

Safety Data Sheet acc. to OSHA HCS

Printing date 04/07/2023

Reviewed on 04/07/2023

1 Identification

- **Product identifier**
- **Formule moléculaire** $AlN_3O_9 \cdot 9H_2O$
- **Trade name:** Aluminium nitrate
- **Article number:** CH1066
- **CAS Number:**
7784-27-2
- **EC number:**
236-751-8
- **Application of the substance / the mixture** Chemicals products for laboratory
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
CARLO ERBA REAGENTS
Chaussée du Vexin
Parc d'Affaires des Portes - BP616
27106 VAL DE REUIL Cedex
Téléphone: +33 (0)2 32 09 20 00
Télécopie: +33 (0)2 32 09 20 20
- **Information department:**
Q.A / Normative
email: MSDS_CER-SDS@cer.dgroup.it
- **Emergency telephone number:**
US 911
CHEMTREC 1-800-424-9300 (Staffed 24/7)
American Association of Poison Control Centers 1-800-222-1222 (Staffed 24/7)

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS03 Flame over circle

May intensify fire; oxidizer.



GHS07

Causes skin irritation.

Causes serious eye irritation.

- **Label elements**

- **GHS label elements**

The substance is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms**



GHS03 GHS07

- **Signal word** *Danger*

- **Hazard statements**

May intensify fire; oxidizer.

Causes skin irritation.

(Contd. on page 2)

Safety Data Sheet

acc. to OSHA HCS

Printing date 04/07/2023

Reviewed on 04/07/2023

Trade name: Aluminium nitrate

(Contd. of page 1)

Causes serious eye irritation.

· **Precautionary statements**

Keep away from heat.

Take any precaution to avoid mixing with combustibles.

Wear protective gloves / eye protection / face protection.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

If skin irritation occurs: Get medical advice/attention.

If eye irritation persists: Get medical advice/attention.

· **Classification system:**

· **NFPA ratings (scale 0-4)**



Health = 2

Fire = 3

Reactivity = 0

The substance possesses oxidizing properties.

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

3 Composition/information on ingredients

· **Chemical characterization: Substances**

· **CAS No. Description**

CAS: 7784-27-2 Aluminium nitrate nonahydrate

· **Identification number(s)**

· **EC number:** 236-751-8

4 First-aid measures

· **Description of first aid measures**

· **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.

· **After skin contact:**

Immediately wash with water and soap and rinse thoroughly.

If skin irritation continues, consult a doctor.

· **After eye contact:**

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

Seek immediate medical advice.

· **After swallowing:**

Rinse out mouth and then drink plenty of water.

If symptoms persist consult doctor.

· **Information for doctor:** Show the doctor this Material Safety Data Sheet.

· **Most important symptoms and effects, both acute and delayed** No further relevant information available.

· **Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

US

(Contd. on page 3)

Safety Data Sheet

acc. to OSHA HCS

Printing date 04/07/2023

Reviewed on 04/07/2023

Trade name: Aluminium nitrate

(Contd. of page 2)

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
Use fire fighting measures that suit the environment.
- **Special hazards arising from the substance or mixture**
In case of fire, the following can be released:
Nitrogen oxides (NO_x)
In the absence of oxygen: Ammonia (NH₃).
- **Advice for firefighters**
- **Protective equipment:** Do not inhale explosion gases or combustion gases.
- **Additional information** Cool endangered receptacles with water spray.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Avoid formation of dust.
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
Ensure adequate ventilation
- **Environmental precautions:**
Do not allow to penetrate the ground/soil.
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Pick up mechanically.
Provide suction extractors if dust is formed.
- **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.
- **Protective Action Criteria for Chemicals**
- **PAC-1:** 83 mg/m³
- **PAC-2:** 920 mg/m³
- **PAC-3:** 5,500 mg/m³

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of dust.
Provide suction extractors if dust is formed.
- **Information about protection against explosions and fires:**
The product is not flammable.
Potentially explosive when mixed with organic substances.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**
Use only receptacles specifically permitted for this substance/product.
- **Information about storage in one common storage facility:** Store away from flammable substances.
- **Further information about storage conditions:** None.

