) with Class P3 (Particulate) filter or a Full-face Class P3 (Particulate) respirator.

### FIRST AID:

**Eye** (Dust exposure) Flush gently with running water. Seek medical attention if irritation develops.

**Inhalation** If overexposure occurs leave exposure area immediately. If other than minor symptoms are displayed seek immediate medical attention.

**Skin** Remove contaminated clothing and gently flush affected areas with water. Seek medical attention if irritation develops. Launder clothing before reuse.

**Ingestion** If poisoning occurs, contact a Doctor or Poisons Information Centre **13 11 26 (Australia Wide)**. Do not induce vomiting without first seeking medical advice. Ingestion is considered unlikely due to product form.

### SAFE HANDLING:

**Storage** Store in cool, dry, well-ventilated area, removed from oxidising agents, acids, alkalis, foodstuffs, heat and ignition sources. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use.

**Waste Disposal** Recycle where possible. Collect without generating dust. Eliminate all ignition sources. **CAUTION:** May evolve flammable gases upon contact with water. Place

in clean, sealed containers and dispose of to an approved landfill site. Contact AMPS or Risk Management Technologies on (08) 9322 1711 for additional information.

**Transport** Not regulated for transport purposes.

### EMERGENCY:

**Spillage** If spilt (bulk), wear dust-proof goggles, PVC/rubber gloves, a Class P1 (Particulate) respirator, coveralls and boots. Eliminate all ignition sources and do not use water as flammable gases may be evolved. Collect without generating dust and place in dry, clean, pressure vented, metal containers for re-use or disposal. Do not contaminate drains or waterways. Use spark proof equipment and shovels.

**Environment** Aluminium in soil may be present as the metal, the oxide or hydroxide, the 3+ ion, or the 3+ ion as an organic complex. The mobility in soil will be greater at high or low soil pH. The earth's crust contains 8.8% aluminium.

**Fire and Explosion** Non-flammable, however finely divided dust may form explosive mixtures in air when exposed to heat or ignition sources (DO NOT disturb burning dust). Evacuate area and contact emergency services. Toxic gases may be evolved when heated. Remain upwind and notify those downwind of the hazard. Wear full protective equipment (see spill above) including Self Contained Breathing Apparatus (SCBA) when combating fire. Fires may re-ignite during extinguishing process.

**Extinguishing** Dry agent, soda ash, sand or lime. DO NOT use water or foam. Prevent contamination of drains/waterways, absorb runoff with sand. Withdraw from area and let fire burn out.

### ADDITIONAL INFORMATION:

This Chem Alert Report has been prepared as a material safety data sheet on behalf of the manufacturer, in accordance with the National Code of Practice for the Preparation of Material Safety Data Sheets [NOHSC: 2011(1994)].

#### HAG PHRASES:

Hag STANDS FOR Hazardous Action Guide. HAG phrases describe in simple terms the hazard associated with chemical products and the appropriate action to take in the event of an emergency involving this product. HAG phrases are commonly used by emergency services.

(8) Form: Solid. (51) Does not mix with water. (64) Avoid dust. (80) Fire fighting: Does not burn.

#### ADDITIONAL INFORMATION FOR: ALUMINIUM

Concentration in this product:>60%

Molecular Formula: Al

Molecular Weight: 26.98

#### HEALTH HAZARDS – HEALTH HAZARD SUMMARY

Respiratory symptoms and pulmonary fibrosis can occur following chronic exposure to aluminium fume and fine aluminium powder respectively. The case for linking chronic over exposure to aluminium with Alzheimer's disease has been somewhat strengthened with a study showing elevated risks for Alzheimer's in relation to aluminium content of the drinking water; relative risk with aluminium content greater than 100 ug/L was 1.7 (McLachlan et al, 1996).

#### HEALTH HAZARDS – EYE

Particles lodged within the eye may cause conjunctivitis and corneal damage.

#### HEALTH HAZARDS – INHALATION

Chronic exposure to dusts containing aluminium or aluminium oxide may cause a type of lung fibrosis (eg if welding) may cause respiratory symptoms such as chronic cough.

TWA: 5 mg/m<sup>3</sup> (welding fume), 10 mg/m<sup>3</sup> (dust).

