

MATERIAL SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name: Aluminium Sulphate

Recommended Use: Water purification, pH adjuster.

Supplier: Midland Chemicals
ABN: 91 622 018 986

Street Address: 18 Elliott Street
Midvale
Western Australia

Telephone Number: +61 08 9274 1992

Facsimile: +61 08 9250 1710

Emergency Telephone: **1 800 033 111 (ALL HOURS)**

2. HAZARDS IDENTIFICATION

Road and Rail; Non Dangerous Goods according to the criteria of the Australian Dangerous Goods Code (ADG Code).

Globally Harmonised System

Hazard Classification

Hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)

Hazard Categories

Serious eye damage/irritation – category 2A

Pictogram



Signal Word

Warning

Hazard Statements

H319 Causes serious eye irritation

Precautionary Statement Prevention

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P280 Wear eye protection/face protection.

Response

P305 + P351 + P338 + P337 + P313 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Disposal

P501 Dispose of contents/container in accordance with local / regional / national / international regulations.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS Number	Proportion
Aluminium Sulphate	17927-65-0	<=100%

4. FIRST AID MEASURES

For advice, contact a Poisons Information Centre (e.g. phone Australia 131 126; New Zealand 0800 764 766) or a doctor at once.

Inhalation:

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Apply resuscitation if victim is not breathing. Administer oxygen if breathing is difficult. Call a Poison Centre or doctor/physician if experiencing respiratory symptoms, or if you feel unwell.

Skin Contact:

Skin contact: Remove material from skin immediately. Flush skin with running water for at least 15 minutes and/or wash with plenty of soap and water. Take off contaminated clothing and wash before reuse. If skin irritation occurs, get medical advice/attention.

Eye Contact:

Eye contact: Immediately flush eyes with running water for several minutes, holding eyelids open and occasionally lifting the upper and lower lids. Remove contact lenses if present and easy to do. Continue rinsing for at least 15 minutes. If eye irritation persists, get medical advice/attention.

Ingestion:

If swallowed: Rinse mouth, then drink 200 - 300 ml of water. Do NOT induce vomiting. Call a Poison Centre or doctor/physician if you feel unwell. Never give anything by mouth to an unconscious person.

Medical attention and special treatment:

Treat symptomatically. Ensure that attending medical personnel are aware of the identity and nature of the product(s) involved, and take precautions to protect them.

5. FIRE FIGHTING MEASURES

General Measure

If safe to do so, move undamaged containers from fire area. Cool containers with flooding quantities of water until well after fire is out. Avoid getting water inside containers.

Flammability Conditions

Non-combustible. Material does not burn.

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Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use dry chemical, Carbon dioxide, foam or water spray - Do NOT use water jets.

Fire and Explosion Hazard

No information available.

Hazardous products of Combustion

Decomposes on heating, emitting toxic fumes including: Sulphur oxides and oxides of Aluminium.

Special Fire Fighting Instructions

Prevent fire extinguishing water from contaminating surface water or the ground water system.

Personal Protective Equipment

Fire fighters to wear self-contained breathing apparatus and suitable protective clothing if risk of exposure to products of decomposition.

Flash Point

No information available.

Lower Explosion limit

No information available.

Upper Explosion limit

No information available.

Auto ignition Temperature

No information available.

Hazchem Code

No information available.

6. ACCIDENTAL RELEASE MEASURES

General response procedure

Ensure adequate ventilation - Ventilate enclosed spaces before entering. Do not touch or walk through spilled material. Wear protective equipment to avoid eye and skin contact. Avoid breathing dust.

Clean up procedure

Sweep up, but avoid generating dust and airborne material. Collect and seal in properly labelled containers or drums for disposal. Take up dry - Avoid getting water inside containers.

Containment

Stop leak if safe to do so. Contain - Prevent entry into waterways, drains or confined areas.

Decontamination

Cleaned up material may be hazardous waste. Do NOT flush to surface water or sanitary sewer system.

