



Dry Alum

Safety Data Sheet

Safety Data Sheet #: CHE-5002S
Revision Date: November 28, 2022

Version: 4.0

1. Identification

Product identifier

Product Identity

Dry Alum

Other means of identification

Aluminum Sulfate, Dry

Product Form

Solid

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

Alum is used as a coagulating agent in municipal and industrial water and wastewater treatment and as an additive in papermaking.

Restrictions on use:

For use in water treatment, refer to NSF dosage information.

Details of the supplier of the safety data sheet

Company Name

Chemtrade Logistics Inc. (Canada)
155 Gordon Baker Road Suite 300
Toronto, Ontario M2H 3N5

Chemtrade Logistics Inc. (US)
90 East Halsey Road, Suite 200
Parsippany, NJ 07054

Emergency

24 hour Emergency Telephone No.

Chemtrade Emergency Contact: (866) 416-4404
(Toronto)

CHEMTREC +1-800-424-9300

For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident, call CHEMTREC – Day or Night

Customer Service: Chemtrade Logistics Inc. (Canada) For SDS Info: (416) 496-5856
www.chemtradelogistics.com

2. Hazard(s) identification

Exposure may aggravate pre-existing eye, skin, or respiratory conditions.

Classification of the substance or mixture

Skin corrosion/irritation category 2; H315

Causes skin irritation.

Serious eye damage / eye irritation, category 2; H319

Causes serious eye irritation.

Specific target organ toxicity, Specific exposure category 3; H335

May cause respiratory irritation.

Aquatic toxicity (chronic), category 3; H412

Harmful to aquatic life with long lasting effects.

Label elements



Warning

- H315 Causes skin irritation.
- H319 Causes serious eye irritation.
- H335 May cause respiratory irritation.
- H412 Harmful to aquatic life with long lasting effects.

[Prevention]:

- P233 Keep container tightly closed.
- P261 Avoid breathing dust, fume, gas, mist, vapours, spray.
- P264 Wash thoroughly after handling.
- P271 Use only outdoors or in a well-ventilated area.
- P273 Avoid release to the environment.
- P280 Wear protective gloves, eye protection, face protection.

[Response]:

- P302+352 IF ON SKIN: Wash with plenty of soap and water.
- P304+340-GHS4 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.
- P312 Call a POISON CENTER, doctor or physician if you feel unwell.
- P332+313 IF SKIN IRRITATION OCCURS: Get medical advice or attention.
- P337+313 If eye irritation persists: Get medical advice or attention.
- P362+364 Take off contaminated clothing and wash it before reuse.

[Storage]:

- P403+233 Store in a well ventilated place. Keep container tightly closed.
- P405 Store locked up.

[Disposal]:

- P501 Dispose of contents or container in accordance with local and national regulations.

3. Composition/information on ingredients

This product contains the following substances that present a hazard within the meaning of the Hazardous Products Regulations.

Ingredient/Chemical Designations	Weight %	GHS Classification	Notes
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ALUMINIUM SULFATE TETRADECAHYDRATE CAS Number: 0016828-12-9 Synonyms: ALUMINIUM SULFATE TETRADECAHYDRATE	100	Skin corrosion/irritation category 2;H315 Serious eye damage / eye irritation, category 2;H319 Specific target organ toxicity, Specific exposure category 3;H335 Aquatic toxicity (chronic), category 3;H412	No data available
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The actual concentration or concentration range is withheld as a trade secret.

*PBT/vPvB - PBT-substance or vPvB-substance.

The full texts of the phrases are shown in Section 16.

The specific chemical identity and/or exact percentage of composition have been withheld as a trade secret within the meaning of the OSHA Hazard Communication Standard [29 CFR 1910.1200].

Section 4. First aid measures

Description of first aid measures

General

In all cases of doubt, or when symptoms persist, seek medical attention.
Never give anything by mouth to an unconscious person.

Inhalation

Remove to fresh air, keep patient warm and at rest. If unconscious, place in the recovery position and obtain immediate medical attention. Give nothing by mouth.

Eyes

Irrigate copiously with clean water for at least 30 minutes, holding the eyelids apart and seek medical attention. Remove contact lenses, if present and easy to do.
Continue rinsing.

