



# CSR MATERIAL SAFETY DATA SHEET

## Alumina

### SECTION 1: IDENTIFICATION OF THE MATERIAL AND SUPPLIER

<b>Product Name:</b>	Alumina
<b>Other Names:</b>	Alumina Powder, Aluminium Oxide, Calcined Alumina, Smelter Grade Alumina, Metallurgical Grade Alumina
<b>Product Codes/Trade Names:</b>	
<b>Recommended Use:</b>	Feedstock in production of aluminium, manufacture of abrasives, refractories and ceramics
<b>Applicable In:</b>	Australia
<b>Supplier:</b>	Gove Aluminium Finance Limited (ABN 45 001 860 073)
<b>Address:</b>	Trinita 3, 39 Delhi Road, North Ryde NSW 2113, Australia
<b>Telephone:</b>	+61 2 9235 8144 (or 1800 807 668 (available in Australia only))
<b>Email Address:</b>	<a href="http://www.csr.com.au/Pages/Contact-Us.aspx">http://www.csr.com.au/Pages/Contact-Us.aspx</a>
<b>Web Site:</b>	<a href="http://www.csr.com.au">www.csr.com.au</a>
<b>Facsimile:</b>	+61 2 9235 8166
<b>Emergency Phone Number:</b>	000 Fire Brigade and Police (available in Australia only)
<b>Poisons Information Centre:</b>	13 11 26 (available in Australia only)

This Material Safety Data Sheet (MSDS) is issued by the Supplier in accordance with National standards and guidelines from Safe Work Australia (SWA – formerly ASCC/NOHSC). The information in it must not be altered, deleted or added to. The Supplier will not accept any responsibility for any changes made to its MSDS by any other person or organization. The Supplier will issue a new MSDS when there is a change in product specifications and/or Standards, Codes, Guidelines, or Regulations.

### SECTION 2: HAZARD IDENTIFICATION

**STATEMENT OF HAZARDOUS NATURE:** Classified as **Hazardous** according to the Approved Criteria For Classifying Hazardous Substances [NOHSC:1008] 3<sup>rd</sup> Edition.

**Alumina** is classified as **Non-Dangerous Goods** according to the Australian Code for the Transport of Dangerous Goods by Road and Rail.

Risk Phrases	Safety Phrases
<b>R20:</b> Harmful by inhalation.	<b>S22:</b> Do not breathe dust.
<b>R36/37/38:</b> Irritating to eyes, respiratory system and skin.	

### SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

CSR MSDS Reference: ALU-SDS-152

Date Issued: 8/12/2011



Chemical Name:	Synonyms:	Proportion:	CAS Number:
Aluminium oxide		98.4%	1344-28-1
Amorphous silica		<0.02%	7631-86-9

Trace amounts of other compounds may be present, including sodium oxide, ferric oxide and calcium oxide.

#### SECTION 4: FIRST AID MEASURES

<b>Swallowed:</b>	Rinse mouth and lips with water. Do not induce vomiting. If symptoms persist, seek medical attention.
<b>Eyes:</b>	Flush thoroughly with flowing water, while holding eyelids open, for 15 minutes to remove all traces. If symptoms such as irritation or redness persist, seek medical attention.
<b>Skin:</b>	Remove heavily contaminated clothing. Wash off skin thoroughly with water. Use a mild soap if available. Shower if necessary. Seek medical attention for persistent redness, irritation or burning of the skin.
<b>Inhaled:</b>	Remove to fresh air, away from dusty area. If symptoms persist, seek medical attention.
<b>Advice to Doctor:</b>	Treat symptomatically.

#### SECTION 5: FIRE FIGHTING MEASURES

<b>Flammability:</b>	This product is non flammable. In bulk, dry powder can build up a static electric charge, when subject to the friction of conveying, mixing or other movement.
<b>Suitable extinguishing media:</b>	Use carbon dioxide, foam, dry chemical or water spray to extinguish, as required for fire in surrounding materials.
<b>Hazards from combustion products:</b>	None
<b>Special protective precautions and equipment for fire fighters:</b>	As required by fire in surrounding materials and fire conditions.
<b>HAZCHEM Code:</b>	None

#### SECTION 6: ACCIDENTAL RELEASE MEASURES

<b>Containment Procedure:</b>	Collect for re-use or disposal.
<b>Clean Up Procedure:</b>	Avoid generating dust and use Personal Protection, as described in Section 8.

