



Chemifloc Ltd.

SAFETY DATA SHEET Aluminium Sulphate Solution

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II

Section 1: Identification of the substance and of the company/undertaking

Identification of the substance or mixture

| | |
|-----------------------------|-----------------------------|
| Product Name: | Aluminium Sulphate Solution |
| Chemical Name: | Aluminium Sulphate |
| Registration Number: | 01-2119531538-36 |
| Synonyms: | Liquid Alum |
| Date of first issue: | 17 January 2011 |
| Version number | 05 |
| Revision date: | 24-03-2016 |
| Supersedes date: | 04-03-2016 |

Relevant identified uses of the substance or mixture and uses advised against:

| | |
|-----------------------------|--|
| Identified uses | Use of aluminium salts in the treatment of raw water in the supply of either potable water or industrial process water Use of aluminium salts to treat waste water and in sludge treatment at waste water treatment plants (WWTP's) |
| Uses advised against | None |

Details of the supplier of the safety data sheet

| | |
|----------------------|---|
| Manufacturer: | Chemifloc Ltd Smithstown, Shannon, Co. Clare, Rep. of Ireland. Tel: 00353 61 708699 Fax: 00353 61 708698 e-mail: info@chemifloc.ie |
|----------------------|---|

**Emergency Telephone Number: National Poisons Information Centre,
00353 1 8379964**

Section 2: Hazards Identification

Classification of the substance

The substance has been assessed and/or tested for its physical, health and environmental hazards and the following classificatory applies.

Classification according to Regulation (EC) no 1272/2008 as amended

Health hazards

Serious eye damage/eye irritation Category 2 H319 ó Causes serious eye irritation

Hazard summary

| | |
|------------------------------|---|
| Physical hazards | Not classified for physical hazards. |
| Health hazards | Irritating to eyes. Occupational exposure to the substance may cause adverse health effects |
| Environmental hazards | Not classified for hazards to the environment. |
| Specific hazards | Not available |
| Main symptoms | Not available. |

Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Contains: Aluminium Sulphate



Signal word Warning
Hazard statements H319 - Causes serious eye irritation

Precautionary statements

Prevention P280 ó Wear eye/face protection
P264 - Wash hands thoroughly after handling.
Response P305+351+338 ó IF IN EYES: Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
P337+313 - If eye irritation persists: Get medical advice/attention.

Hazardous components which must be listed on the label:

10043-01-3 Aluminium Sulphate

Further information The product is classified and labeled in accordance with EC directives or respective national laws.

Other hazards: H290 Corrosive to metals only applies if pH <2

Section 3: Composition/Information on Ingredients**Substance****General information**

| Chemical name | % | CAS-No. / EC No. | REACH Registration No. | INDEX No. | Notes |
|--------------------|-------|-------------------------|------------------------|-----------|-------|
| Aluminium Sulphate | 20-30 | 10043-01-3 233-135-0 | 01-2119531538-36 | - | # |
| Water | 70-80 | 7732-18-5 | | | |

Classification: CLP: Eye Dam, 1;H318**Composition comments** The full text for all H-phrases is displayed in section 16.**Section 4: First Aid Measures****General information**

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. No hazards which require special first aid measures.

Description of first aid measures**Inhalation**

Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact

Immediately flush skin with plenty of water. Get medical attention if irritation develops or persists.

Eye contact

Important! Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If possible use lukewarm water. Consult a physician. Do not rub the eyes, mechanical irritation. Continue rinsing eyes during transport to hospital.

Ingestion

If ingestion of a large amount does occur, seek medical attention. Rinse mouth with water.

Most important symptoms and effects, both acute and delayed

Corrosive effects, May cause irreversible eye damage.

Indication of any immediate medical attention and special treatment needed

Rinse with plenty of water.

Section 5: Firefighting measures

| | |
|--|--|
| General fire hazards | Non-combustible, substance itself does not burn. |
| Extinguishing media | |
| Suitable extinguishing media | Use fire-extinguishing media appropriate for surrounding materials. |
| Unsuitable extinguishing Media | None known. |
| Special hazards arising from the substance or mixture | The product itself does not burn. No unusual fire or explosion hazards noted. May decompose upon heating to produce corrosive and/or toxic fumes. Sulphur Oxides (SO _x). |
| Advice for firefighters | |
| Special protective equipment for firefighters | Wear self-contained breathing apparatus and protective clothing. |
| Special firefighting procedures | No unusual fire or explosion hazards noted. |

Section 6: Accidental release measures

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|--|--|
| Personal precautions, protective equipment and emergency procedures | |
| For non-emergency personnel | Keep unnecessary personnel away. Local authorities should be advised if significant spillages cannot be contained. Stay upwind. |
| For emergency responders | Not available. |
| Environmental precautions | Prevent further leakage or spillage if safe to do so. Do not contaminate water. |
| Methods and material for containment and cleaning up | Should not be released into the environment. Prevent entry into waterways, sewers, basements or confined areas. Large Spills: Dike the spilled material, where this is possible. Soak up with inert absorbent material. Cover with plastic sheet to prevent spreading. Absorb spillage to prevent material damage. Absorb in vermiculite, dry sand or earth and place into containers. Sweep up or gather material and place in appropriate container for disposal. Following product recovery, flush area with water. After removal flush contaminated area thoroughly with water. Clean up in accordance with all applicable regulations. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. This material and its container must be disposed of as hazardous waste. After removal flush contaminated area thoroughly with water. This material and its container must be disposed of as hazardous waste. For waste disposal, see Section 13. |
| Reference to other sections | Not available. |