Skin

Remove contaminated clothing. Wash skin thoroughly with soap and water or use a recognized skin cleanser. Drench affected area with water for at least 30 minutes.
Obtain medical attention if irritation develops or persists.

Ingestion

If swallowed obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

Most important symptoms and effects, both acute and delayed

Overview

Contact with eyes causes serious eye irritation. Contact with skin causes irritation.
May cause respiratory irritation. "

Acute Health Effects : the substance causes serious eye irritation. Causes skin irritation. May cause respiratory irritation.

EYE: Contact causes severe irritation with redness and swelling of the conjunctiva. (IMMEDIATE)

SKIN: Skin contact causes redness, pain, swelling, itching, burning, dryness, and dermatitis. (IMMEDIATE)

INHALATION: Irritation of the respiratory tract and the other mucous membranes.(IMMEDIATE)

INGESTION: Ingestion may cause adverse effects. (IMMEDIATE)

Indication of Any Immediate Medical Attention and Special Treatment Needed: If exposed or concerned, get medical advice and attention.

See section 2 for further details.

Inhalation

May cause respiratory irritation.

Eyes	Causes serious eye irritation.
Skin	Causes skin irritation.
Chronic effects	Not available, none known.

Section 5. Fire-fighting measures

Extinguishing media

Suitable Extinguishing Media: Water spray, dry chemical, foam, carbon dioxide.

Unsuitable extinguishing media: Do not use water jet, or heavy water stream. Use of heavy stream of water may spread fire.

Special hazards arising from the substance or mixture

Hazardous decomposition: Forms aluminum oxide, sulfur dioxide and/or sulfur trioxide at temperatures above 760°C (1400°F) or when dry alum is encompassed in a fire involving other burning materials. The decomposition products are corrosive and hazardous to health.

Keep container tightly closed.

Avoid breathing dust, fume, gas, mist, vapours, spray.

Advice for fire-fighters

As with all fires, wear positive pressure, self-contained breathing apparatus, (SCBA) with a full face piece and protective clothing. Persons without respiratory protection should leave area. Wear SCBA during clean-up immediately after fire. No smoking.

Fire Hazard: Not considered flammable but may burn at high temperatures.

Explosion Hazard: Product is not explosive.

Firefighting Instructions: Do not enter fire area without proper protective equipment, including respiratory protection. Use water spray or fog for cooling exposed containers. **Exercise caution when fighting any chemical fire.**

Hazardous reactions will not occur under normal conditions.

Other Information: Do not allow run-off from firefighting to enter drains or water courses.

ERG Guide No. ----

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

General Measures: Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid contact with eyes, skin and clothing. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment. See Section 8.

Use good personal hygiene practices. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Promptly remove soiled clothing and wash thoroughly before reuse.

Use only outdoors or in a well-ventilated area. Do not breathe mist, spray, and vapours.

Do not get in eyes, on skin, or on clothing. Use appropriate personal protection equipment (PPE). Wear protective gloves, eye protection, face protection (refer to section 8 for more details).

Environmental precautions

Prevent entry to sewers and public waters. Avoid release to environment.

See Section 8 for exposure controls and personal protection and Section 13 for disposal considerations.

Methods and material for containment and cleaning up

Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit.

Ventilate area.

Methods for Clean up: Clean up spills immediately and dispose of waste safely. Transfer spilled material to a suitable container for disposal. Contact competent authorities after a spill.

Containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. As an immediate precautionary measure, isolate spill or leak area in all directions. Ventilate area. Equip cleanup crew with proper protection.

Section 7. Handling and storage

Precautions for safe handling

Handle containers carefully to prevent damage and spillage.

Store locked up.

Use good personal hygiene practices. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Promptly remove soiled clothing and wash thoroughly before reuse.

Use only outdoors or in a well-ventilated area. Do not breathe mist, spray, and vapours.

Do not get in eyes, on skin, or on clothing. Use appropriate personal protection equipment (PPE). Wear protective gloves, eye protection, face protection (refer to section 8 for more details).

