



HARDMAN CHEMICALS  
 11 BODEN ROAD, SEVEN HILLS, NSW 2147  
 PO BOX 122, SEVEN HILLS, NSW 1730  
 TEL: +612 9624 1333 FAX: +612 9624 5851  
 EMAIL: info@hardman.com.au

### MATERIAL SAFETY DATA SHEET

Revision No: 0

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#### IDENTIFICATION OF MATERIAL AND SUPPLIER

##### PRODUCT NAME: ALPHOS

OTHER NAMES: Basic aluminium chloride, concentrated aqueous solution (also polyaluminium chloride, 30% basic).

Recommended uses: waste water treatment, phosphate removal, some miscellaneous uses.

##### SUPPLIER: HARDMAN AUSTRALIA

##### EMERGENCY CONTACT INFORMATION:

|           |   |
|-----------|---|
| Telephone | 61 2 9624 1333 (all hours — message on after hours)<br>Emergency after-hours contact: Mr. John Bradley (0418 974 332) |
| Facsimile | 61 2 9624 5851  |
| Email     | <a href="mailto:info@hardman.com.au">info@hardman.com.au</a>  |
| Address   | 11 Boden Road, Seven Hills, NSW, 2147, AUSTRALIA<br>(P.O. Box 122, Seven Hills)                                       |

#### HAZARDS IDENTIFICATION

**Classified as a Hazardous Substance according to the criteria of Office of the Australian Safety and Compensation Council (previously NOHSC, the National Occupational Health and Safety Council). Classified as Dangerous Goods.**

**Risk phrases:** R36/38: Irritating to eyes and skin.

**Safety phrases:** S28; After contact with skin, wash immediately with plenty of soap-suds, S24; Avoid contact with skin, S25; Avoid contact with eyes, S29; Do not empty into drains, S36; Wear suitable protective clothing, S37; Wear suitable gloves, S39; Wear eye/face protection.

#### COMPOSITION / INFORMATION ON INGREDIENTS

Reference in AICS: YES

| <i>Name</i>            | <i>CAS Number</i> | <i>Proportion</i> |
|------------------------|-------------------|-------------------|
| Polyaluminium Chloride | 1327-41-9         | 40 to 60%         |
| Water                  | 7732-18-5         | To 100%           |

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## FIRST AID MEASURES

|                         |  |
|-------------------------|--|
| Eyes (contact):         | Flush with water for 15 minutes. Seek medical attention.   |
| Skin (contact):         | Remove contaminated clothing. Flush affected areas with soap and water.  |
| Inhalation (breathing): | No vapour, can only be inhaled as mist or aerosol and any dose will bring on unpleasant reaction, dry mouth taste. Remove from source of mist, allow patient to stabilise breathing in fresh air. If problem or symptoms persist seek medical attention. |
| Ingestion (swallowing): | Do not induce vomiting, give large amounts of water to drink. Seek immediate medical attention.  |

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## FIRE FIGHTING MEASURES

|  |  |
|--|--|
| Flash point (°C):                      | Material is non-flammable and non-combustible.   |
| Auto ignition point (°C):              | Not applicable.  |
| Explosion Limits In Air (% by volume): |  |
| Lower:                                 | Not applicable.  |
| Upper:                                 | Not applicable.  |
| Extinguishing media:                   | Compatible with water, foam, CO2 and dry chemical. Fires can be attacked with extinguishers to suit local flammable/combustible materials. |
| Special Procedures:                    | None.  |
| Unusual hazards:                       | None known.  |
| Conditions to avoid:                   | None known.  |
| Materials to avoid:                    | Corrosive to most metals. Produces a strong explosion on contact with Potassium.   |
| Decomposition products:                | Severe overheating to dryness may then produce hydrogen chloride Gas.  |
| Hazardous polymerisation:              | Will not occur.  |

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## ACCIDENTAL RELEASE MEASURES

**Steps to be taken in case material is released or spilled:** Prevent drain or sewer contamination with absorbent such as sand or sawdust etc. Collect for disposal using plastic containers as this material is corrosive and will attack metal containers. Hose final trace residues to drain. Spillage into waterways will result in some lowering of the pH and the formation of aluminium hydroxide, which has a very low toxicity.

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## HANDLING & STORAGE

Do not store in metal drums. Store in labelled, corrosion-resistant containers that are approved for the storage of dangerous goods. Store in a cool place away from strongly alkaline materials.

