



Chemifloc Ltd.

SAFETY DATA SHEET Aluminium Sulphate High Acid Solution

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

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

Identification of the substance or mixture

Product Name: Chemifloc 103
Chemical Name: Aluminium Sulphate High Acid
Registration Number: 01-2119531538-36
Synonyms: High Acid Alum.
Date of first issue: 17 January 2011
Version number: 04
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 in the treatment of raw water in the supply of either potable water or industrial process water
Use of aluminium 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
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e-mail: info@chemifloc.ie

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

Section 2: Hazards Identification

Classification of the mixture

The mixture 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

Physical hazards

Corrosive to metals Category 1 H290 ó May be corrosive to metals

Health hazards

Serious eye damage/eye irritation Category 1 H318 ó Causes serious eye damage
Skin corrosion/irritation Category 2 H315 ó Causes skin 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 and Sulphuric Acid



Signal word Danger
Hazard statements H290 ó May be corrosive to metals.
H318 - Causes serious eye damage.
H315 ó Causes skin 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.
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water.
P337+313 - If eye irritation persists: Get medical advice/attention.

Hazardous components which must be listed on the label:

10043-01-3 Aluminium Sulphate,
7664-93-9 Sulphuric Acid

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

Mixture

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	-	#
Classification:	CLP: Eye Dam, 1;H318				
Sulphuric Acid	5-10	7664-93-9 231-639-5	01-2119458838-20	-	#
Classification:	CLP: Skin Corr. 1A;H314				
Water	60-75	7732-18-5 231-791-2		-	

Other components below reportable levels

CLP: Regulation No. 1272/2008.

#: This substance has workplace exposure limit(s).

PBT: persistent, bioaccumulative and toxic substance.

vPvB: very persistent and very bioaccumulative substance.

Composition comments

The full text for all and 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 (SOx).
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

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,	Keep container tightly closed. Keep only in the original container. Store in corrosive

including any incompatibilities	resistant/container with a resistant inner liner. Keep out of the reach of children. Store in rubber lined mild steel 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, acid proof 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	Type	Value	Form
Aluminium sulphate (10043-01-3)	TWA	2 mg/m ³	Soluble aluminium salts
Sulphuric Acid (7664-93-9)	TWA	0.05 mg/m ³ 0.05 mg/m ³	mist

Biological limit values

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

Recommended monitoring procedures

Not available.

DNEL

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
Sulphuric Acid (7664-93-9)	Industry	Air	0.1 mg/m ³	Acute local effects
		Air	0.05 mg/m ³	Long term local effects

PNEC

Components	Type	Route	Value	Form
Aluminium Sulphate (10043-01-3)	Not applicable	STP	20 mg/l	
		Water	0.3 µg/l	Freshwater
Sulphuric Acid (7664-93-9)	Not applicable	Water	0.03 µg/l	Marine water
		Sediment	0.002 mg/kg	
		STP Water	8.8 mg/l 0.0025 mg/l	Fresh and 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.

General information	Use personal protective equipment as required. Eye wash fountain is recommended. Keep working clothes separately.
Eye/face protection	Wear eye/face protection. (EN166)
Skin protection	
- Hand protection	PVC or other plastic material gloves. (EN374)
- 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	Do not get in eyes. Avoid contact with skin. Keep away from food and drink. Handle in accordance with good industrial hygiene and safety measures.
Environmental Exposure controls	Not available.

Section 9: Physical and chemical properties

Information on basic physical and chemical properties

General information (Appearance, odour)

Physical State	Aqueous solution
Colour	Colourless
Odour	Not significant

Important health safety and environmental information

pH	0.5 6 2.5
Melting point/range	< -7 °C
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	1.3 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

Reactivity	Can corrode base metals.
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 (SO _x)
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 Causes skin irritation.
Eye contact Causes serious eye damage.
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/m³ 4.00 hours
 Acute Oral LD50 Rat: 2000 - 5000 mg/kg

Sulphuric Acid (7664-93-9)

Acute Oral LD50 Rat: ≥ 2000 mg/kg
 Acute Inhalation LC50 Guinea pig: 110 mg/m³ 8.00 Hours
 Acute Inhalation LC50 Mouse: 850 mg/m³ 4.00 Hours
 Acute Inhalation LC50 Rat: 347 mg/m³ 1.00 hours
 Acute Oral LD50 Rat: 2140 mg/kg

Skin corrosion/irritation Causes skin irritation.
Serious eye damage/eye irritation Causes serious eye damage.
Skin Sensitisation Not classified
Respiratory Sensitisation Not available
Germ Cell mutagenicity Not classified
Carcinogenicity Not classified
Reproductive toxicity Not classified
STOT - single exposure The substance is not classified
STOT- repeated exposure The substance is not classified
Aspiration hazard Not classified.
Mixture versus substance Information None known.
Other information Not available.

Section 12: Ecological information

Toxicity

Components

Test results

Aluminium sulphate (10043-01-3)

NOEC Brook trout (*Salvelinus fontinalia*): 13µg/l 60.00 days dissolved Al

Sulphuric acid (7664-93-9)

LC50 Brown trout (*Salmo trutta*): 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
 ErC50 Algae: > 100 mg/l 72.00 hours *Desmodesmus subspicatus*
 LC50 Bluegill (*Lepomis macrochinus*): 16 ó 28 mg/l 96.00 hours
 pH ~3.5
 EC50 Daphnia: > 100 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. The methods for determining the biological degradability are not applicable to inorganic substances.

Bioaccumulative

Not applicable.

Potential Mobility	Not assigned
Environmental fate – Partition coefficient	Not applicable.
Mobility in soil	Not assigned.
Results of PBT and vPvB assessment	Not assigned.
Other adverse effects	Because of the low pH of this product, it would be expected to produce significant ecotoxicity upon exposure to aquatic systems. The product can hydrolyse and form a precipitate of aluminium hydroxide when diluted beyond a particular level. The solubility of the product is dependant on its pH value. Do not discharge into drains, water courses or onto the ground. An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13: Disposal considerations

Waste treatment methods

Residual waste	Neutralise with lime or soda ash. Dispose of in accordance with local regulations.
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 allow this material to drain into sewers/water supplies. Dispose of contents/container in accordance with local/regional/national/international regulations.

Section 14: Transport information

RID/ADR:

UN Number:	3264
UN Proper Shipping Name:	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Aluminium Sulphate)
Transport hazard class(es)	8
Subsidiary class(es)	8
Packing group	II
Environmental hazards	No
Labels required	8
Special precautions for user	Not available.

IATA

UN Number:	3264
UN Proper Shipping Name:	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Aluminium Sulphate)
Transport hazard class(es)	8
Subsidiary class(es)	8
Packing group	II
Environmental hazards	No
Labels required	8
Special precautions for user	Not available.

IMDG

UN number	UN3264
UN proper shipping name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Aluminium Sulphate)
Transport hazard class(es)	8
Subsidiary class(es)	8
Packing group	II
Marine pollutant	No
EmS No.	F-A, S-B
Special precautions for user	Not available.



ADR



IMDG



IATA

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 This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006. No restrictions identified other than those already covered in regulations.

Chemical Safety Assessment

Chemical Safety Assessments have been carried out for the components of the 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.

H290	May be corrosive to metals
H318	Causes serious eye damage.
H315	Causes skin irritation
H302	Harmful if swallowed.

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), 8, 11, 12, 13.

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