

ALUMINUM SULFATE SOLUTION

According to ABNT NBR 14725:2023

Revision date: February 25, 2025

Version: 00

Section 1. Identification

Product name: Aluminum Sulfate Solution
Synonyms: Liquid aluminum sulfate
Identified uses: Chemical raw material
Company: Distribuidora Industrial Paranaense Ltda.
Address: Rua Stefano Soik, n.º 20, CIC, CEP 81.420-586 - Curitiba - PR
Telephone: +55 41 3245-0777
Emergency telephone number:
Disque-Intoxicação (Anvisa) 0800-722-6001
Fax: +55 41 3245-0777
e-mail: dipa@dipaquimica.com.br

Section 2. Hazard Identification

2.1. Classification of the substance or mixture:

GHS Classification in accordance with ABNT NBR 14725 Standard

Corrosive to metals – Category 1

Acute toxicity - Oral – Category 5

Acute toxicity - Dermal – Category 5

Skin corrosion/irritation – Category 3

Serious eye damage/eye irritation – Category 2B

Hazardous to the aquatic environment - Short-Term (acute) – Category 3

2.2. Other hazards:

No additional information available.

2.3. Label elements:

Hazard pictograms:



Signal word: WARNING

Hazard statements:

H290 - May be corrosive to metals.

H303 - May be harmful if swallowed.

H313 - May be harmful in contact with skin.

H316 - Causes mild skin irritation.

H320 - Causes eye irritation.

H402 - Harmful to aquatic life.

Precautionary statements:

Prevention:

P234 - Keep only in original packaging.

ALUMINUM SULFATE SOLUTION

According to ABNT NBR 14725:2023

Revision date: February 25, 2025

Version: 00

P264 + P265 - Wash hands thoroughly after handling. Do not touch eyes.

P273 - Avoid release to the environment.

Response:

P301 + P317 - IF SWALLOWED: Get medical help.

P302 + P312 - IF ON SKIN: Get medical help.

P332 + P317 - If skin irritation occurs: Get medical help.

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 + P317 - If eye irritation persists: Get medical help.

P390 - Absorb spillage to prevent material-damage.

Storage:

P406 - Store in a corrosion resistant container with a resistant inner liner.

Disposal:

P501 - Dispose of contents/container in accordance with local regulations.

Section 3. Composition/Information on Ingredients

- 3.1. Substance / Mixture:** Mixture
Common chemical name: Aluminum Sulfate Solution
Synonyms: Liquid aluminum sulfate

3.2. Components:

Substance name	CAS number	Concentration
Aluminum sulfate	10043-01-3	≥ 48%
Sulfuric acid (residual)	7664-93-4	≤ 0,99%

Section 4. First-Aid Measures**4.1. Description of necessary first-aid measures:****If swallowed:**

Do not induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Get medical help.

If on skin:

Take off immediately all contaminated clothing. Immediately rinse with water for several minutes. If skin irritation occurs, get medical help.

If inhaled:

Remove person to fresh air and keep comfortable for breathing. Get medical help if irritation, dyspnoea or other symptoms persist.

If in eyes:

Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. No neutralization should be performed in any case! If eye irritation persists, get medical help.

4.2. Most important symptoms/effects, acute and delayed:**If swallowed:**

Corrosion of the digestion system can occur.

If on skin:

Causes mild skin irritation.

If inhaled:

Inhaling vapours can cause corrosion of the breathing system.

If in eyes:

Causes eye irritation.

4.3. Indication of immediate medical attention and special treatment needed, if necessary:

Avoid contact with the product when assisting the victim. If necessary, symptomatic treatment should primarily include supportive measures such as correction of hydroelectrolytic and metabolic disturbances, as well as respiratory assistance. In case of skin contact, do not rub the affected area.

Section 5. Fire-Fighting Measures

5.1. Extinguishing media:

Appropriate:

Alcohol-resistant foam, water mist, dry chemicals and carbon dioxide (CO₂).

Inappropriate:

Solid water stream.

5.2. Specific hazards arising from the chemical:

In case of fire, toxic incineration products may be released such as carbon monoxide and carbon dioxide. Inhalation of hazardous degradation (pyrolysis) products may cause serious health damage.

