

SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

- Datasheet Number: SP412 Version 2.0.0
- Product Name: Granular Flocculant
- Chemical Name: Aluminium sulphate
- Synonyms: Dialuminium(3+) trisulfate
- CAS Number: 10043-01-3 (hexadecahydrate 16828-11-8)
- EC No.: 233-135-0
- REACH Registration Number: 01-2119531538-36-XXXX

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

- Use of the substance/mixture: Pool / spa treatment
- Use advised against: No information available

1.3 Details of the supplier of the safety data sheet

- Name of Supplier: Total Pool Chemicals Ltd
- Address of Supplier: Unit 1-5 , Pool Bank Business Park
High Street, Tarvin
Chester
UK
CH3 8JH
- Telephone: +44 (0)1829 740290
- Email: sales@totalpool.co.uk

1.4 Emergency telephone number

- +44 (0)1829 740290 (Office Hours)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

- Classification (REGULATION (EC) No 1272/2008) [CLP/GHS]: Eye Dam. 1, H318
- Additional information: For full text of Hazard- and EU Hazard-statements: see section 16

2.2 Label elements



- Signal Word: Danger
- Hazard statements
H318 - Causes serious eye damage.
- Precautionary statements
P102 - Keep out of reach of children.
P260 - Do not breathe dust
P280 - Wear eye/face protection
P305+P351+P338+P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.
P401 - Store in accordance with local/regional/national/international regulations..
P501 - Dispose of contents/container to an authorised waste collection point

Revision: 30 October 2020

SECTION 2: Hazards identification (....)

- Supplemental Hazard information (EU)
None

2.3 Other hazards

- Not a PBT according to REACH Annex XIII
 - Not a vPvB according to REACH Annex XIII
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SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical Name	Conc.	CAS No.	EC No.	Classification (REGULATION (EC) No 1272/2008) [CLP/GHS]	SCL/ M-Factor/ ATE	REACH Registration Number	WEL/ OEL
Aluminium sulphate	≤ 100%	10043-01-3 (hexadecahydrate 16828-11-8)	233-135-0	Met. Corr. 1, H290; Eye Dam. 1, H318	-	01-2119531538 -36-XXXX	Yes

Met. Corr. 1 only applies to aqueous solutions. As corrosivity depends on pH/concentration, the classification need not apply if it can be shown that individual products do not meet the criteria.

3.2 Mixtures

- Not applicable
-

SECTION 4: First aid measures

Rescuers should put on approved personal protective equipment (PPE) before administering first aid

Rescuers should take suitable precautions to avoid becoming casualties themselves

4.1 Description of first aid measures

- Contact with eyes
 - If substance has got into eyes, immediately wash out with plenty of water for several minutes
 - Irrigate eyes thoroughly whilst lifting eyelids
 - Remove contact lenses, if present and easy to do. Continue rinsing.
 - Get immediate medical advice/attention.
- Contact with skin
 - After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of soap and water
 - Contaminated clothing should be laundered before reuse
 - If skin irritation occurs: Get medical advice/attention.
- Ingestion
 - Rinse mouth with water (do not swallow)
 - Give plenty of water to drink
 - Do NOT induce vomiting.
 - Get medical advice/attention.
- Inhalation
 - If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
 - IF exposed or concerned: Get medical advice/attention.

4.2 Most important symptoms and effects, both acute and delayed

- Contact with eyes
 - Causes redness and swelling
 - May cause severe damage with formation of corneal ulcers and permanent impairment of vision.
-

SECTION 4: First aid measures (....)

- Contact with skin
May cause redness and irritation
- Ingestion
May cause gastro-intestinal irritation
May cause nausea/vomiting
- Inhalation
Dust may cause respiratory irritation.