Section 7: Handling and storage

| | |
|---|---|
| Precautions for safe handling | Avoid contact with eyes. Avoid prolonged exposure. Wash hands thoroughly after handling. Emergency eye wash fountains and emergency showers should be available in the immediate vicinity. |
| Conditions for safe storage, including any incompatibilities | Keep container tightly closed. Keep only in the original container. Store in corrosive resistant/container with a resistant inner liner. Keep out of the reach of children. Store in rubber lined mildsteel or plastic tanks. Avoid freezing. Keep away from incompatible materials. |
| Materials for packaging: | Suitable material: plastic (PE, PP, PVC), fiberglass-reinforced polyester, epoxy-coated concrete, titanium, acidproof or rubber-coated steel. |
| Materials to avoid: | Bases, non-acid proof metals (for example aluminium, copper and iron), Avoid contact with unalloyed steel or galvanized surfaces. |
| Other data: | Stable under recommended storage conditions. |
| Specific end use(s) | The specified uses for this material are shown in section 1 of this document. |

Section 8: Exposure controls / personal protection

Control parameters

Occupational exposure limits

Ireland

United Kingdom

Components

| Components | Type | Value | Form |
|---------------------------------|------|---------------------|-------------------------|
| Aluminium sulphate (10043-01-3) | TWA | 2 mg/m ³ | Soluble aluminium salts |

Biological limit values

No biological exposure limits noted for the ingredient(s).

Recommended monitoring procedures

Not available.

DNEL

Components

| Components | Type | Route | Value | Form |
|---------------------------------|----------|------------|------------------------|----------------------------|
| Aluminium Sulphate (10043-01-3) | Consumer | Oral | 3.4 mg/kg bw/day | Long term Systemic effects |
| | Industry | Inhalation | 20.2 mg/m ³ | Long term Systemic effects |

PNEC

Components

| Components | Type | Route | Value | Form |
|---------------------------------|----------------|-------|----------|--------------|
| Aluminium Sulphate (10043-01-3) | Not applicable | STP | 20 mg/l | |
| | | Water | 0.3 µg/l | Freshwater |
| | | Water | 0.03µg/l | Marine water |

Exposure Controls

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Good general ventilation should be sufficient to control airborne levels. Local exhaust is suggested for use, where possible, in enclosed or confined spaces. Ventilation should effectively remove and prevent build up of any aerosols or mists generated from the handling of the product.

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Individual protection measures, such as personal protective equipment.

General information

Eye wash fountain is recommended.

Eye/face protection

Wear eye face protection. (EN166)

Skin protection

- Hand protection

Wear protective gloves. Chemical resistant gloves made of butyl rubber or nitrile rubber category III according to EN 374.

- Other

Normal work clothing (long sleeved shirts and long pants) is recommended.

Respiratory protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Thermal Hazards

Not available

| | |
|--|--|
| Hygiene measures | Avoid contact with eyes. Handle in accordance with good industrial hygiene and safety practices. |
| Environmental exposure controls | Not available. |

Section 9: Physical and chemical properties

General information (Appearance, odour)

| | |
|-----------------------|------------------|
| Physical State | Aqueous solution |
| Colour | Clear |
| Odour | Not significant |

Important health safety and environmental information

| | |
|--|--|
| pH | 2.0 6 2.5 |
| Melting point/range | < -15 °C (< 5 °F) |
| Boiling point / range | not applicable, In accordance with column 2 of REACH Annex VII, the study does not need to be conducted. |
| Flash point | not applicable, In accordance with column 2 of REACH Annex VII, the study does not need to be conducted., inorganic compound |
| Flammability (solid, gas) | does not sustain combustion. |
| Explosive properties | |
| - Lower explosive limit | not applicable |
| - Upper explosive limit | |
| Vapour Pressure | not applicable, In accordance with column 2 of REACH Annex VII, the study does not need to be conducted. |
| Density | 1.32 g/cm ³ |
| Solubility(ies) | |
| - Water solubility | miscible |
| Partition coefficient (n-octanol/water) | not applicable, inorganic compound. |
| Thermal Decomposition | 650°C |
| Other information | Crystallisation Point: -7°C for a typical solution of aluminium content of 42.4 g/kg of solution |

Section 10: Stability and reactivity

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|---|---|
| Reactivity | Can corrode base metals in the presence of water. |
| Chemical stability | Stable under recommended storage conditions. |
| Possibility of hazardous reactions | Corrodes metals under influence of moisture. |
| Conditions to avoid | Reacts violently with strong alkaline substances. This product may react with reducing agents. Do not mix with other chemicals. |
| Incompatible materials | Bases, non-acid proof metals (for example aluminium, copper and iron) Avoid contact with unalloyed steel or galvanized surfaces. |
| Hazardous decomposition products | sulphur oxides (SOx) |
| Thermal decomposition | 650°C. |