### ADDITIONAL SAFE HANDLING INFORMATION:

**COLOUR RATING SYSTEM:** Chem Alert reports are assigned a colour rating of Green, Amber or Red for the purpose of providing users with a quick and easy means of determining the hazardous nature of a product. Safe handling recommendations are provided in all Chem Alert reports so as to clearly identify how users can control the hazards and thereby reduce the risk (or likelihood) of adverse effects. As a general guideline a Green colour rating indicates a low hazard, an Amber colour rating indicates a moderate hazard and a Red colour rating indicates a high hazard.

**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.

**ABBREVIATIONS:** \*\*\* mg/m<sup>3</sup> – Milligrams per cubic metre \*\*\* ppm – Parts Per Million \*\*\* TWA/ES – Time Weighted Average or Exposure Standard. \*\*\* pH – relates to hydrogen ion concentration – this value will relate to a scale of 0 – 14, where 0 is highly acidic and 14 is highly alkaline. \*\*\* CAS# - Chemical Abstract Service number – used to uniquely identify chemical compounds. \*\*\* M – moles per litre, a unit of concentration. \*\*\* IARC – International Agency for Research on Cancer.

### ADDITIONAL INFORMATION cont:

**Dangerous Goods Classification:** An independent laboratory has tested all grades of Comalco aluminium atomised powder in accordance with the detailed test procedures laid down in the ADG Code. Comalco's atomised powder does NOT meet the criteria for the "dangerous when wet" classification, and accordingly these powders have not been classified as Dangerous Goods. Finely divided metal powder has a protective oxide layer, which reduces the materials reactive nature and moisture sensitivity.

**Personal Protective Equipment Guidelines:** The recommendation for protective equipment contained within this Chem Alert report is provided as a guide only. Factors such as 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. Information provided by Risk Management Technologies is summarised for ease of use. Additional technical information is available by calling (08) 9322 1711.

Viton is a registered trademark of DuPont Dow.  
Barrier is a registered trademark of Ansell.

**Health Effects From Exposure:** It should be noted that the effects from exposure to this product would depend on several factors including: 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 Chem Alert report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control method where appropriate.

**Transport Information:** Where a United Nations Number (UN No) is present on the Chem Alert report, the product is classified as a Dangerous Good by the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by road or rail.

### **ADDITIONAL PRODUCT INFORMATION:**

**PRECAUTIONS – REACTIVITY:**

Finely divided aluminium reacts slowly with water to liberate flammable hydrogen gas, which may pressurise sealed containers causing them to rupture. Wetted powder sludge which is not completely covered by water will present a flammability hazard. In bulk, dry powder can build up a static electric charge when subject to the friction of conveying, mixing or sliding.

**PRECAUTIONS – VENTILATION:**

Maintain dust levels below the recommended exposure standard 9TLV/TWA0.

**EMERGENCY – FIRE AND EXPLOSION:**

Do not disturb burning dust and create dust clouds as oxygen will mix with the hot metal and may cause an explosion.

**ADDITIONAL INFORMATION – GENERAL**

**DANGEROUS GOODS CLASSIFICATION:**

An independent laboratory has tested all grades of Comalco aluminium atomised powder in accordance with the detailed test procedures laid down in the ADG Code. Comalco's atomised powder does NOT meet the criteria for the "dangerous when wet" classification, and accordingly these powders have not been classified as Dangerous Goods. Finely divided metal powder has a protective oxide layer, which reduces the materials reactive nature and moisture sensitivity.

### **OTHER INFORMATION:**

**IMPORTANT NOTE:**

The information contained in this Material Safety Data Sheet (MSDS) is believed by Australian Metal Powders Supplies (AMPS) to be accurate at date of issue, but is subject to change without notice, and no warranty, expressed or implied, is made as to its accuracy,

It is the responsibility of the user to ensure that this document is current. It is the responsibility of every person dealing with the product referred to herein to review the MSDS and assess the potential implications for any particular use of the material and the appropriate precautions which should be adopted, including making the MSDS available to all users. As a supplier cannot anticipate or control the conditions under which the products are used, stored, transported, handled or disposed of (its "use" which include "misuse") AMPS accepts no liability whatsoever for damage or injury, however caused, from use of our products or the information contained herein.

According, any person using this product undertakes such use voluntarily, assumes all risk associated with that use, and accepts responsibility for ensuring that appropriate safe practices are adopted. Any purchaser of this product from AMPS agrees to release and indemnify AMPS to the extent possible at law in respect of any liability which may arise directly or indirectly from its use of the product.

If clarification or further information is needed to ensure that an appropriate assessment of the product can be made, the user should contact AMPS.

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