



1. Identification of Substance & Company

Product

Product name	Aluminium Sulphate
Other names	Aluminium sulphate hexahydrate, aluminium sulphate octadecahydrate, aluminium sulphate tetradecahydrate
Product code	NA
HSNO approval	HSR002491
Approval description	Additives, Process Chemicals and Raw Materials (Corrosive) Group Standard 2020
UN number	1759
Proper Shipping Name	8
DG class	CORROSIVE SOLID, N.O.S. (ALUMINIUM SULPHATE)
Packaging group	III
Hazchem code	2X
Uses	Additive

Company Details

Company	Argo International Ltd
Physical Address	9 St Benedicts St, Eden Terrace, Auckland New Zealand
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Fax	+64 9 309 1992
Email	argo@argoint.co.nz
Website	argoint.co.nz

Emergency Telephone Number: 0800 764 766

2. Hazard Identification

Approval

This product is an approved substance under the Hazardous Substances and New Organisms Act (HSNO, Approval HSR002491, Additives, Process Chemicals and Raw Materials (Corrosive) Group Standard 2020). The substance has been assessed as hazardous according to the criteria in the Hazardous substances (Hazard Classification) Notice 2020 and is classified as follows:

GHS Classes

Acute toxicity cat 4 (oral)
Skin irritation cat 2
Metal Corrosive cat 1
Eye Irritation cat 2
Aquatic chronic cat 2

Hazard Statements

H302 - Harmful if swallowed.
H315 - Causes skin irritation.
H290 - May be corrosive to metals.
H319 - Causes serious eye irritation
H411 - Toxic to aquatic life with long lasting effects.

SYMBOLS

WARNING



Other Classifications

There are no other classifications that are known to apply.



Precautionary Statements

Prevention	P101 - If medical advice is needed, have product container or label at hand. P102 - Keep out of reach of children. P103 - Read label before use. P234 - Keep only in original container. P264 - Wash hands thoroughly after handling. P270 - Do not eat, drink or smoke when using this product. P273 - Avoid release to the environment.
Response	P280 - Wear protective gloves/eye protection/face protection. P301+P312 - IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell. P330 - Rinse mouth. P304+P312 - IF INHALED: Call a POISON CENTRE or doctor/physician if you feel unwell. P302+P352 - IF ON SKIN: Wash with plenty of soap and water. P332+P313 - If skin irritation occurs: Get medical advice/ attention. P362 - Take off contaminated clothing and wash before re-use. P390 - Absorb spillage to prevent material damage. P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337+P313 - If eye irritation persists: Get medical advice/attention. P310 - Immediately call a POISON CENTRE or doctor/physician. P391 - Collect spillage.
Storage	P406 - Store in a corrosive resistant container.
Disposal	P501 - Dispose of contents/container in accordance with local/regional/national/international regulation.

3. Composition / Information on Ingredients

Component	CAS/ Identification	Concentration
Aluminium Sulphate	10043-01-3	17%

This is a commercial product whose exact ratio of components may vary slightly. Trace quantities of impurities are also likely.

4. First Aid

General Information

If medical advice is needed, have product container or label at hand. You should call the National Poisons Centre if you feel that you may have been harmed or irritated by this product. The number is 0800 764 766 (0800 POISON) (24 hr emergency service).

Recommended first aid facilities Ready access to running water is recommended. Accessible eyewash is recommended.

Exposure

Swallowed	IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell. Rinse mouth. Give a glass of water to drink. Never give anything by mouth to an unconscious person.
Eye contact	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Skin contact	IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/ attention. Take off contaminated clothing and wash before re-use.
Inhaled	IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTRE or doctor/physician if you feel unwell.