4.3 Indication of any immediate medical attention and special treatment needed

- Treat symptomatically
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SECTION 5: Firefighting measures

5.1 Extinguishing media

- Suitable extinguishing media: Not flammable. In case of fire use extinguishing media appropriate to surrounding conditions
- Unsuitable extinguishing media: High volume water jet

5.2 Special hazards arising from the substance or mixture

- Gives off irritating or toxic fumes (or gases) in a fire.
- Decomposition products may include sulphur oxides

5.3 Advice for firefighters

- Collect contaminated fire extinguishing water separately. This MUST not be discharged into drains. Prevent fire extinguishing water from contaminating surface or ground water.
 - Special protective equipment: Wear self-contained breathing apparatus (SCBA). Wear full protective clothing including chemical protection suit.
-

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- Rescuers should take suitable precautions to avoid becoming casualties themselves
- Only trained and authorised personnel should carry out emergency response
- Personal precautions for non-emergency personnel: Avoid formation of dust; Do not breathe dust; Wear protective clothing as per section 8; Wash thoroughly after handling.
- Personal precautions for emergency responders: Wear self-contained breathing apparatus (SCBA); Wear suitable protective clothing, eye/face protection and gloves; PVC or rubber gloves are recommended

6.2 Environmental precautions

- Avoid release to the environment.
- Do not allow to enter public sewers and watercourses
- If contamination of drainage systems or water courses is unavoidable, immediately inform appropriate authorities

6.3 Methods and material for containment and cleaning up

- Stop leak if safe to do so.
 - Small spills
Wipe up spillage with damp absorbent cloth or towel
 - Large spills
Avoid formation of dust
Sweep or shovel-up spillage and remove to a safe place
Place in sealable container
Seal containers and label them
-

SECTION 6: Accidental release measures (....)

- Remove contaminated material to safe location for subsequent disposal
- Seek expert advice for removal and disposal of all contaminated materials and wastes
- Flush spill area with copious amounts of water

6.4 Reference to other sections

- See section(s): 7, 8 & 13
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SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Use only in well ventilated areas
- Provide sufficient air exchange and/or exhaust in work rooms.
- Prevent formation of dust
- Do not breathe dust
- Avoid contact with skin and eyes
- Wear protective clothing as per section 8
- Do not eat, drink or smoke when using this product.
- Contaminated clothing should be laundered before reuse
- Contaminated work clothing should not be allowed out of the workplace.
- Use good personal hygiene practices
- Wash thoroughly after handling.
- Eyewash bottles should be available

7.2 Conditions for safe storage, including any incompatibilities

- Keep in a cool, dry, well ventilated place
- Keep container tightly closed.
- Protect from moisture.
- Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- Keep away from metals
- Keep away from food, drink and animal feedingstuffs
- Keep away from acids and alkalis
- Keep away from oxidising substances

7.3 Specific end use(s)

- Pool / spa treatment
-

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

- If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.
Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace exposure - Measurement of exposure by inhalation to chemical agents - Strategy for testing compliance with occupational exposure limit values). European Standard EN 14042 (Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents). European Standard EN 482 (Workplace exposure. General requirements for the performance of procedures for the measurement of chemical agents). Reference to national guidance documents for methods for the determination of hazardous substances will also be required.
 - Aluminium sulphate
 - WEL (long term): 2 mg/m³ (UK as aluminium; salts, soluble)
 - DNEL (inhalational) 3 mg/m³ Industry, Long Term, Systemic Effects
 - DNEL (inhalational) 2 mg/m³ Industry, Acute/Short Term, Systemic Effects
 - DNEL (inhalational) 3 mg/m³ Industry, Long Term, Local Effects
 - DNEL (inhalational) 2 mg/m³ Industry, Acute/Short Term, Local Effects
 - DNEL (dermal) 1.71 mg/kg (bw/day) Industry, Long Term, Systemic Effects
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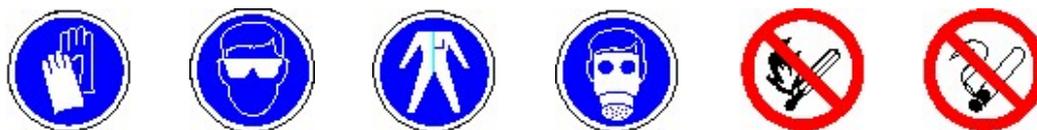
SECTION 8: Exposure controls/personal protection (....)