(Contd. on page 4)

Safety Data Sheet

acc. to OSHA HCS

Printing date 04/07/2023

Reviewed on 04/07/2023

Trade name: Aluminium nitrate

· **Specific end use(s)** No further relevant information available.

(Contd. of page 3)

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see section 7.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
*The usual precautionary measures for handling chemicals should be followed.
 Keep away from foodstuffs, beverages and feed.
 Immediately remove all soiled and contaminated clothing.
 Avoid contact with the eyes and skin.*
- **Breathing equipment:** Use suitable respiratory protective device only when aerosol or mist is formed.
- **Protection of hands:**
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation



Protective gloves

Rubber gloves

- **Material of gloves**
*The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
 Rubber gloves
 PVC or PE gloves*
- **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:**



Tightly sealed goggles

- **Limitation and supervision of exposure into the environment**
In case of unintended release of the product: See section 6 of the Safety Data Sheet.

9 Physical and chemical properties

- **Information on basic physical and chemical properties**
- **General Information** 375.13 g
- **Appearance:**
- **Form:** Granulate
- **Color:** White
- **Odor:** Odorless
- **Odor threshold:** Not determined.

(Contd. on page 5)

Safety Data Sheet

acc. to OSHA HCS

Printing date 04/07/2023

Reviewed on 04/07/2023

Trade name: Aluminium nitrate

(Contd. of page 4)

· pH-value:	Not applicable.
· Change in condition	
Melting point/Melting range:	73 °C (163.4 °F)
Boiling point/Boiling range:	Undetermined.
· Flash point:	Not applicable.
· Flammability (solid, gaseous):	Contact with combustible material may cause fire.
· Decomposition temperature:	Not determined.
· Ignition temperature:	Not determined.
· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
· Vapor pressure:	Not applicable.
· Density:	Not determined.
· Relative density	Not determined.
· Vapor density	Not applicable.
· Evaporation rate	Not applicable.
· Solubility in / Miscibility with	
Water at 20 °C (68 °F):	418 g/l
· organic solvents:	Insoluble
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
Dynamic:	Not applicable.
Kinematic:	Not applicable.
· Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity** See 10.3
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions**
Reacts with powdered metals.
May react dangerously with reducing or flammable substances in bulk.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:**
Nitrogen oxides
Nitrogen oxides (NO_x)
Aluminum Oxide

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

Oral	LD50	3,263 mg/kg (rat) (OECD 401)
Dermal	LD50	>5,000 mg/kg (rabbit)

(Contd. on page 6)

US

Safety Data Sheet

acc. to OSHA HCS

Printing date 04/07/2023

Reviewed on 04/07/2023

Trade name: Aluminium nitrate

(Contd. of page 5)

- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:**
Strong irritant with the danger of severe eye injury.
Irritating effect.
Causes serious eye irritation.
- **Sensitization:** No sensitizing effects known.
- **Other information (about experimental toxicology):** No further relevant information available.
- **Additional toxicological information:**
- **Carcinogenic categories**
- **IARC (International Agency for Research on Cancer)** Substance is not listed.
- **NTP (National Toxicology Program)** Substance is not listed.
- **OSHA-Ca (Occupational Safety & Health Administration)** Substance is not listed.

12 Ecological information

- **Toxicity**

- **Aquatic toxicity:**

NOEC	0.013 mg/L (fishes)
EC50	0.21 mg/L (algae) (OECD 201)
LC50/96h	>0.105 mg/l (fishes) (OECD 203)
LC50	0.33 mg/l (Daphnia) (48h, OECD 202)

- **Persistence and degradability** No further relevant information available.
- **Other information:** No available data.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
Not known to be hazardous to water.
Water hazard class 1 (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Contact waste processors for recycling information.
- **Uncleaned packagings:**
- **Recommendation:**
Disposal must be made according to official regulations.
Packagings that cannot be cleansed are to be disposed of in the same manner as the product.

(Contd. on page 7)

Safety Data Sheet

acc. to OSHA HCS

Printing date 04/07/2023



Reviewed on 04/07/2023

Trade name: Aluminium nitrate

Chemical treatment of contaminated water.