Advice to Doctor

Treat symptomatically

5. Firefighting Measures

Fire and explosion hazards:	There are no specific risks for fire/explosion for this chemical. It is non-flammable.
Suitable extinguishing substances:	Carbon dioxide, extinguishing powder or water jet. Fight larger fires with water jet or alcohol resistant foam.
Unsuitable extinguishing substances:	Unknown.
Products of combustion:	Oxides of sulphur. Water. May form toxic mixtures in air and may accumulate in sumps, pits and other low-lying spaces, forming potentially explosive mixtures.
Protective equipment:	No special measures are required.
Hazchem code:	2X



6. Accidental Release Measures

Containment	If greater than 1000kg is stored, secondary containment and emergency plans to manage any potential spills must be in place. In all cases design storage to prevent discharge to storm water.
Emergency procedures	In the event of spillage alert the fire brigade to location and give brief description of hazard. Stop the source of the leak, if safe to do so. Wear protective equipment to prevent skin, eye and respiratory exposure. Clear area of any unprotected personnel. Contain using sand, earth or vermiculite. Prevent by whatever means possible any spillage from entering drains, sewers, or water courses. (If this occurs contact your regional council immediately).
Clean-up method	Collect and seal in properly labelled containers or drums for disposal. If contamination of crops, sewers or waterways has occurred advise local emergency services.
Disposal	Sweep up and collect recoverable material into labelled containers for recycling or salvage. Recycle containers wherever possible. This material may be suitable for approved landfill. Dispose of only in accord with all regulations.
Precautions	Wear protective equipment to prevent skin and eye contamination and the inhalation of vapours. Work up wind or increase ventilation.

7. Storage & Handling

Storage	Store unopened in the original containers in a secure compound. Containers (and outer packaging) must bear the prescribed labelling, including the Hazchem code, UN number, corrosivity warning and name of contents. SDS sheet must be available. Store away from incompatible materials described in Section 10. Store in a cool, dry, area with sufficient natural/mechanical ventilation to avoid airborne hazards. Store away from sources of heat or ignition and oxidising agents.
Handling	Keep exposure to a minimum, and minimise the quantities kept in work areas. See section 8 with regard to personal protective equipment requirements. Avoid skin and eye contact and inhalation of vapour, mist or aerosols.

8. Exposure Controls / Personal Protective Equipment

Workplace Exposure Standards



A workplace exposure standard (WES) has not been established by WorkSafe NZ for this product. There is a general limit of 3mg/m³ for respirable particulates and 10mg/m³ for inhalable particulates when limits have not otherwise been established.

NZ Workplace Exposure Stds	Ingredient	WES-TWA	WES-STEL
	Aluminium Sulfate	Not listed	Not listed
	Aluminium	5mg/m ³ (as Al)	

Engineering Controls

In industrial situations, it is expected that employee exposure to hazardous substances will be controlled to a level as far below the WES as practicable by applying the hierarchy of control required by the Health and Safety at Work Act (2015) and the Health and Safety at Work (General Risk and Workplace Management) Regulations 2016. Exposure can be reduced by process modification, use of local exhaust ventilation, capturing substances at the source, or other methods. If you believe air borne concentrations of mists, dusts or vapours are high, you are advised to modify processes or increase ventilation.

Personal Protective Equipment

General		Personal Protective Equipment (PPE) should not be used as the primary means of exposure protection, except in the event of an accident or emergency situation or where all other means of protection have proven to inadequate. Clean PPE after use or dispose of as appropriate. Store PPE for re-use in a clean place. Regular training on the correct use of PPE should be provided. In particular the correct fitting and use of respirators and where applicable the cleaning of respirators should be undertaken.
Eyes		Avoid contact with eyes. Use safety glasses and or chemical splash goggles if splashes are possible. Select eye protection in accordance with AS/NZS 1337.
Skin		Protective gloves are recommended. Nitrile or natural rubber gloves are recommended. Protective gloves or suitably resistant material must comply with AS 2161. Replace frequently. Gloves should be checked for tears or holes before use. Protective clothing must comply with AS 2919, AS3765.1 or AS3765.2. PVC or rubber boots must comply with AS/NZS 2210.2 and selected and maintained in accordance with AS/NS2210.1.
Respiratory		A respirator when airborne concentrations approach the WES (section 8). Respirators must have filters appropriate to the duty and comply with AS/NZS1716 and selected, used and



maintained in accordance with AS/NS 1715. Use a respirator with a N95 particulate filter. If using a respirator, ensure that the cartridges are correct for the potential air contamination and are in good working order. Fit testing and clear guidelines and training for use and maintenance of PPE are necessary.