See section 2 for further details. - [Prevention]:

Conditions for safe storage, including any incompatibilities

Store in a dry, cool and well-ventilated place. Containers which are opened should be properly resealed and kept upright to prevent leakage. Keep container closed when not in use. Store in a dry, cool place.

Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials.

Comply with applicable regulations.

Incompatible materials: Non acid-proof metals (such as aluminum, copper and iron), bases, unalloyed steel, galvanized surfaces.

See section 2 for further details. - [Storage]:

Specific end use(s)

Alum is used as a coagulating agent in municipal and industrial water and wastewater treatment and as an additive in papermaking.

Restrictions on use:

For use in water treatment, refer to NSF dosage information.

Section 8. Exposure controls / personal protection

Control parameters

Exposure

CAS No.	Ingredient	Source	Value
0016828-12-9	ALUMINIUM SULFATE TETRADECAHYDRATE	ACGIH	No Established Limit

	OSHA	No Established Limit
	NIOSH	No Established Limit
	Alberta	No Established Limit
	British Columbia	No Established Limit
	Manitoba	No Established Limit
	New Brunswick	No Established Limit
	Newfoundland and Labrador	No Established Limit
	Nova Scotia	No Established Limit
	Northwest Territories	No Established Limit
	Nunavut	No Established Limit
	Ontario	No Established Limit
	Prince Edward Island	No Established Limit
	Quebec	No Established Limit
	Saskatchewan	No Established Limit
	Yukon	No Established Limit

The exposure limits for nuisance dust are: OSHA PEL: 15 mg/m³ (50 mppcf*) TWA, ACGIH 10 mg/m³.

Exposure controls

Respiratory

If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn. In case of inadequate ventilation, oxygen deficient atmosphere, or where exposure levels are not known wear approved respiratory protection.



Eyes

Chemical safety goggles

Skin

Avoid skin contact. Wear protective gloves. Wear suitable protective clothing.

Materials for Protective Clothing: Chemically resistant materials and fabrics.

Engineering Controls

Exposure Controls Appropriate Engineering Controls: Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed.

Other Work Practices

Put on appropriate personal protective equipment. Chemically compatible gloves, protective clothing, and chemical resistant safety goggles. Use good personal hygiene practices. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Promptly remove soiled clothing and wash thoroughly before reuse.

Use only outdoors or in a well-ventilated area. Do not breathe mist, spray, and vapours.

Do not get in eyes, on skin, or on clothing. Use appropriate personal protection equipment (PPE). Wear protective gloves, eye protection, face protection (refer to section 8 for more details).

See section 2 for further details.

Section 9. Physical and chemical properties

Appearance	White to off-white powder, granules solid
Odor	Odourless
Odor threshold	Not Applicable
pH	3.5 @ 1% solution
Melting point point	86 °C (186.8°F)
Initial boiling point	117 °C (242.6°F)
Flash Point	°F °C, Test method: (Open/Close cup)
Evapouration rate (Ether = 1)	No available information
Flammability (solid, gas)	Not applicable
Upper/lower flammability or explosive limits	Lower Explosive Limit: No available information Upper Explosive Limit: No available information
Vapour pressure (Pa)	No available information
Vapour Density	No available information
Relative Density	No available information
Solubility in Water	Completely Soluble in water.
Partition coefficient n-octanol/water (Log Kow)	No available information
Auto-ignition temperature	No available information
Decomposition temperature	No available information
Viscosity (cSt)	No available information
Other information	No other relevant information.

Section 10. Stability and reactivity**Reactivity**

Hazardous reactions will not occur under normal conditions

Chemical stability

Stable under recommended handling and storage conditions (see section 7).

Possibility of hazardous reactions

Hazardous polymerization will not occur.

Conditions to avoid

Direct sunlight, extremely high or low temperatures, and incompatible materials.

Incompatible materials

Non acid-proof metals (such as aluminum, copper and iron), bases, unalloyed steel, galvanized surfaces.

Hazardous decomposition products

Forms aluminum oxide, sulfur dioxide and/or sulfur trioxide at temperatures above 760°C (1400°F) or when dry alum is encompassed in a fire involving other burning materials. The decomposition products are corrosive and hazardous to health.

