

Material Safety Data Sheet

Autoclaved Aerated Concrete

SECTION 1 IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product (material) name	Autoclaved Aerated Concrete		
Other names	ECOL-MEGA PANEL or AAC or LITEW8		
Recommended use	Reinforced AAC Wall Cladding Panels Reinforced AAC Floor panels Reinforced Privacy Walls Reinforced AAC Lintels, Barriers, Cladding Accessories Unreinforced AAC Wall Blocks		
Supplier Name	One-Stop Building and Hardware/ LITEW8 Pty Ltd		
Address	121 Regency Road, Croydon Park SA 5008		
Telephone No	+61 8 83408477	+61 8 83408577	
Emergency Phone No	Poisons Information Centre (Australia)	13 11 26	
Fax	+618 83407271		
Email	gina@osbh.com.au		

SECTION 2 HAZARDS IDENTIFICATION

Hazard classification	Hazardous		
Risk phase(s)	R21/22	Harmful in contact with skin and if swallowed.	
	R48/20	Harmful: danger of serious damage to health by prolonged exposure through inhalation	
Safety phase(s)	S22	Do not breathe dust	
	S24	Avoid contact with skin	
	S25	Avoid contact with eyes	
Reference: APPROVED CRITERIA FOR CLASSIFYING HAZARDOUS SUBSTANCES [NOHSC:1008(2004)] 3rd Edition October 2004			

SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

AAC consists of a combination of lime and portland cement, with finely divided quartz sand and other filler materials. Aluminium powder is introduced, and reacts with calcium hydroxide and water to form hydrogen. The mixture is cured at high pressure and temperature to form calcium silica hydrate; to provide a relatively strong, light-weight cellular structure, incorporating small uniformly distributed bubbles. Steel reinforcement is embedded in the AAC material.

Chemical Name	Proportions	CAS Number
Tobermorite (Calcium silicate hydrate), Ca_2SiO_4	60% – 90%	1344-95-2
Quartz sand (silicon dioxide), SiO_2	3% – 35%	14808-60-7
Aluminium oxide, Al_2O_3	Under 3%	1344-28-1
Ferric oxide, Fe_2O_3	Under 3%	1309-37-1
Magnesium oxide, MgO	Under 3%	1309-48-4

Other materials used in the manufacture, that may be present in the finished AAC in small quantities

Hydrated lime Ca(OH)_2	1305-62-0
Portland cement (Cement hydration products C-S-H)	65997-15-1
Residual fly ash	68131-74-8
Aluminium powder	7429-90-5

SECTION 4 FIRST AID MEASURES

Problem	Required Treatment
Dust inhaled into lungs	Place patient in fresh air, loosen tight clothing. Seek medical assistance if breathing problems persists.
Dust irritates skin	Remove clothing for the affected area, wash with clean water (preferably using mild soap). Seek medical assistance if irritation persists.
Dust in eyes	Hold eyes open and flush with clean water until all dust is removed. Seek medical assistance if irritation persists.
Dust swallowed	Wash out the mouth with clean water, and wash all dust from the skin. Do not cause vomiting. Seek medical assistance if illness persists.
All cases	Advise doctor.

SECTION 5 FIRE FIGHTING MEASURES

Flammability	AAC is not flammable (will not burn)
Suitable extinguishing media	Use an extinguisher suitable for adjacent flammable materials.
Hazards from combustion products	Nil
Special protective precautions and equipment for fire fighters	Be aware that AAC panels may fall from the structure if fire melts the connections.
Hazchem Code	Nil

SECTION 6 ACCIDENTAL RELEASE MEASURES

Emergency procedures Not Applicable (solid material)

Methods and materials for containment and clean up Not Applicable (solid material)

SECTION 7 HANDLING AND STORAGE

Safe Handling AAC panels are heavy, and could cause crushing injuries. Adhere to proper safety when using cranes and lifting devices.

Safe Storage Store AAC panels off the ground, in areas that are not contaminated by corrosive materials, acid, paints and the like. Ensure that protective coating is properly applied to the exposed ends of steel reinforcement.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

National exposure standards Reference: *National standards, codes of practice and related guidance - Guidance Note on the Interpretation of Exposure Standards for Atmospheric Contaminants in the Occupational Environment NOHSC 3008(1995) 3rd Edition*

Silica (both the crystalline and non-crystalline (amorphous) forms of silica)
14.17 An Expert Working Group on Crystalline Silica has been established under the auspices of the Standards Development Standing Committee (SDSC) to review the exposure standards for different forms of crystalline silica. At present, no values have been recommended by the SDSC and exposure should be kept as low as practicable.

Biological limit values Not Applicable

Engineering controls Keep workspace well-ventilated when cutting or drilling AAC panels; ensuring that there is no build-up of dust in the working environment. Use extraction fans if necessary. Where possible, work in the open, rather than indoors.

Personal protective equipment

Eyes:
Wear tight-fitting non-fogging goggles, to protect eyes when cutting or drilling AAC panels or blocks. These must comply with AS/NZS 1336 *Recommended practices for occupational eye protection*, and AS/NZS 1337 *Eye protectors for industrial applications*.

Breathing:
If working in well-ventilated open spaces, with low quantities of dust generation, the use of a personal respirator is not necessary. If these conditions cannot be achieved, a respirator should be used. In case of high dust concentration, use cartridge respirators. Respirators must comply with:
AS/NZS 1715 *Selection, use and maintenance of respiratory protective devices* and AS/NZS 1716 *Respiratory protective devices*.