WES Additional Information

Not applicable

9. Physical & Chemical Properties

Appearance	White granular solid
Odour	no odour
Odour Threshold	not applicable
pH	3.5 at 50g/L at 25°C
Freezing/melting point	86.5°C
Boiling Point	not available
Flashpoint	not applicable
Flammability	non flammable
Upper & lower flammable limits	No LEL or UEL
Vapour pressure	no data
Vapour density	no data
Specific gravity/density	1.69g/cm ³ at 25°C
Solubility	Soluble in water (600g/L at 20°C)
Partition coefficient	no data
Auto-ignition temperature	no data
Decomposition temperature	no data
Viscosity	no data
Particle Characteristics	no data

10. Stability & Reactivity

Stability	Stable
Conditions to be avoided	Containers should be kept closed in order to avoid contamination. Avoid dust generation. Avoid exposure to water/moisture/air.
Incompatible groups	Alkali metals, alkalis, metals, phosphorous and phosphorous compounds, halogens, organic solvents, peroxides.
Substance Specific Incompatibility	Hygroscopic – absorbs moisture/water from surrounding air.
Hazardous decomposition products	Decomposes on heating, emitting toxic fumes including: Sulphur oxides, aluminium oxides
Hazardous reactions	none known

11. Toxicological Information

Summary

IF SWALLOWED: may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

IF IN EYES: may cause serious eye irritation.

IF ON SKIN: may cause skin irritation.

IF INHALED: dust may cause respiratory irritation.

Supporting Data

Acute	Oral	LD ₅₀ (oral) for Aluminium Sulfate 770 mg/kg (mouse).
	Aspiration	Sodium carbonate is not considered an aspiration hazard.
	Dermal	No evidence of dermal toxicity.
	Inhaled	Dust may cause irritation.
	Eye	Aluminium sulphate is considered an serious eye irritant.
	Skin	Aluminium sulphate may be irritating to the skin .
Chronic	Sensitisation	No ingredient present at concentrations > 0.1% is considered a sensitizer.
	Mutagenicity	No ingredient present at concentrations > 0.1% is considered a mutagen.
	Carcinogenicity	No ingredient present at concentrations > 0.1% is considered a carcinogen.
	Reproductive / Developmental	No ingredient present at concentrations > 0.1% is considered a reproductive or developmental toxicant or have any effects on or via lactation.
	Systemic	No ingredient present at concentrations > 1% is considered a target organ toxicant.
	Aggravation of existing conditions	None known.



12. Ecological Data

Summary

This substance is considered toxic to aquatic organisms and harmful towards terrestrial vertebrates. In all cases prevent run-off to drains, sewers and waterways.

Supporting Data

Aquatic	LC ₅₀ for Aluminium Sulfate 3.6 mg/l (96hr) <i>Salvelinus fontinalis</i> (fish).
Bioaccumulation	No data
Degradability	No data
Soil	No evidence of soil toxicity.
Terrestrial vertebrate	See acute toxicity.
Terrestrial invertebrate	No evidence of toxicity towards terrestrial invertebrates.
Biocidal	no data

13. Disposal Considerations

Restrictions	There are no product-specific restrictions, however, local council and resource consent conditions may apply, including requirements of trade waste consents.
Disposal method	Disposal of this product must comply with the Hazardous Substances (Disposal) Notice 2017 and the requirements of the Resource Management Act for which approval should be sought from the Regional Authority. The substance must be treated and therefore rendered non-hazardous before discharge to the environment.
Contaminated packaging	Disposal of contaminated packaging must comply with the Hazardous Substances (Disposal) Notice 2017 clause 12. Ensure that the package is rendered incapable of containing any substance and is disposed in a manner that is consistent with the requirements of the substance it contained and the material of the package. If possible reuse or recycle packaging.

14. Transport Information

Land Transport Rule: Dangerous Goods 2005 - NZS 5433:2007

Transport according to NZS 5433 (Transport of Hazardous Substances on Land). Considered a dangerous good for transport.

UN number:	1759	UN number:	CORROSIVE SOLID, N.O.S. (ALUMINIUM SULPHATE)
Class(es)	8	Class(es)	III
Precautions:	Corrosive solid Marine pollutant	Precautions:	2X

15. Regulatory Information

This product is an approved substance under the Hazardous Substances and New Organisms Act (HSNO). Approval code: HSR002491, Additives, Process Chemicals and Raw Materials (Corrosive) Group Standard 2020. All ingredients appear on the NZIoC.

