



Chemifloc Ltd.

SAFETY DATA SHEET Aluminium Iron Sulphate 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:	Aluminium Iron Sulphate Solution
Chemical Name:	Aluminium Iron Sulphate
Registration Number:	01-2119531538-36, 01-2119513202-59
Synonyms:	Chemifloc 101
Date of first issue:	17 January 2011
Version number	05
Revision date:	01-01-2019
Supersedes date:	04-03-2016

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

Identified uses	Use of aluminium and iron salts in the treatment of raw water in the supply of either potable water or industrial process water Use of aluminium and iron 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
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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	– May be corrosive to metals
Health hazards			
Serious eye damage/eye irritation	Category 1	H318	– Causes serious eye damage
Skin corrosion/irritation	Category 2	H315	– 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 Iron (III) Sulphate



Signal word	Danger.
Hazard statements	H290 ó May be corrosive to metals. H318 - Causes serious eye damage. H315 ó Causes skin irritation. H302 - Harmful if swallowed.
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,

10028-22-5 Iron (III) 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

Mixture

General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	INDEX No.	Notes
Water	55-70	7732-18-5			
Aluminium Sulphate	20-30	10043-01-3 233-135-0	01-2119531538-36	-	#
Classification:	CLP: Eye Dam, 1;H318	The full text for all H-phrases is displayed in section 16.			
Iron (III) Sulphate	10-15	10028-22-5 233-072-9	01-2119513202-59	-	#
Classification:	CLP: Acute Tox. 4;H302, Skin Irrit. 2;H315, Eye Dam. 1;H318				

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, 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 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
Iron (III) Sulphate (10028-22-5)	STEL	2 mg/m ³	
	TWA	1 mg/m ³	

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
Iron (III) Sulphate (10028-22-5)	Consumer	Oral	0.29 mg/kg bw/day	as Fe
		Dermal	0.29 mg/kg bw/day	as Fe
		Inhalation	0.5 mg/m ³	as Fe
	Industry	Dermal	0.57 mg/kg bw/day	as Fe
		Inhalation	2.01 mg/m ³	as Fe

PNEC

Components	Type	Route	Value	Form
Aluminium Sulphate (10043-01-3)	Not applicable	STP	20 mg/l	
		Water	0.3 µg/l	Freshwater
Iron (III) Sulphate (10028-22+5)	Not applicable	Water	0.03 µg/l	Marine water
		Sediment	49.5 mg/kg dw	water
		Soil	55.5 mg/kg dw	
		STP	500 mg/l	

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.

Individual protection measures, such as personal protective equipment.

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 practices

Section 9: Physical and chemical properties

Information on basic physical and chemical properties

General information (Appearance, odour)

Physical State	Aquous solution
Colour	Reddish Yellow
Odour	Not significant

Important health safety and environmental information

pH	0.5 – 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	1.35 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: -13°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 (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	Causes skin irritation.
Eye contact	Causes serious eye damage.

Information on toxicological effects

Acute toxicity	Not classified.
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Iron (III) Sulphate (10028-22-5)

Acute Dermal LD50 Rat: >= 2000 mg/kg similar substance
Acute Oral LD50 Rat: 300 - 2000 mg/kg similar substance

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

Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/eye irritation	Causes serious eye damage.
Skin Sensitisation	Not sensitizing
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
LC50 Brown trout (*Salmo trutta*): 15µg/l 42.00 days dissolved Al
EC50 Daphnia: 212 – 1260 µg/l 48.00 hours dissolved Al
EC50 Daphnia: > 200 mg/l 48.00 hours
LC50 Daphnia: 11.5 mg/l 48 hours as Fe
NOEC Fathead minnow (*Pimephales promelas*): 0.32 mg/l 33.00 day as Fe
LC50 Rainbow trout, donaldson trout (*Oncorhynchus mykiss*): > 100 mg/l 96.00 hours pH adjusted.

Iron (III) Sulphate (10028-22-5)

* 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 potential

Not available.

Mobility

Not available.

Environmental fate –

Not available.

Partition coefficient

Mobility in soil

Not available.

Results of PBT

Not available.

and vPvB assessment

Other adverse effects

Because of the low pH of this product, it would be expected to produce significant ecotoxicity upon exposure to aquatic organisms and aquatic systems. The product can hydrolyse and form a precipitate of aluminium / iron hydroxide when diluted beyond a particular level. The solubility of the product is dependent on its pH value .

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/RID:

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

IMDG

UN number	3264
UN proper shipping name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Aluminium iron sulfate solution)
Transport hazard class(es)	8
Subsidiary class(es)	8
Packing group	III
Marine pollutant	No
EmS No.	F-A, S-B
Special precautions for user	Not available.



ADR



IATA



IMDG

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.
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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