Section 11. Toxicological information**Acute toxicity**

Ingestion of large amounts of aluminum salts over a prolonged period may cause phosphate deficiency, based on animal and human information (Krueger, G.L., et al. The health effects of aluminum compounds in mammals. CRC Critical reviews in Toxicology. Vol. 13, vo1 (1984). Prolonged ingestion in high doses (several grams per day) may result in osteomalacia (softening and bending of the bones) (Elinder, C.-G., et al. Aluminum. In: Handbook on the toxicology of metals. 2nd ed. Vol.II:Specific Metals (1986). There are no reports of these effects from occupational exposures to aluminum salts.

Note: When no route specific LD50 data is available for an acute toxin, the converted acute toxicity point estimate was used in the calculation of the product's ATE (Acute Toxicity Estimate).

	Oral LD50, mg/kg	Skin LD50, mg/kg	Inhalation vapour LC50, mg/L/4hr	Inhalation Dust/Mist LC50, mg/L/4hr	Inhalation Gas LC50, ppm
Product Acute Toxicity Estimates	NA	NA	NA	NA	NA

Ingredient	Oral LD50, mg/kg	Skin LD50, mg/kg	Inhalation vapour LC50, mg/L/4hr	Inhalation Dust/Mist LC50, mg/L/4hr	Inhalation Gas LC50, ppm
ALUMINIUM SULFATE TETRADECAHYDRATE - (16828-12-9)	No data available	No data available	No data available	No data available	No data available

Carcinogen Data

CAS No.	Ingredient	Source	Value
0016828-12-9	ALUMINIUM SULFATE TETRADECAHYDRATE	IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
		ACGIH	No Established Limit

Classification	Category	Hazard Description
Acute toxicity (oral)	---	Not Applicable
Acute toxicity (dermal)	---	Not Applicable
Acute toxicity (inhalation)	---	Not Applicable
Skin corrosion/irritation	2	Causes skin irritation.
Serious eye damage/irritation	2	Causes serious eye irritation.
Respiratory sensitization	---	Not Applicable
Skin sensitization	---	Not Applicable
Germ cell mutagenicity	---	Not Applicable
Carcinogenicity	---	Not Applicable
Reproductive toxicity	---	Not Applicable
STOT-single exposure	3	May cause respiratory irritation.
STOT-repeated exposure	---	Not Applicable
Aspiration hazard	---	Not Applicable

Possible routes of entry:

Symptoms and effects, both acute and delayed:

Contact with eyes causes serious eye irritation. Contact with skin causes irritation. May cause respiratory irritation. "

Acute Health Effects : the substance causes serious eye irritation. Causes skin irritation. May cause respiratory irritation.

EYE: Contact causes severe irritation with redness and swelling of the conjunctiva. (IMMEDIATE)

SKIN: Skin contact causes redness, pain, swelling, itching, burning, dryness, and dermatitis. (IMMEDIATE)
INHALATION: Irritation of the respiratory tract and the other mucous membranes. (IMMEDIATE)
INGESTION: Ingestion may cause adverse effects. (IMMEDIATE)

"

Indication of Any Immediate Medical Attention and Special Treatment Needed: If exposed or concerned, get medical advice and attention.

Most likely route(s) of exposure Skin, Eyes

Inhalation May cause respiratory irritation.

Eyes Causes serious eye irritation.

Skin Causes skin irritation.

Chronic effects Not available, none known.

Section 12. Ecological information

Toxicity

Harmful to aquatic life with long lasting effects.

No additional information provided for this product. See Section 3 for chemical specific data.

Aquatic Ecotoxicity

Ingredient	96 hr LC50 fish, mg/l	48 hr EC50 crustacea, mg/l	ErC50 algae, mg/l
ALUMINIUM SULFATE TETRADECAHYDRATE - (16828-12-9)	Not Available	Not Available	Not Available

Persistence and degradability

There is no data available on the preparation itself.

Bioaccumulative potential

No available information

Mobility in soil

No available information

Results of PBT and vPvB assessment

This product contains no PBT/vPvB chemicals.