Specific Controls

Key workplace requirements are:

SDS	To be available within 10 minutes in workplaces storing any quantity.
Inventory	An inventory of all hazardous substances must be prepared and maintained.
Packaging	All hazardous substances should be appropriately packaged including substances that have been decanted, transferred or manufactured for own use or have been supplied
Labelling	Must comply with the Hazardous Substances (Labelling) Notice 2017.
Emergency plan	Required if > 1000kg is stored.
Certified handler	Not required.
Tracking	Not required.
Bundling & secondary containment	Not required. (non pooling substance)
Signage	Required if > 1000kg is stored.
Location compliance certificate	Not required.
Flammable zone	Not required.
Fire extinguisher	Not required.

Note: The above workplace requirements apply if only this particular substance is present. The complete set of controls for a location will depend on the classification and total quantities of other substances present in that location.



Other Legislation

In New Zealand, the use of this product may come under the Resource Management Act and Regulations, the Health and Safety at Work Act 2015 and the Health and Safety at Work (General Risk and Workplace Management) Regulations 2016, local Council Rules and Regional Council Plans.

16. Other Information

Abbreviations

Approval Code	Approval HSR002684, Water Treatment Chemicals (Subsidiary Hazard) Group Standard 2020 Controls, EPA. www.epa.govt.nz
CAS Number	Unique Chemical Abstracts Service Registry Number
EC₅₀	Ecotoxic Concentration 50% – concentration in water which is fatal to 50% of a test population (e.g. daphnia, fish species)
EPA	Environmental Protection Authority (New Zealand)
GHS	Globally Harmonised System of Classification and Labelling of Chemicals, 7 th revised edition, 2017, published by the United Nations.
HAZCHEM Code	Emergency action code of numbers and letters that provide information to emergency services, especially fire fighters
HSNO	Hazardous Substances and New Organisms (Act and Regulations)
IARC	International Agency for Research on Cancer
LEL	Lower Explosive Limit
LD₅₀	Lethal Dose 50% – dose which is fatal to 50% of a test population (usually rats).
LC₅₀	Lethal Concentration 50% – concentration in air which is fatal to 50% of a test population (usually rats)
NZIoC	New Zealand Inventory of Chemicals
STEL	Short Term Exposure Limit - The maximum airborne concentration of a chemical or biological agent to which a worker may be exposed in any 15 minute period, provided the TWA is not exceeded
TWA	Time Weighted Average – generally referred to WES averaged over typical work day (usually 8 hours)
UEL	Upper Explosive Limit
UN Number	United Nations Number
WES	Workplace Exposure Standard - The airborne concentration of a biological or chemical agent to which a worker may be exposed during work hours (usually 8 hours, 5 days a week). The WES relates to exposure that has been measured by personal monitoring using procedures that gather air samples in the worker's breathing zone.

References

Data	Unless otherwise stated comes from the EPA HSNO chemical classification information database (CCID).
Controls	EPA notices, www.epa.govt.nz , Health and Safety at Work (Hazardous Substances) Regulations 2017, www.legislation.govt.nz
WES	The latest NZ Workplace Exposure Standards, published by WorkSafe NZ and available on their web site – www.worksafe.govt.nz .
Other References:	Suppliers SDS

Review

Date	Reason for review
July 2022	Not applicable - New SDS

Disclaimer

This SDS was prepared by Datachem LTD and is based on our current state of knowledge, including information obtained from suppliers. The SDS is given in good faith and constitutes a guideline (not a guarantee of safety). The level of risk each substance poses is relevant to its properties (as summarised in the SDS) AND HOW THE SUBSTANCE IS USED. While guidelines are given for personal protective equipment, such precautions must be relevant to the use. The likely GHS 7 classifications for this SDS have been estimated based on general information from the supplier (e.g., hazard, toxicological). This SDS is copyright Datachem and must not be copied, edited or used for other than intended purpose. To contact the SDS author, email info@datachem.co.nz or phone: **+64 21 1040951**.