5.3. Special protective actions for fire-fighters:

Use a self-contained breathing apparatus (SCBA) and full-body protective clothing. Keep containers cool with water spray. Do not allow run-off of contaminated fire extinguishing material to enter drains or surface and ground water.

Section 6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures:

For non-emergency personnel:

Preventively isolate from ignition sources. Do not smoke. Keep unauthorized persons away from the area. Stop the leak if it can be done without risk. Do not touch damaged containers or the material without appropriate protective clothing. Avoid eye and skin contact. Use personal protective equipment as described in Section 8.

For emergency responders:

Wear appropriate personal protective equipment, including full-vision safety goggles and face protection, PVC safety gloves, PVC apron, protective clothing against corrosive substances (PVC or equivalent material), and PVC boots. The materials used must be impermeable. In case of a leak with significant exposure, the use of a respiratory protection mask (full-face or half-face) with an acid gas filter, a full-face mask with an air supply line, or a self-contained breathing apparatus is recommended.

6.2. Environmental precautions:

Prevent product from entering drains, soil and waterways. Prevent further leakage or spillage if safe to do so. Notify the competent authorities if the product has run into drainage systems or watercourse or has contaminated the ground or vegetation.

ALUMINUM SULFATE SOLUTION

According to ABNT NBR 14725:2023

Revision date: February 25, 2025

Version: 00

6.3. Methods and materials for containment and cleaning up:

Use natural spill containment barriers. Collect the spilled product and place it in appropriate containers. Absorb the remaining product with dry sand, earth, vermiculite, or any other inert material. Place the absorbed material in appropriate containers and remove them to a safe location. For final disposal, proceed as per Section 13 of this SDS.

Section 7. Handling and Storage

7.1. Appropriate technical measures for handling:

Precautions for safe handling:

Handle in a well-ventilated area or with general ventilation/local exhaust system. Avoid exposure to the product. Avoid contact with incompatible materials. Use personal protective equipment as described in Section 8.

Hygiene measures:

Wash hands and face thoroughly after handling and before eating, drinking, smoking, or using the restroom. Contaminated clothing should be changed and washed before reuse. Remove contaminated clothing and protective equipment before entering eating areas.

7.2. Conditions for safe storage, including any incompatibilities:

Information about protection against explosion and fire:

No special measures required.

Appropriate conditions:

Store in tightly closed containers in cold, dry and well ventilated areas. Do not expose to sunlight. Ensure that the storage location has adequate moisture, pressure and temperature. Keep away from incompatible materials, as described in Section 10.

7.3. Packaging material:

Appropriate:

High density polyethylene. Coated steel with epoxy resin, zinc silicate resin, epoxy-phenolic coating, phenolic coating, polyester resin reinforced with fiber glass.

Inappropriate:

Aluminum, iron, zinc.

Section 8. Exposure Controls/Personal Protection

8.1. Control parameters:

Ingredients with workplace control parameters:

The mixture contains no substances for which occupational exposure limits are set.

Biological exposure indices:

Not established.

Other limits and values:

Not established.

8.2. Appropriate engineering controls:

Promote mechanical ventilation and direct exhaust system to the outside. These measures help reduce exposure to the product.

ALUMINUM SULFATE SOLUTION

According to ABNT NBR 14725:2023

Revision date: February 25, 2025

Version: 00

8.3. Individual protection measures, such as personal protective equipment (PPE):**Eye/face protection:**

Full-vision safety goggles.

Skin protection:

PVC safety gloves, PVC apron, appropriate protective clothing, and safety footwear.

Respiratory protection:

In case of exposure to high concentrations the vapors of the product use a respiratory protection mask (full-face or half-face) with an acid gas filter.

Thermal hazards:

Not required.

Section 9. Physical and Chemical Properties

9.1. Basic physical and Chemical properties:

Physical state:	Liquid
Color:	Limpid, colourless to light yellow
Odor:	Characteristic
pH:	0.5 - 1.5
Particle characteristics	Not applicable
Melting point/freezing point:	Not available
Boiling point or initial boiling point and boiling range:	101 °C
Flash point:	Not available
Flammability:	Not available
Lower and upper explosion limit/flammability limit:	Not available
Vapor pressure:	Not available
Relative vapor density:	Not available
Density:	1.280 - 1.330 g/cm ³
Solubility:	600 g/L in water at 20 °C
Partition coefficient n-octanol/water (log value):	Not available
Auto-ignition temperature:	Not available
Decomposition temperature:	Not available
Kinematic viscosity:	Not available

9.2. Other information:

Not available.

