

**SAFETY DATA SHEET****Product:** AMMONIUM SULFATE - SULFAGEL GRAN / SULFAGEL F / SULFAGEL TECH

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**SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

Identification of the product	AMMONIUM SULFATE - SULFAGEL GRAN/ SULFAGEL F/ SULFAGEL TECH.
Recommended use of the chemical and restrictions on use	Industrial use.
Company	Proquigel Química S/A.
Address:	Rua Eteno, nº 2198 – Polo Industrial de Camaçari - Camaçari/BA, CEP: 42.816-200, Brazil.
Telephone number	55 (71) 3878-6633.
Emergency telephone number	0800 110 8270 Pró-Química.

**SECTION 2: HAZARDS IDENTIFICATION**

Classification of the substance or mixture	Acute toxicity – Oral – Category 5. Hazardous to the aquatic environment – short term (acute) – Category 3.
Classification system adopted	Globally Harmonized System of Classification and Labeling of Chemicals (GHS), United Nations, 2019.
Other hazards which do not result in classification	The product does not have other hazards.
Adequate labeling elements	
Pictograms	Not required.
Signal word	WARNING
Hazard statement(s)	H303 May be harmful if swallowed. H402 Harmful to aquatic life.
Precautionary statement(s)	<b>PREVENTION:</b> P273 Avoid release to the environment.

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**RESPONSE:**

P312 Call a POISON CENTER or a doctor, if you feel unwell.

**DISPOSAL:**

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

**SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS****SUBSTANCE**

Systematic chemical or trivial name	Ammonium sulfate.
Common or generic name	Diammonium sulphate.
CAS Number	7783-20-2.
Impurities and stabilizing additives contributing to the hazard	There are no impurities that contribute to the hazard.

**SECTION 4: FIRST-AID MEASURES****Exposure routes**

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell. Take this SDS.
Skin contact	Wash exposed skin with enough water to remove the material. In case of irritation: Consult a doctor. Take this SDS.
Eye contact:	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. If eye irritation persists: Get medical advice/attention. Take this SDS.
Ingestion	Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse the victim's mouth with water. Call a POISON CENTER or doctor/physician if you feel unwell. Take this SDS.
Most important symptoms/effects, acute and	May be harmful if swallowed.

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delayed

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

Avoid contact with the product to help the victim. Keep victim warm and quiet. Symptomatic treatment should comprise mainly supportive measures such as correction of electrolyte disturbances, metabolic, and respiratory support. In case of skin contact do not rub the affected site.

**SECTION 5: FIRE-FIGHTING MEASURES**

Extinguishing media

Suitable: Compatible with any extinguishing media.  
Not recommended: Water jets directly.

Specific hazards arising from the chemical

The combustion of the chemical products or containers may form toxic and irritant gases such as ammonia, sulfur, carbon monoxide and carbon dioxide.

Special protective actions for fire-fighters

Self-contained breathing apparatus (SCBA) with positive pressure and full protective clothing. Containers and tanks involved in the fire can be cooled by water fog.

**SECTION 6: ACCIDENTAL RELEASE MEASURES**

For non-emergency personnel

Isolate the leak sources of ignition, preventively. Stop leak if this can be done without risk. Do not smoke. Do not touch damaged containers or spilled material without the use of appropriate clothing. Avoid exposure to the product. Use personal protective equipment as described in Section 8.

For emergency responders

Wear full PPE with safety goggles, appropriate protective clothing, closed shoes, safety gloves. Respiratory protection masks with suitable filter.

Environmental precautions

Avoid that the spilled material reaches waterways or sewage system.

Methods and materials for containment and cleaning up

Collect the spilled product and place it in suitable containers. Absorb the remaining product with dry sand, earth, vermiculite, or any other inert material. Place the adsorbed material in suitable containers and take them to a safe place. For final destination, proceed in accordance with Section 13 of this SDS.

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**SECTION 7: HANDLING AND STORAGE**

## Precautions for safe handling

Safe handling of the substance or mixture	Handle in a well ventilated area or with general system of ventilation/local exhaust. Avoid dust formation. Avoid contact with incompatible materials. Use personal protective equipment as described in Section 8.
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General hygiene	Wash hands and face thoroughly after handling and before eating, drinking, smoking or going to the bathroom. Contaminated clothing should be changed and washed before reuse. Remove clothing and protective equipment contaminated before entering eating areas.
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## Conditions for safe storage, including any incompatibilities

Technical measures for prevention of fire and explosion	It is not expected that the product presents a fire or explosion hazard.
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Adequate conditions	Store the product in a cool, ventilated place. Keep container closed. Keep stored at room temperature. It is not necessary the addition of stabilizers and antioxidants to ensure the durability of the product. This product may react dangerously with some incompatible materials as highlighted in Section 10.
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Packaging compatibilities	Similar to the original packaging.
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**SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION**

## Control parameters

Occupational exposure limit	Not established.
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Biological limit	Not established.
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Other limits and values	Not established.
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Appropriate engineering controls	Promote direct mechanical ventilation and exhaust system to the outside environment. These measures help reduce exposure to product.
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Individual protection measures, such as personal protective equipment (PPE)

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Eye/face protection	Wear gloves resistant to natural rubber or nitrile chemicals.
Skin protection	Appropriate protective clothing, closed shoes, safety gloves.
Respiratory protection	In case of dust formation, use respiratory protection equipment against dust. Based on the inhalation hazard of the product, a risk assessment must be carried out to adequately define respiratory protection in view of the conditions of use of the product.
Thermal hazards	It is not necessary to use specific EPIs, since the product does not present thermal hazards.