(Contd. of page 6)

14 Transport information

<ul style="list-style-type: none"> · UN-Number · DOT, IMDG, IATA 	<p style="text-align: right;">UN1438</p>
<ul style="list-style-type: none"> · UN proper shipping name · DOT · IMDG · IATA 	<p style="text-align: right;">Aluminum nitrate ALUMINIUM NITRATE Aluminium nitrate</p>
<ul style="list-style-type: none"> · Transport hazard class(es) · DOT 	<div style="text-align: right;">  <p>5.1 Oxidizing substances</p> </div>
<ul style="list-style-type: none"> · Class · Label 	<p style="text-align: right;">5.1 5.1</p>
<ul style="list-style-type: none"> · IMDG, IATA 	<div style="text-align: right;">  <p>5.1 Oxidizing substances</p> </div>
<ul style="list-style-type: none"> · Class · Label 	<p style="text-align: right;">5.1 5.1</p>
<ul style="list-style-type: none"> · Packing group · DOT, IMDG, IATA 	<p style="text-align: right;">III</p>
<ul style="list-style-type: none"> · Environmental hazards: · Marine pollutant: 	<p style="text-align: right;">No</p>
<ul style="list-style-type: none"> · Special precautions for user · Hazard identification number (Kemler code): · EMS Number: · Stowage Category 	<p style="text-align: right;">Warning: Oxidizing substances 50 F-A,S-Q A</p>
<ul style="list-style-type: none"> · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code 	<p style="text-align: right;">Not applicable.</p>
<ul style="list-style-type: none"> · UN "Model Regulation": 	<p style="text-align: right;">UN 1438 ALUMINIUM NITRATE, 5.1, III</p>

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **SARA Section 355 (extremely hazardous substances)** Substance is not listed.
- **SARA Section 313 (specific toxic chemical listings)** Substance is listed.
- **TSCA (Toxic Substances Control Act)** Substance is not listed.
- **Hazardous Air Pollutants** Substance is not listed.
- **Prop 65 - Chemicals known to cause cancer** Substance is not listed.

(Contd. on page 8)

Safety Data Sheet

acc. to OSHA HCS

Printing date 04/07/2023

Reviewed on 04/07/2023

Trade name: Aluminium nitrate

(Contd. of page 7)

- **Carcinogenicity categories**
- **EPA (Environmental Protection Agency)** Substance is not listed.
- **TLV (Threshold Limit Value)** Substance is not listed.
- **MAK (German Maximum Workplace Concentration)** Substance is not listed.
- **NIOSH-Ca (National Institute for Occupational Safety and Health)** Substance is not listed.
- **National regulations:**
- **Water hazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Department issuing SDS:** Q.A / Normative
- **Date of preparation / last revision** 04/07/2023
- **Abbreviations and acronyms:**
 - RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
 - ICAO: International Civil Aviation Organisation
 - ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
 - IMDG: International Maritime Code for Dangerous Goods
 - DOT: US Department of Transportation
 - IATA: International Air Transport Association
 - EINECS: European Inventory of Existing Commercial Chemical Substances
 - CAS: Chemical Abstracts Service (division of the American Chemical Society)
 - NFPA: National Fire Protection Association (USA)
 - LC50: Lethal concentration, 50 percent
 - LD50: Lethal dose, 50 percent
 - PBT: Persistent, Bioaccumulative and Toxic
 - vPvB: very Persistent and very Bioaccumulative
 - NIOSH: National Institute for Occupational Safety
 - OSHA: Occupational Safety & Health
 - TLV: Threshold Limit Value
 - PEL: Permissible Exposure Limit
 - REL: Recommended Exposure Limit
 - IMO: International Maritime Organization
 - Oxidizing Solids 2: Oxidizing solids – Category 2
 - Skin Irritation 2: Skin corrosion/irritation – Category 2
 - Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A
- **Sources**
 - Globally Harmonized System, GHS
 - ADR/RID, IMDG, IATA
 - PubChem : an open chemistry database at the National Institutes of Health (NIH)
 - ECHA : European Chemicals Agency
- *** Data compared to the previous version altered. .**