Section 10. Stability and Reactivity

10.1. Reactivity:

No hazardous reactivity is expected.

10.2. Chemical stability:

Stable under normal conditions of use and storage.

10.3. Possibility of hazardous reactions:

Dangerous reaction with explosive products, self-heating substances, organic peroxides, oxidizing agents, and alkalis.

10.4. Conditions to avoid:

The product is stable and no degradation occurs under normal use. Protect against flames, sparks, overheating and against frost.

10.5. Incompatible materials:

Explosive products, self-heating substances, organic peroxides, oxidizing agents, and alkalis. Avoid contact with metals such as aluminum alloys, copper, copper alloys and nickel.

10.6. Hazardous decomposition products:

Not developed under normal uses. Dangerous outcomes such as carbon monoxide and carbon dioxide are formed at high temperature and in fire.

Section 11. Toxicological Information

11.1. Acute toxicity:

Acute oral toxicity:

LD₅₀: > 2,000 mg/kg - rat.

Acute inhalation toxicity:

Based on available data the classification criteria are not met.

Acute dermal toxicity:

Based on available data the classification criteria are not met.

11.2. Skin corrosion/irritation:

Causes mild skin irritation.

11.3. Serious eye damage/irritation:

Causes eye irritation.

11.4. Respiratory or skin sensitization:

Based on available data the classification criteria are not met.

11.5. Germ cell mutagenicity:

Based on available data the classification criteria are not met.

11.6. Carcinogenicity:

Based on available data the classification criteria are not met.

11.7. Reproductive toxicity:

Based on available data the classification criteria are not met.

11.8. Toxicity for specific target organ – single exposure:

Based on available data the classification criteria are not met.

ALUMINUM SULFATE SOLUTION

According to ABNT NBR 14725:2023

Revision date: February 25, 2025

Version: 00

11.9. Toxicity for specific target organ – repeated exposure:

Based on available data the classification criteria are not met.

11.10. Aspiration hazard:

Based on available data the classification criteria are not met.

Section 12. Ecological Information

12.1. Toxicity:

Acute toxicity to fish:

EC₅₀ - 96 h: > 100 mg/L - *Danio rerio*

OECD Test Guideline 203.

12.2. Persistence and degradability:

No data available.

12.3. Bioaccumulative potential:

Bioconcentration potential in aquatic organisms is low.

12.4. Mobility in soil:

No data available.

12.5. Other adverse effects:

Liquid aluminum sulfate is hazardous. Its environmental impact is localized, affecting only the area near the spill. If it comes into contact with water bodies or lakes, it may lower the pH due to its acidic nature.

Section 13. Disposal Considerations

13.1. Disposal methods:

Product:

The preferred options for disposal include reuse, recycling, co-processing, finding a use for a byproduct, incineration or other thermal destruction process at licensed facilities. All procedures must follow specific operation standards in order to reduce health, safety and environmental risks. Perform co-processing, incineration or other thermal destruction process at facilities capable of minimizing or reducing air pollution emissions. The disposal must comply with federal, state, and local laws and regulations in accordance with the environmental agencies.

Waste from residues:

Any unused product should be put in labelled containers for waste collection and submitted for disposal. All procedures must follow specific operation standards in order to reduce health, safety and environmental risks. Perform co-processing, incineration or other thermal destruction process at facilities capable of minimizing or reducing air pollution emissions. The disposal must comply with federal, state, and local laws and regulations in accordance with the environmental agencies.

Contaminated packaging:

Do not cut or pierce the packaging, nor do hot work near them. Do not remove labels until the product has been fully removed and the packaging cleaned. All procedures must follow specific operation standards in order to reduce health, safety and environmental risks. Perform co-processing, incineration or other thermal destruction process at facilities capable of minimizing or reducing air pollution emissions. The disposal must comply with federal, state, and local laws and regulations in accordance with the environmental agencies.