Other adverse effects

No available information

Section 13. Disposal considerations

Waste treatment methods

Dispose of waste material in accordance with all local, regional, federal, provincial, state, territorial and international regulations.

Ecology - Waste Materials: Avoid release to the environment. This material is hazardous to the aquatic environment. Keep out of sewers and waterways.

Additional Information: Container may remain hazardous when empty. Continue to observe all precautions.

Section 14. Transport information

Classification Method: Classified as per Part 2, Sections 2.1 - 2.8 of the Transportation of Dangerous Goods Regulations.

	DOT / TDG (Domestic Surface Transportation)	IMO / IMDG (Ocean Transportation)	ICAO/IATA
UN number	Not Regulated	Not Regulated	Not Regulated
UN proper shipping name	Not Regulated	Not Regulated	Not Regulated
Transport hazard class(es)	TDG Hazard Class: Not Applicable Sub Class: Not Applicable	IMDG: Not Applicable Sub Class: Not Applicable	Air Class: Not Applicable Sub Class: Not Applicable
Packing group	Not Applicable	Not Applicable	Not Applicable
Environmental hazards	Marine Pollutant: No;		
Special precautions for user	No available information		

Section 15. Regulatory information

Regulatory Overview The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented.

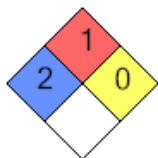
NFPA Ranking

Health (blue) :2

Fire (red) :1

Reactivity (yellow) :0

Special (white) :--



This product has been classified in accordance with the hazard criteria Hazardous Products Regulations (SOR/2015-17) and the SDS contains all of the information required by those regulations.

Toxic Substance Control Act (TSCA):

EPCRA 311/312 Chemicals and RQs:

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Canadian Domestic Substance List (DSL):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Canadian Non-Domestic Substance List (NDSL):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

New Jersey RTK Substances (>1%) :

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Pennsylvania RTK Substances (>1%) :

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 - Carcinogens (>0.0%):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 - Developmental Toxins (>0.0%):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 - Female Repro Toxins (>0.0%):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 - Male Repro Toxins (>0.0%):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 Label Warning:

This product contains no chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

Chemical Name (CAS Number)	US TSCA	Australia AICS	Korea ECL	EU EINECS	EU ELINCS	EU SVHC	EN NLP	Mexico INSQ
ALUMINIUM SULFATE TETRADECAHYDRATE (0016828-12-9)	No	No	No	No	No	No	No	No

Chemical Name (CAS Number)	China IECSC	Japan ENCS	Japan ISHL	Japan PDSCL	Japan PRTR 1	Japan PRTR 2	Philippines PICCS	New Zealand NZIOC
ALUMINIUM SULFATE TETRADECAHYDRATE (0016828-12-9)	No	No	No	No	No	No	Yes	Yes

Section 16. Other information

Revision Date 11/28/2022

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

The full text of the phrases appearing in section 3 is:
H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

H412 Harmful to aquatic life with long lasting effects.

Disclaimer: The information presented herein is supplied as a guide to those who handle or use this product. Safe work practices must be employed when working with any materials. It is important that the end user makes a determination regarding the adequacy of the safety procedures employed during the use of this product.

Revision Summary

Section :	Modification
1	Updated language
2	updated hazard classification, expanded language
4	Updated language
5	Updated language
6	Updated language
7	Updated language
8	Updated language
9	Updated language and data
11	Updated language
12	Updated language
13	Updated language
14	Updated language
15	Updated language

Handle product with due care and avoid unnecessary contact. This information is supplied under U.S. OSHA'S "Right to Know" (29 CFR 1910.1200) and Canada's WHMIS regulations. Although certain hazards are described herein, we cannot guarantee these are the only hazards that exist. The information contained herein is based on data available to us and is believed to be true and accurate but it is not offered as a product specification. No warranty, expressed or implied, regarding the accuracy of this data, the hazards connected with the use of the product, or the results to be obtained from the use thereof, is made and Chemtrade and its affiliates assume no responsibility. Chemtrade is a member of the CIAC (Chemistry Industry Association of Canada) and adheres to the codes and principles of Responsible Care™.



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