Environmental Precautionary Measures

Prevent entry into waterways and drains.

Evacuation Criteria

Spill or leak area should be isolated immediately. Clear area of all unprotected personnel. Keep unauthorised personnel away.

Personnel Precautionary measures

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Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

7. HANDLING AND STORAGE

This material must be stored, maintained and used in accordance with the relevant regulations.

Conditions for safe storage:

Store under cover in a cool, dry and well-ventilated place. Keep containers tightly closed when not in use – Check regularly for spills. Avoid exposure to air/moisture. Store away from incompatible materials (water, strong bases). Keep in the original container.

Precautions for safe handling:

Eyewash fountains and safety showers should be provided within the immediate work area for emergency use. Handle in accordance with good industrial hygiene and safety practice. Ensure adequate ventilation. Avoid breathing dust. Avoid contact with eyes and skin. Wear eye protection/face protection. Avoid handling which leads to dust formation.

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

General

There is no exposure standard assigned for this specific material.

COMPONENT: Aluminium, soluble salts (CAS No. 7429-90-5):

- Safe Work Australia Exposure Standard: TWA = 2 mg/m³ (as Al).

- New Zealand WES: TWA = 5 mg/m³ (as Al).

Exposure Limits

No Data Available

Biological Limits

No information available.

Engineering Measures

Ensure ventilation is adequate and that air concentrations are controlled below quoted Workplace Exposure Standards. If in the handling and application of this material, safe exposure levels could be exceeded, the use of engineering controls such as local exhaust ventilation must be considered and the results documented. Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

Personal Protective Equipment

Respiratory protection: If determined by a risk assessment an inhalation risk exists, wear a dust mask/respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716. Recommended filter type: P1 filter for solid particles. Eye/face protection: Wear appropriate eye protection to avoid eye contact. Recommended: Chemical goggles. Hand protection: Wear impervious gloves.

Recommended (Full/splash contact): Nitrile rubber (Glove thickness: 0.11mm; Break through time: >480 min). Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substance handled. Recommended: Overalls; Safety shoes.

Work Hygiene Practices

Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use.

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9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Solid crystals

Colour: White

Solubility: Soluble in water - 87 g/100 ml water 27°C

Specific Gravity: Not available

Relative Vapour Density (air=1): Not available

Vapour Pressure (20 °C): 0.0312 Pa (@ 25 °C)

Flash Point (°C): Not flammable

Flammability Limits (%): Not flammable

Auto Ignition Temperature (°C): Not flammable

Boiling Point/Melting Point (°C): >160°C

Decomposition Temperature: 770 °C

Bulk Density: 920 kg/m³ (Powder)

pH: >3 in 1% Solution

Additional Characteristics: Hygroscopic – Absorbs moisture/water from surrounding air

Reactions that release gases or vapours: Decomposes on heating, emitting toxic fumes including: Sulphur oxides and oxides of Aluminium.

10. STABILITY AND REACTIVITY

Chemical stability: Product is stable under normal conditions of use, storage and temperature.

Conditions to avoid: Avoid dust generation. Avoid exposure to water/moisture/air.

Incompatible materials: Incompatible with water and strong bases. May react with some metals in the presence of moisture.

Hazardous decomposition products: Decomposes on heating, emitting toxic fumes including: Sulphur oxides and oxides of Aluminium. Reacts with moisture forming Sulphuric acid.

Hazardous polymerisation: Will not occur.

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11. TOXICOLOGICAL INFORMATION

Ingestion

Swallowing may result in nausea, vomiting, diarrhoea, and gastrointestinal irritation.

Eye contact

Causes serious eye irritation.

Skin contact

May cause skin irritation.

Inhalation

Breathing in dust may result in coughing, respiratory irritation.

Toxicity

Acute toxicity: Low toxicity (LD50: >2,000 mg/kg bw), based on rat and mouse studies [OECD Test Guideline 401].

No mortalities were found in studies involving dermal or inhalation exposure (of humans or animals) to various forms of aluminium.