Section 11: Toxicological information

General information Not available.
Information on likely routes of exposure

| | |
|---------------------|--------------------------------------|
| Ingestion | Not applicable. |
| Inhalation | Not applicable. |
| Skin contact | Not applicable. |
| Eye contact | Causes serious eye irritation. |
| Symptoms | Irritation, redness, blurred vision. |

Information on toxicological effects

Acute toxicity Not classified.

| Components | Test results |
|---------------------------------|---|
| Aluminium Sulphate (10043-01-3) | Acute Dermal LD50 Rat > 5000 mg/kg Acute Inhalation LC50 Rat > 5000 mg/m ³ 4.00 hours Acute Oral LD50 Rat: 2000-5000 mg/kg |

* Estimates for product may be based on additional component data not shown.

| | |
|---|--|
| Skin corrosion/irritation | Not classified. |
| Serious eye damage/eye irritation | Causes serious eye damage. Dust in the eyes will cause irritation. |
| Respiratory sensitization | Not classified. |
| Skin sensitisation | Not classified. |
| Germ cell mutagenicity | Not classified. |
| Carcinogenicity | Not classified. |
| Reproductive toxicity | Not classified. |
| Specific target organ Toxicity – single exposure | Not classified. |
| Specific target organ Toxicity – repeated exposure | Not classified. |
| Aspiration hazard | Not classified |
| Mixture versus substance Information | Not known |
| Other information | None known. |

Section 12: Ecological information**Toxicity**

| Components | Test results |
|---------------------------------|---|
| Aluminium Sulphate (10043-01-3) | NOEC Brook trout (<i>Salvelinus fontinalia</i>): 13µg/l 60.00 days dissolved Al LC50 Brown trout (<i>Salmo trutta</i>): 15µg/l 42.00 days dissolved Al EC50 Daphnia: 212 ó 1260 µg/l 48.00 hours dissolved Al EC50 Daphnia: > 200 mg/l 48.00 hours |

* Estimates for product may be based on additional component data not shown.

| | |
|---|---|
| Persistence and degradability | The product solely consists of inorganic compounds which are not biodegradable. |
| Bioaccumulative potential | Not assigned. |
| Mobility | Not assigned. |
| Environmental fate – Partition coefficient | Not applicable. |
| Mobility in soil | Not assigned. |
| Results of PBT and vPvB assessment | None known. |
| Other adverse effects | None known. |

Section 13: Disposal considerations

| | |
|-------------------------------------|---|
| Residual waste | Not available |
| Contaminated packaging | Empty containers should be taken to an approved waste handling site for recycling or disposal. |
| EU waste code | Not available. |
| Disposal methods/information | Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not dispose of waste into sewer. Dispose of contents/container in accordance with local/regional/international regulations. |

Section 14: Transport information

| | |
|-------------|--|
| ADR | Not classified as dangerous in the meaning of transport regulations. |
| IATA | Not classified as dangerous in the meaning of transport regulations. |
| IMDG | Not classified as dangerous in the meaning of transport regulations. |

Section 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

EU Regulations

Regulation (EC) No. 2037/2000 on substances that deplete the ozone layer, Annex I

Not listed.

Regulation (EC) No. 2037/2000 on substances that deplete the ozone layer, Annex II

Not listed.

Regulation (EC) No. 850/2004 on persistent organic pollutants, Annex I

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 1

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 2

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 3

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex V

Not listed.

Commission Decision 2000/479/EC on the implementation of a European pollutant emission register (EPER)

Not listed.

Regulation (EC) No. 1907/2006, Article 59(1). Candidate List

Not listed.

National regulations Not available.

Other regulations Prepared in accordance with Annex II of the REACH Regulation (EC) 1907/2006 as amended by Commission Regulation (EU) 453/2010, and with CLP Regulation (EC) 1272/2008.

Chemical Safety Assessment

A Chemical Safety Assessment has been carried out for the components of this mixture.

Inventory status

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|-----------------------------|---|------------------------|
| Australia | Australian Inventory of Chemical Substances (AICS) | Yes |
| Canada | Domestic Substances List (DSL) | Yes |
| Canada | Non-Domestic Substances List (NDSL) | No |
| China | Inventory of Existing Chemical Substances in China (IECSC) | Yes |
| Europe | European Inventory of New and Existing Chemicals (EINECS) | Yes |
| Europe | European List of Notified Chemical Substances (ELINCS) | No |
| Japan | Inventory of Existing and New Chemical Substances (ENCS) | Yes |
| Korea | Existing Chemicals List (ECL) | Yes |
| New Zealand | New Zealand Inventory | Yes |
| Philippines | Philippine Inventory of Chemicals and Chemical Substances (PICCS) | Yes |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | Yes |

A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

Section 16: Other information

Full text of H-Statements referred to under sections 2 and 3.

H319

Causes serious eye irritation.

Training advice

Not available

Further information

Disclaimer.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Revised sections

Changes made to this document since the previous revision can be found in section(s), 1, 2, 9, 16.

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