#### SECTION 7: HANDLING AND STORAGE

<b>Handling:</b>	Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Manual handling should be in accordance with Manual Handling Regulations and Codes.
<b>Storage:</b>	Store in dry conditions, away from chlorine trifluoride, ethylene oxide, and highly alkaline materials. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use.
<b>Incompatibilities:</b>	Incompatible with chlorine trifluoride (reacts violently, producing flame) and ethylene oxide (polymerises violently).

## SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

<b>National Exposure Standards:</b>	<b>National Occupational Exposure Standard (NES), Safe Work Australia (formerly ASCC/NOHSC)</b> Aluminium Oxide: TWA - 10 mg/m <sup>3</sup> Silica (amorphous): TWA - 2 mg/m <sup>3</sup> Total dust (of any type, or particle size): TWA - 10 mg/m <sup>3</sup>
<b>Notes on Exposure Standards:</b>	All occupational exposures to atmospheric contaminants should be kept to as low a level as is workable (practicable) and in all cases to below the National Standard.  TWA (Time Weighted Average): the time-weighted average airborne concentration over an eight-hour working day, for a five-day working week over an entire working life. According to current knowledge this concentration should neither impair the health of, nor cause undue discomfort to, nearly all workers.
<b>Biological Limit Values:</b>	No biological limit allocated.
<b>ENGINEERING CONTROLS</b>	
<input type="checkbox"/> <b>Ventilation:</b>	Open air work or use of natural ventilation (opening of doors and windows in buildings) generally provides adequate ventilation. Local mechanical ventilation or extraction may be required in areas where dust standards cannot be achieved.
<input type="checkbox"/> <b>Special Consideration for Repair &amp;/or Maintenance of Contaminated Equipment:</b>	Recommendations on Exposure Control and Personal Protection should be followed.
<b>PERSONAL PROTECTION</b>	
<input type="checkbox"/> <b>Personal Hygiene:</b>	Wash hands before eating, drinking, using the toilet, or smoking. Wash work clothes regularly.
<input type="checkbox"/> <b>Skin Protection:</b>	Excessive or repeated skin contact should be avoided by wearing long sleeved shirts and long trousers, a cap or hat, and gloves (standard duty leather or equivalent AS 2161).
<input type="checkbox"/> <b>Eye Protection:</b>	Ventilated non-fogging goggles (dust resistant AS/NZS 1336) should be worn when working in a dusty environment.
<input type="checkbox"/> <b>Respiratory Protection:</b>	None required if engineering and handling controls are adequate. A suitable P1 or P2 particulate respirator chosen and used in accordance with AS/NZS 1715 and AS/NZS 1716 may be appropriate in dusty conditions.
<input type="checkbox"/> <b>Smoking &amp; Other Dusts:</b>	Inhalation of airborne particles from other sources, including those from cigarette smoke, may increase the risk of lung disease. CSR recommends that all storage and work areas should be non-smoking zones, and other airborne contaminants be kept to a minimum.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	White sandy crystalline powder
<b>Odour:</b>	None
<b>pH, at stated concentration:</b>	9.5-10.5
<b>Vapour Pressure:</b>	Not determined

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<b>Vapour Density (air = 1):</b>	Not determined
<b>Boiling Point/Range (°C):</b>	2980°C
<b>Melting Point (°C):</b>	>2000°C
<b>Solubility in water:</b>	Insoluble
<b>Specific Gravity (H<sub>2</sub>O = 1):</b>	3.53
<b>FLAMMABLE MATERIALS</b>	
<input type="checkbox"/> <b>Flash Point:</b>	Not applicable
<input type="checkbox"/> <b>Flammable (Explosive) Limits:</b>	Not applicable
<input type="checkbox"/> <b>Autoignition Temperature:</b>	Not applicable
<b>ADDITIONAL PROPERTIES</b>	
<input type="checkbox"/> <b>% Volatiles:</b>	0%
<input type="checkbox"/> <b>Volatile Organic Compounds (VOC) Content:</b> (as specified by the Green Building Council of Australia)	0%

## SECTION 10: STABILITY AND REACTIVITY

<b>Chemical Stability:</b>	Stable. Dissolves slowly in alkaline solutions.
<b>Incompatible Materials:</b>	Incompatible with strong acids, strong bases, halocarbons, OF <sub>2</sub> , sodium nitrate, vinyl acetate. Incompatible with chlorine trifluoride (reacts violently, producing flame) and ethylene oxide (polymerises violently).
<b>Conditions to avoid:</b>	Dust generation
<b>Hazardous Decomposition Products:</b>	None
<b>Hazardous Reactions:</b>	Hazardous polymerization occurs in presence of ethylene oxide.