Skin corrosion/irritation: May cause skin irritation. Although sulphuric acid, aluminium salt (3:2) produced some skin irritation in most of the studies performed in accordance with OECD TG 404, the effects were not sufficient to warrant a hazard classification.

Eye damage/irritation: Causes serious eye irritation - Lack of evidence of irreversible effects.

Sulphuric acid, aluminium salt (3:2) and its hexa-, hepta- and octahydrates are classified as eye irritants based on available data and read-across. Three studies conducted in accordance with OECD TG 405 reported eye irritation. Two of the studies found conjunctival redness and swelling which was not reversible during the test periods (three and seven days). The third test reported conjunctivitis and purulent ophthalmitis which were reversible during the 21-day study. Respiratory/skin sensitisation:

The available data do not provide any evidence of skin sensitisation. Germ cell mutagenicity: The weight of evidence does not support classification for genotoxicity. Carcinogenicity: The available data do not support classification as a carcinogen.

Reproductive toxicity: No information available on the product itself. However, neurodevelopmental effects have been observed in rats and mice at doses of 103 – 330 mg Al/kg bw/day - This is equivalent to 652 - 2,090 mg sulphuric acid, aluminium salt (3:2).

STOT - single exposure: No information available.

STOT - repeated exposure: No information available on the product itself. However, results from human and animal studies investigating the toxicity of soluble and insoluble forms of aluminium suggest that the respiratory tract, particularly the lung, is a sensitive target of airborne aluminium toxicity. The lung effects observed in humans and animals are suggestive of dust overload. In addition, neurotoxicity is a well-documented effect of aluminium in orally exposed mice and rats. Although the neurotoxicity of aluminium has not been established in humans with normal renal function, the available data establish that the human nervous system is susceptible to aluminium toxicity.

Aspiration toxicity: No information available.

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12. ECOLOGICAL INFORMATION

Ecotoxicity Toxicity to fish: - LC50, Pimephales promelas (fathead minnow): 36.1 mg/l (96 h).

Persistence and Degradability
No information available.

Mobility
The product will likely be mobile in the environment due to its water solubility. Highly mobile in soils.

Environmental Fate
Prevent entry into waterways and drains.

13. DISPOSAL CONSIDERATIONS

Disposal methods: Dispose of contents/container in accordance with local/regional/national regulations. Do NOT flush to surface water or sanitary sewer system.

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14. TRANSPORT INFORMATION

Road and Rail Transport

classified as Non Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by Road and Rail; NON DANGEROUS GOODS.

UN No: N/A

Class-Primary: N/A

Packing Group: N/A

Proper Shipping Name: Aluminium Sulphate

Hazchem Code: N/A

Marine Transport

classified as Non- Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea; Non DANGEROUS GOODS.

UN No: N/A

Class-Primary: N/A

Packing Group: N/A

Proper Shipping Name: Aluminium Sulphate

Hazchem Code: N/A

Air Transport

classified as Non-Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air; DANGEROUS GOODS.

UN No: N/A

Class-Primary: N/A

Packing Group: N/A

Proper Shipping Name: Aluminium Sulphate

Hazchem Code: N/A

15. REGULATORY INFORMATION

Globally Harmonised System

Hazard Classification

Hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS).

Hazard Categories

Serious Eye Damage/Irritation - Category 2A

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Precautionary Statement**Prevention**

P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response

P305 + P351 + P338 + P337 + P313 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Disposal

P501 Dispose of contents/container in accordance with local / regional / national / international regulations.

16. OTHER INFORMATION

This material safety data sheet has been prepared by Midland Chemicals

This MSDS summarises to our best knowledge at the date of issue, the chemical health and safety hazards of the material and general guidance on how to safely handle the material in the workplace. No liability is accepted whether direct or indirect from its application since the conditions of final use are outside Midland Chemicals control. The end user is obliged to conform to relevant government regulations and/or patent laws applicable in their respective States of Countries.