Skin:
Wear gloves, loose-fitting long-sleeve shirts, long trousers and a hat. These should be washed regularly. Ensure that the dust does not settle on exposed skin. Shower regularly. Wash hands before eating.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance (colour, physical form, shape)	Light grey/off-white panels and blocks
Odour	Nil
pH	8 to 11
Vapour pressure	Not applicable
Vapour density	Not applicable
Boiling point/range	Not applicable
Freezing/melting point	Not applicable
Solubility (specify solvent)	Not applicable
Specific gravity or density	0.4 to 0.8 (400kg/m ³ to 800 kg/m ³)
Information for flammable materials, including:	
Flash point and method of detecting flash point	Not applicable
Upper and lower flammable (explosive) limits in air	Not applicable
Ignition temperature	Not applicable
Additional information	
Specific heat value	Not applicable
Particle size	Not applicable
Volatile organic compounds (VOC) content	Not applicable
Evaporation rate	Not applicable
Viscosity	Not applicable
Percent volatile	Not applicable
Octanol / water partition coefficient	Not applicable
Saturated vapour concentration	Not applicable
Additional characteristics not noted above	
Flame propagation or burning rate of solid materials	Not applicable
Properties that may initiate or uniquely contribute to a fire	Not applicable
Potential for dust explosion	Not flammable
Reactions that release flammable gases or vapours	Not flammable
Fast or intensely burning characteristics	Not flammable
Non-flammables contributing unusual fire hazards	Not flammable
Release of invisible flammable vapours and gases	Not flammable
Decomposition temperature	Not flammable

SECTION 10 STABILITY AND REACTIVITY

Chemical stability	Stable
Conditions to avoid	Exposure to acid salts such as chlorides or sulphates, which can attack the AAC. Alkaline conditions generally do not affect AAC. Avoid abrasive actions that produce dust.
Incompatible materials	Acid salts such as chlorides or sulphates
Hazardous decomposition	Nil

SECTION 11 TOXICOLOGICAL INFORMATION

Health Effects from Exposure

Dust inhaled into lungs	AAC panels and blocks contain crystalline silica, which may form dust that can be inhaled, and small amounts of hexavalent chromium which is carcinogenic to humans. The most likely problem is the inhalation of the dust, manifesting in coughing and excreting mucus from the nose. It may also aggravate health disorders caused by tobacco smoking. Place the patient in fresh air, loosen tight clothing. Seek medical assistance if breathing problems persists. If inhaled in high concentrations and/or extended durations, it could result in long-term lung disease, including silicosis, or scleroderma. In such cases, medical attention must be sought.
Dust on skin	Dust from AAC panels and blocks irritates skin. Remove clothing from the affected area, wash with clean water (preferably using mild soap). Seek medical assistance if irritation persists.
Dust in eyes	Hold eyes open and flush with clean water until all dust is removed. Seek medical assistance if irritation persists.
Dust swallowed	Wash out the mouth with clean water, and wash all dust from the skin. Do not cause vomiting. Seek medical assistance if illness persists.
All cases	Seek medical assistance

SECTION 12 ECOLOGICAL INFORMATION

Ecotoxicity	AAC panels and blocks are mildly alkaline, with pH in the range 8 to 11. Non-toxic to living organisms.
Persistence and degradability	AAC panels and blocks have low degradability.
Mobility	Low mobility in landfill.
Environmental fate (exposure)	Not applicable
Bioaccumulative potential	Not applicable

SECTION 13 DISPOSAL CONSIDERATIONS

Disposal methods and containers	AAC panels and blocks, including broken or cut products, may be safely dumped and disposed of in landfill.
Special precautions for landfill or incineration	Take care of potential crushing injuries due to large items falling from trucks. Take precautions against dust generation, as described above.

SECTION 14 TRANSPORT INFORMATION

UN Number Not applicable

UN Proper Shipping Name Not applicable

Class and subsidiary risk Not applicable

Packing Group Not applicable

Special precautions for user Although lighter than conventional precast concrete, AAC panels and blocks still have significant weight, and can cause crushing injury if dropped. Ensure that all loads are securely fixed to transport vehicles, and lifted safely in accordance with the relevant regulations.

Hazchem Code Not applicable

SECTION 15 REGULATORY INFORMATION

The regulatory status of a material Not applicable. See previous sections on risks of dust inhalation.

Additional national and/or international regulatory information APPROVED CRITERIA FOR CLASSIFYING HAZARDOUS SUBSTANCES [NOHSC:1008(2004)] 3rd Edition October 2004, Australian Government, National Occupational Health and Safety Commission

National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC:2011(2003)], Australian Government, National Occupational Health and Safety Commission

SECTION 16 OTHER INFORMATION

Date of preparation 30th November 2009

Date of last revision 30th November 2009

Abbreviations, acronyms AAC means Autoclaved Aerated Concrete, in the form of either steel reinforced panels or unreinforced blocks.

Literature references Reference: Aroni, S., de Groot, G.J., Robinson, M.J., Svanholm, G., & Wittman, F.H. (Editors), "RILEM Recommended Practice – Autoclaved Aerated Concrete – Properties, Testing and Design"

Australian Standards listed in the relevant sections

Sources for data Product supplier

This MSDS has been prepared by the product supplier, and relies on confirmation by the manufacturer of the information herein. It is based on information, which, to the best of our knowledge is accurate at the time of preparation. No responsibility can be accepted for errors and omissions, changes to manufacture, or failure of the manufacturer to adhere to the manufacturing specifications. No responsibility can be accepted for failure to use the product in a manner recommended by the supplier. Builders, tradesmen and other product users must independently assess the risks associated with the product use, and formulate occupational health and safety procedures on that basis. The use of the product is beyond the control of the authors of this MSDS, who cannot accept responsibility for any loss or damage associated with this MSDS.

End of MSDS