## SECTION 11: TOXICOLOGICAL INFORMATION

**Toxicology data:** Not available on this product, but anticipated to be very low with LD50 >5000 mg/kg.

Health effects information is based on reported effects in use from overseas and Australian reports.

### Health Effects: Acute (short term)

<b>Swallowed:</b>	Ingestion of small amounts may cause mild irritation of mouth and throat. Swallowing larger amounts may result in mild abdominal discomfort.
<b>Eyes:</b>	Irritating to the eyes causing watering and redness.
<b>Skin:</b>	May cause mild irritation, and drying to the skin due to its physical characteristics.
<b>Inhaled:</b>	Dust is mildly irritating to the nose, throat and respiratory tract and may cause coughing and sneezing. Pre-existing upper respiratory and lung diseases including asthma and bronchitis may be aggravated.

### Health Effects: Chronic (long term)

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<b>Eyes:</b>	Dust may cause irritation and inflammation of the eyes and aggravate pre-existing eye conditions.
<b>Skin:</b>	Repeated heavy contact with the dust may cause drying of the skin and can result in skin rash (dermatitis) typically affecting the hands. Over time this may become chronic and can also become infected.
<b>Inhaled:</b>	Repeated exposure to high levels of dust (above NES) may result in increased nasal and respiratory secretions and coughing. Inflammation of lining tissue of the respiratory system may follow repeated exposure to high levels of dust with increased risk of lung disease.

## SECTION 12: ECOLOGICAL INFORMATION

<b>Eco-toxicity:</b>	Product is non-toxic to aquatic and terrestrial organisms.
<b>Persistence and Degradability:</b>	Product is persistent and would have a low degradability.
<b>Mobility:</b>	A low mobility would be expected in a landfill situation.

## SECTION 13: DISPOSAL CONSIDERATIONS

<b>Disposal methods and containers:</b>	Alumina can be treated as a common waste for disposal or dumped into a landfill site in accordance with local authority guidelines. Measures should be taken to prevent dust generation during disposal and exposure and personal precautions should be observed (see Section 8).
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## SECTION 14: TRANSPORT INFORMATION

<b>Proper Shipping Name:</b>	None allocated
<b>UN number:</b>	None allocated
<b>DG Class:</b>	None allocated
<b>Subsidiary Risk 1:</b>	None allocated
<b>Packaging Group:</b>	None allocated
<b>HAZCHEM code:</b>	None allocated
<b>Marine Pollutant:</b>	No
<b>Special Precautions for User:</b>	None

## SECTION 15: REGULATORY INFORMATION

<b>Poisons Schedule:</b>	Not scheduled
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## SECTION 16: OTHER INFORMATION

**For further information on this product, please contact:**

Gove Aluminium Finance Limited (ABN 45 001 860 073 ), Trinit 3, 39 Delhi Road, North Ryde, NSW 2113, Australia.

<b>Phone:</b>	+61 2 9235 8144 or 1800 807 668 (available in Australia only)
<b>Fax:</b>	+61 2 9235 8166

## ADDITIONAL INFORMATION

### Australian Standards References:

AS/NZS 1336	Recommended Practices for Occupational Eye Protection
AS/NZS 1715	Selection, Use and Maintenance of Respiratory Protective Devices
AS/NZS 1716	Respiratory Protective Devices
AS 2161	Industrial Safety Gloves and Mittens (excluding electrical and medical gloves)

### Other References:

NOHSC:2011(2003)	National Code of Practice for the Preparation of Material Safety Data Sheets 2 <sup>nd</sup> Edition, April 2003, National Occupational Health and Safety Commission.
NOHSC:10005(1999)	List Of Designated Hazardous Substances, April 1999, National Occupational Health and Safety Commission, Sydney.
NOHSC:2007(1994)	National Code of Practice for the Control of Workplace Hazardous Substances (Australian States have similar Codes of Practice in each State).
NOHSC:2012(1994)	National Code of Practice for the Labelling of Workplace Substances, March 1994, Australian Government Publishing Service, Canberra.
NES	National Occupational Exposure Standards for Workplace Atmospheric Contaminants (NES) Australian Safety and Compensation Council, ASCC (formerly NOHSC) 1995 as amended.
ADG Code	Australian Dangerous Goods Code 7 <sup>th</sup> Edition.

## AUTHORISATION

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END OF MSDS