ALUMINUM SULFATE SOLUTION

According to ABNT NBR 14725:2023

Revision date: February 25, 2025

Version: 00

Section 14. Transport Information

14.1. Regulations

Land transport:

Resolução nº 5998 de 3 de Novembro de 2022 da Agência Nacional de Transportes Terrestres (ANTT), *Atualiza o Regulamento para o Transporte Rodoviário de Produtos Perigosos, aprova suas Instruções Complementares, e dá outras providências.*

UN number:	1760
UN proper shipping name	LÍQUIDO CORROSIVO, N.E. (sulfato de alumínio, solução)
Hazard class:	8
Subsidiary hazard class:	N.A.
Hazard identification number:	80
Packing group:	III

Maritime Transport:

IMO - International Maritime Organization

IMGD - International Maritime Dangerous Goods Code

DPC - Diretoria de Portos e Costas (transport in brazilian waters)

Normas de Autoridade Marítima (NORMAM)

NORMAM 201/DPC: Embarcações Empregadas na Navegação em Mar Aberto

NORMAM 202/DPC: Embarcações Empregadas na Navegação Interior

NORMAM 321/DPC: Homologação de Material e Certificação de Laboratórios e Sistemas de Embarque

ANTAQ - Agência Nacional de Transportes Aquaviários

UN number:	1760
UN proper shipping name	CORROSIVE LIQUID, N.O.S. (aluminum sulfate, solution)
Hazard class:	8
Subsidiary hazard class:	N.A.
Packing group:	III
EmS:	F-A, S-B
Marine pollutant:	Yes

Air transport:

ICAO - International Civil Aviation Organization - Technical Instructions (TI) Doc 9284.

IATA - International Air Transport Association - Dangerous Goods Regulation (DGR).

ANAC - Agência Nacional de Aviação Civil - Resolução nº 129 de 8 de dezembro de 2009.

RBAC N° 175 - (Regulamento Brasileiro da Aviação Civil) - Transporte de Artigos Perigosos em Aeronaves Civis.

UN number:	1760
UN proper shipping name	CORROSIVE LIQUID, N.O.S. (aluminum sulfate, solution)
Hazard class:	8
Subsidiary hazard class:	N.A.
Packing group:	III
Environmentally hazardous:	Yes

ALUMINUM SULFATE SOLUTION

According to ABNT NBR 14725:2023

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Section 15. Regulatory Information

15.1. Specific regulation for the product:

Decreto Federal nº 10.088, de 5 de novembro de 2019 – Anexo LX.

Norma ABNT-NBR 14725.

Lei nº 12.305, de 02 de agosto de 2010 (Política Nacional de Resíduos Sólidos).

Decreto nº 10.936, de 12 de janeiro de 2022.

Portaria MTB nº 3.214, de 08 de junho de 1978 - Norma Regulamentadora nº 26.

Section 16. Other Information

In locations where chemical products are handled, monitoring of worker exposure should be conducted in accordance with the applicable Risk Management Program and international occupational safety guidelines. Employees who handle chemical products in general should undergo biological monitoring according to the Occupational Health and Safety Program or other applicable international standards.

The information and recommendations in this document were researched and compiled from reliable sources, the Safety Data Sheets (SDS) provided by suppliers, and applicable regulations for the product, in accordance with ABNT NBR 14725.

The data in this document refers to a specific product and may not be valid when this product is used in combination with others. DISTRIBUIDORA INDUSTRIAL PARANAENSE LTDA, based on the facts presented in this document, does not intend to establish absolute and definitive information about the product and its risks, but rather to provide guidance with information to protect its employees and clients, ensuring individual protection, continuity of operations, and environmental preservation.

16.1. Abbreviations and acronyms

ABNT-NBR	Associação Brasileira de Normas Técnicas - Norma Técnica Brasileira
CAS	Chemical Abstracts Service
DPC	Diretoria de Portos e Costas
EC₅₀	Half maximal Effective Concentration
EmS	Emergency Response Procedures for Ships Carrying Dangerous Goods
IATA-DGR	International Air Transport Association – Dangerous Goods Regulation
IMDG	International Maritime Dangerous Goods Code
IMO	International Maritime Organization
IS	Instrução Suplementar
LD₅₀	Median lethal dose
N.A.	Not applicable
N.E.	Não especificadas de outro modo
N.O.S.	Not otherwise specified
OECD	Organisation for Economic Co-operation and Development
UN	United Nations
PVC	Polyvinyl Chloride
RBAC	Regulamento Brasileiro da Aviação Civil