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## EXPOSURE CONTROLS/PERSONAL PROTECTION

### EFFECTS OF EXPOSURE

|                              |   |
|------------------------------|---|
| Eyes (Contact):              | Severe irritant, possible corneal injury possible due to low pH and corrosive nature. |
| Skin (Contact & absorption): | Slight irritant, may cause burns.   |
| Inhalation (breathing):      | Mist may cause irritation to upper respiratory tract, irritating to mucous membranes. |
| Ingestion (swallowing):      | Possible nausea, may cause burns to mouth and throat.                                 |

**SPECIAL PROTECTION INFORMATION**

|                             |  |
|-----------------------------|--|
| Respiratory protection:     | To protect against mist use suitable cartridge or RBA.   |
| Ventilation:                | Local exhaust recommended.   |
| Protective gloves:          | PVC or rubber.   |
| Eye protection:             | Eye goggles or superior protection must be worn.   |
| Other protective equipment: | Rubber or PVC gum-boots are recommended.   |
| Safety profile:             | Moderately toxic by ingestion. An experimental teratogen.<br>Corrosive and irritating to tissue. |

**PHYSICAL AND CHEMICAL PROPERTIES**

|                          |   |
|--------------------------|---|
| Appearance & odour:      | Almost colourless to light green solution, no apparent odour. |
| Molecular weight:        | 233.5   |
| Boiling point (°C):      | >100 (water boiling off)                                      |
| Melting point (°C):      | Not relevant  |
| Specific Gravity:        | 1.26 - 1.29 at 25°C (H <sub>2</sub> O = 1)                    |
| pH:                      | 1.4 - 1.7 in undiluted form at 25°C (7 = neutral)             |
| Vapour pressure (kPa):   | Not applicable  |
| Relative vapour density: | Not applicable (air = 1)                                      |
| Volatile by weight (%):  | 40 - 60%  |
| Solubility in water:     | 100% fully miscible   |
| Evaporation rate:        | Not available (n-butyl acetate = 100)                         |

**STABILITY AND REACTIVITY**

|                           |   |
|---------------------------|---|
| Reactivity:               | This product is unlikely to react or decompose under normal conditions of storage.  |
| Incompatibilities:        | Store away from strong alkalis and Cyanides of Class 6.1  |
| Conditions to avoid:      | Material may decompose at high temperatures (after water has evaporated and product dries and reaches calcination temperatures) to evolve Hydrogen Chloride vapour. |
| Decomposition products:   | Severe overheating may produce hydrogen chloride gas and aluminium oxide once water has been driven off.  |
| Hazardous polymerisation: | Will not occur.   |

**TOXICOLOGICAL INFORMATION**

Toxicology data: (ex "Sax's, Dangerous Properties of Industrial Materials" Ed. 8):

skn-hmn 7500 mg/#D-I MLD  
 dnd-mam:lym 40 mmol/L  
 ivn-mus TDLo:483 g/kg  
 orl-rat LD50:3311 mg/kg  
 ipr-rat LD50:728 mg/kg  
 orl-mus LD50:1990 mg/kg  
 ipr-mus LD50:940 mg/kg

|                        |  |
|------------------------|--|
| Toxicity profile:      | Material is not a persistent poison, and is not listed in the Standard for the Uniform Scheduling of Drugs and Poisons (Vol. 20). Basic aluminium chloride solutions would be expected to hydrolyse on contact with water to form aluminium hydroxide, eventually becoming a part of the eco-system. |
| Threshold limit value: | 2 mg/M <sup>3</sup> based on Al, (Ref ACGIH soluble Aluminium salts)   |

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## ECOLOGICAL INFORMATION

### Environmental fate and distribution:

Not a persistent pollutant; can cause coagulation of solids in aqueous suspension. Aluminium compounds are common in most soils and are the principle components of Bauxite, a common, naturally occurring mineral. If solids are precipitated from this product they can be expected to become a part of the natural soil profile if not collected. In massive doses, this may form a heavy floc, which will settle as silt but until the floc settles it could affect marine life by clogging sensitive respiratory mechanisms in a similar fashion to muds and clays.

### Effect on effluent treatment:

Product is occasionally used as a coagulant and as a phosphate removal agent in water treatment and may settle out finely divided solids depending on other factors such as pH, from aqueous streams. May influence pH control as this material in raw state has a pH of roughly 3.3, also may add to solids loading in filter cakes and present as a compressible cake. In large quantity this product is likely to make filter cakes "slimey" and wet. This can also cause "blinding" of filter cloths but these will normally respond to hosing or rinsing off.

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## DISPOSAL CONSIDERATIONS

### Waste disposal method:

Refer to local waste disposal authority. This product can be neutralised with alkali to form a mixture of aluminium hydroxide and the chloride salt of the alkali. The resulting mixture is non-hazardous.

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## TRANSPORT INFORMATION

This product is classified as Dangerous Goods. As a Class 8 substance, it must be separated from other placard loads of Dangerous Goods as follows:

Store 12 metres from Dangerous Goods of Class 1 or 7  
Store 12 metres from Dangerous Goods of Class 4.3 or 5 if either load includes bulk  
Store 24 metres from cyanides of Class 6.1 by at least 12 metres if neither is bulk or only one is bulk, or 250 metres if both are bulk.

|                       |                      |             |
|-----------------------|----------------------|-------------|
| UN No.: 1760          | HAZCHEM: 2X          | DG CLASS: 8 |
| Poison Schedule: None | Packaging Group: III | EPG: 37     |

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## REGULATORY INFORMATION

All of the ingredients in this formulation are to be found in the public AICS database.

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[This MSDS consists of 4 pages, please advise if your document does not contain the same number of pages as it will not be complete]

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This MSDS summarises our best knowledge of health and safety hazard information of the product 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.

Please contact the company if any further information is required.

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