DNEL (dermal) 46.7 mg/kg (bw/day) Industry, Acute/Short Term, Systemic Effects
 DNEL (dermal) 882 µg/cm² Industry, Long Term, Local Effects
 DNEL (dermal) 882 µg/cm² Industry, Acute/Short Term, Local Effects
 DNEL (inhalational) 1.5 mg/m³ Consumer, Long Term, Systemic Effects
 DNEL (inhalational) 1 mg/m³ Consumer, Acute/Short Term, Systemic Effects
 DNEL (inhalational) 1.5 mg/m³ Consumer, Long Term, Local Effects
 DNEL (inhalational) 1 mg/m³ Consumer, Acute/Short Term, Local Effects
 DNEL (dermal) 855 µg/kg (bw/day) Consumer, Long Term, Systemic Effects
 DNEL (dermal) 23.35 mg/kg (bw/day) Consumer, Acute/Short Term, Systemic Effects
 DNEL (dermal) 441 µg/cm² Consumer, Long Term, Local Effects
 DNEL (dermal) 441 µg/cm² Consumer, Acute/Short Term, Local Effects
 DNEL (oral) 1.9 mg/kg (bw/day) Consumer, Long Term, Systemic Effects
 DNEL (oral) 92.4 mg/kg (bw/day) Consumer, Acute/Short Term, Systemic Effects
 PNEC aqua (freshwater) 4.5 mg/l
 PNEC aqua (intermittent releases, freshwater) 30.11 mg/l
 PNEC aqua (marine water) 64 mg/l
 PNEC (STP) 60.2 mg/l
 PNEC sediment (freshwater) 10 mg/kg
 PNEC sediment (marine water) 31.4 mg/kg
 PNEC (air) 2 mg/m³
 PNEC terrestrial (soil) 58 mg/kg
 PNEC secondary poisoning (food) 150 mg/kg

8.2 Exposure controls

- Selection and use of personal protective equipment should be based on a risk assessment of exposure potential
- Engineering controls
 - Ensure adequate ventilation
 - Engineering controls should be provided to prevent the need for ventilation
 - Use local exhaust ventilation and/or enclosures.
- Respiratory protection
 - In case of insufficient ventilation, wear suitable respiratory equipment
 - Use type FFP2 (EN 143) dust masks
 - Where a reusable half mask respirator is required, use EN 140 mask and EN 143 particle filter, or EN 1827
 - Where a full face mask respirator is required, use EN 136, with particle filter EN 143
- Eye/face protection
 - Wear goggles giving complete eye protection approved to standard EN 166.
- Skin protection
 - Wear protective gloves. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and standard EN 374.
 - The selection of a suitable glove depends on work conditions and whether the product is present on its own or in combination with other substances. Breakthrough time is dependent on the characteristics of the brand of glove used and the supplier should be consulted.
 - PVC or rubber gloves are recommended
 - Wear suitable protective clothing
 - Contaminated work clothing should not be allowed out of the workplace.
 - Contaminated clothing should be laundered before reuse
- Hygiene measures
 - Do not eat, drink or smoke when using this product.
 - Use good personal hygiene practices
 - Wash thoroughly after handling.
 - Eyewash bottles should be available
- Environmental exposure controls
 - Do not empty into drains
 - Do not allow to penetrate the ground/soil.

Revision: 30 October 2020

SECTION 8: Exposure controls/personal protection (....)


SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- Appearance: White powder
- Odour: None
- Odour threshold: No information available
- pH: Not applicable
- Melting point/freezing point: 770 °C (decomp)
- Initial boiling point and boiling range: 798.27 - 806.45 °C
- Flashpoint: Not applicable
- Evaporation Rate: No information available
- Flammability (solid,gas): Not flammable
- Upper/lower flammability or explosive limits: Not applicable
- Vapour Pressure: 0 - 0.001 Pa @ 20 - 25 °C
- Vapour Density: Not applicable
- Relative Density: 2.71 @ 20 °C
- Solubility(ies): Soluble in water; Water solubility 3.12 g/l at 0 °C
- Partition Coefficient (n-Octanol/Water): Log Pow: -5.075 @ 25 °C and pH 7
- Autoignition Temperature: No information available
- Decomposition temperature: No information available
- Viscosity: No information available
- Explosive Properties: Not applicable
- Oxidising properties: Not oxidising

9.2 Other information

- Molecular formula: $Al_2O_{12}S_3$

SECTION 10: Stability and reactivity

10.1 Reactivity

- No information available

10.2 Chemical stability

- Hygroscopic

10.3 Possibility of hazardous reactions

- Aqueous solution is acidic and may react with metal to liberate flammable hydrogen gas.

10.4 Conditions to avoid

- Avoid formation of dust
- Keep away from heat and moisture

10.5 Incompatible materials

- Incompatible with metals
- Incompatible with acid
- Incompatible with oxidizing substances
- Incompatible with alkalis (strong bases)

10.6 Hazardous decomposition products

Revision: 30 October 2020

SECTION 10: Stability and reactivity (....)

- Decomposition products may include sulphur oxides
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SECTION 11: Toxicological information

11.1 Information on toxicological effects

- Acute Toxicity
Based on available data, the classification criteria are not met

Substances

Chemical Name	LD50 (oral, rat)	LC50 (inhalation, rat)	LD50 (dermal, rabbit)
Aluminium sulphate	2 000 - 5 000 mg/kg	5 - 5.09 mg/l (4 h)	1 167.5 - 5 000 mg/kg

- Skin corrosion/irritation
Based on available data, the classification criteria are not met
- Serious eye damage/irritation
Causes serious eye damage.
- Respiratory or skin sensitisation
Based on available data, the classification criteria are not met
- Germ cell mutagenicity
No evidence of mutagenic effects
- Carcinogenicity
No evidence of carcinogenic effects

Substances

Chemical Name	NOAEL (oral, rat)	NOAEC (inhalation, rat)	NOAEL (dermal, rat)
Aluminium sulphate	850 mg/kg bw/day (mouse)	6.1 mg/m ³	6.8 mg/kg bw/day (mouse)

- Reproductive toxicity
No evidence of reproductive effects

Substances

Chemical Name	NOAEL (oral, rat)	NOAEL (inhalation, rat)	LOAEC (inhalation, rat)	NOAEL (dermal, rat)	LOAEL (dermal, mouse)
Aluminium sulphate	5.41 mg/kg bw/day (Effect on fertility) 93 mg/kg bw/day (Effect on developmental toxicity)	38.6 mg/m ³ (Effect on fertility)	12 mg/m ³ (Effect on developmental toxicity)	2.48 mg/kg bw/day (Effect on fertility)	2.21 mg/kg bw/day (Effect on developmental toxicity)

- Specific target organ toxicity (STOT) - single exposure
Based on available data, the classification criteria are not met
- Specific target organ toxicity (STOT) - repeated exposure
Based on available data, the classification criteria are not met

Substances

Chemical Name	NOAEL (oral, rat)	NOAEC (inhalation, rat)	NOAEL (dermal, rat)
Aluminium sulphate	342 mg/kg bw/day	15 mg/m ³	8.55 mg/kg bw/day

- Aspiration hazard
Based on available data, the classification criteria are not met

SECTION 11: Toxicological information (....)

- Contact with eyes
 - Causes redness and swelling
 - May cause severe damage with formation of corneal ulcers and permanent impairment of vision.
 - Contact with skin
 - May cause redness and irritation
 - Ingestion
 - May cause gastro-intestinal irritation
 - May cause nausea/vomiting
 - Inhalation
 - Dust may cause respiratory irritation.
-

SECTION 12: Ecological information

12.1 Toxicity

- Based on available data, the classification criteria are not met
- Aluminium sulphate
 - LC50 (fish) 122.17 mg/l
 - EC50 (aquatic invertebrates) 242 mg/l
 - EC50 (aquatic algae) 302 mg/l - 3.011 g/l

12.2 Persistence and degradability

- Not applicable; inorganic

12.3 Bioaccumulative potential

- Bioaccumulation is not expected

12.4 Mobility in soil

- No data available

12.5 Results of PBT and vPvB assessment

- Not a PBT according to REACH Annex XIII
- Not a vPvB according to REACH Annex XIII

12.6 Other adverse effects

- No information available
-

SECTION 13: Disposal considerations

13.1 Waste treatment methods

- Disposal should be in accordance with local, state or national legislation
- Do not discharge into drains or the environment, dispose to an authorised waste collection point
- Do not reuse empty containers without commercial cleaning or reconditioning

13.2 Classification

- The waste must be identified according to the List of Wastes (2000/532/EC)
 - Hazardous Property Code(s): HP 4 Irritant
-

SECTION 14: Transport information

Not classified as hazardous for transport

14.1 UN number

SECTION 14: Transport information (....)

- UN No.: Not applicable
- 14.2 UN proper shipping name
 - Proper Shipping Name: Not applicable
- 14.3 Transport hazard class(es)
 - Hazard Class: Not applicable
- 14.4 Packing group
 - Packing Group: Not applicable
- 14.5 Environmental hazards
 - Not Classified
- 14.6 Special precautions for user
 - No information available
- 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code
 - Not applicable
- 14.8 Road/Rail (ADR/RID)
 - Proper Shipping Name: Not applicable
 - ADR UN No.: Not applicable
 - ADR Hazard Class: Not applicable
 - ADR Packing Group: Not applicable
 - Tunnel Code: Not applicable
- 14.9 Sea (IMDG)
 - Proper Shipping Name: Not applicable
 - IMDG UN No.: Not applicable
 - IMDG Hazard Class: Not applicable
 - IMDG Pack Group.: Not applicable
- 14.10 Air (ICAO/IATA)
 - Proper Shipping Name: Not applicable
 - ICAO UN No.: Not applicable
 - ICAO Hazard Class: Not applicable
 - ICAO Packing Group: Not applicable

SECTION 15: Regulatory information

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
 - This safety data sheet is provided in compliance with REACH Regulation (EC) No 1907/2006 as amended by Regulation (EU) 2015/830
 - Regulation (EC) No. 1272/2008 on the classification, labelling and packaging of substances and mixtures (CLP Regulation) applies in Europe
- 15.2 Chemical safety assessment
 - A REACH chemical safety assessment has not been carried out

SECTION 16: Other information

The statements made herein are based on our best present experience and are intended to describe product safety requirements. They should not therefore be considered as a warranty of specific properties.



Revision: 30 October 2020

SECTION 16: Other information (....)

Sources of data: Information from published literature and supplier safety data sheets

Revision No. 2.0.0. Revised October 2020.

Changes made: Revisions to all sections to conform to Regulation (EU) 2015/830.

Text not given with phrase codes where they are used elsewhere in this safety data sheet:

- H290: May be corrosive to metals
- H318: Causes serious eye damage

Acronyms

- ATE: Acute Toxicity Estimate
- CAS: Chemical Abstracts Service
- DNEL: Derived No-Effect Level
- EC: European Community
- EC50: Effective Concentration, 50%
- GHS: Globally Harmonised System
- LC50: Lethal Concentration, 50%
- LD50: Lethal Dose, 50%
- LOAEC: Lowest observed adverse effect concentration
- LOAEL: Lowest Observed Adverse Effect Level
- NOAEC: No observed adverse effect concentration
- NOAEL: No observed adverse effect level
- OEL: Occupational Exposure Limit
- PBT: Persistent, Bioaccumulative and Toxic
- PNEC: Predicted No-Effect Concentration
- REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals
- SCL: Specific Concentration Limit
- vPvB: very Persistent and very Bioaccumulative
- WEL: Workplace Exposure Limit

--- end of safety datasheet ---