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

Physical state	Solid in crystals or grains.
Colour	Colorless or dark brown.
Odour	Odourless.
Melting point/freezing point	No available.
Boiling point, initial boiling, and boiling range	No available.
Flammability	No available.
Lower and upper explosion limit /flammability limit	No available.
Flash point	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	> 235°C.
pH	5.5 (Aqueous solution 1.3%)
Kinematic viscosity	Not available.
Solubility	Soluble in water (754 g/L at 20°C).
Partition coefficient n-octanol/water (log value)	Log kow: 0,48.
Vapour pressure	Not available.

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Density and/or relative density	1.77 (water at 4°C=1) at 20°C.
Relative vapour density	Not available.
Particle characteristics	Not available.
Other information	Not applicable.

**SECTION 10: STABILITY AND REACTIVITY**

Reactivity and chemical stability	Product not reactive. The product is stable under normal conditions of storage and use.
Possibility of hazardous reactions	May react violently with strong oxidants, which may cause an explosion.
Conditions to avoid	High temperatures and contact with incompatible materials.
Incompatible materials	Oxidizing agents, potassium salts, nitrates, chloride, hypochlorite, zinc and copper.
Hazardous decomposition products	The product decomposition can release ammonia dioxide and sulfur trioxide.

**SECTION 11: TOXICOLOGICAL INFORMATION**

Acute toxicity	May be harmful if swallowed. Product not classified as acute toxic by dermal route. Based on available acute inhalation toxicity information, the classification criteria were not met. LD <sub>50</sub> (oral, rats): 2000 - 4250 mg/kg. LD <sub>50</sub> (dermal, rats): > 2000 mg/kg. LC <sub>50</sub> (inhalation, rats, 8h): > 1,000 mg/m <sup>3</sup> .
Skin irritation/corrosion	The product is not expected to cause skin irritation. However, prolonged contact can cause dry skin, due to the mechanical action of the powder. Ammonium sulfate tests on rabbits were not irritating.
Eye damage/irritation	The product is not expected to cause eye irritation. However, contact

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	<p>with the powder can cause itching and redness of the eyes, due to the mechanical action of the powder.</p> <p>Ammonium sulfate tests on rabbits did not cause eye irritation in animals.</p>
Respiratory or skin sensitization	<p>The product is not expected to cause respiratory or skin sensitization.</p> <p>Test performed on guinea pigs, negative result, non-sensitizing ammonium sulfate.</p>
Reproductive cell mutagenicity	<p>The product is not expected to cause germ cell mutagenicity.</p> <p>Ammonium sulfate was not mutagenic in bacteria (Ames test) and yeasts with and without metabolic activation systems. It did not induce chromosomal aberrations in human or mammalian cell cultures.</p>
Carcinogenicity	<p>The product is not expected to have a carcinogenic potential.</p>
Reproductive toxicity	<p>The product is not expected to cause reproductive toxicity.</p> <p>There are no valid studies available on the effects of ammonium sulfate on fertility and development. Based on data for a similar ammonium compound (diammonium phosphate), which was tested up to 1,500 mg / kg body weight in a screening study according to OECD TG 422 in rats, it can be concluded that ammonium ions, even the proven dose, no toxic effects on fertility. In the 13-week ammonium sulfate feeding study in rats, no histological changes were observed in the testes up to 1792 mg / kg body weight.</p>
Specific target organ toxicity – single exposure	<p>Inhalation of the product may cause respiratory irritation with coughing and sneezing by mechanical action.</p>
Specific target organ toxicity – repeated exposure	<p>The product is not expected to cause target organ toxicity through repeated exposure.</p>
Aspiration hazard	<p>It is not expected that the product presents aspiration hazard.</p>

**SECTION 12: ECOLOGICAL INFORMATION**
**Environmental effects, behavior, and fate of the product**

Ecotoxicity	<p>Harmful to aquatic organisms.</p> <p>LC<sub>50</sub> (<i>Oncorhynchus mykiss</i>, 96h): 53 mg / L.</p> <p>EC<sub>50</sub> (<i>Daphnia magna</i>, 48h): 169 mg / L.</p>
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	EC <sub>50</sub> ( <i>Chlorella vulgaris</i> , 18 days): 2,700 mg / L.
Persistence and degradability	The product is not expected to show persistence, it is expected to degrade rapidly. The product is biodegradable in water.
Bioaccumulative potential	Presents low bioaccumulative potential in aquatic organisms. Log kow: 0,48.
Mobility in soil	No available.
Other adverse effects	High concentrations of the product can impact the aquatic environment, reducing the concentration of dissolved oxygen by favoring and / or inducing the eutrophication process.

**SECTION 13: DISPOSAL CONSIDERATIONS**

Methods of disposal to the chemical product, product waste and/or contaminated container and/or packaging	Must be disposed of as hazardous waste in compliance with local regulations. The treatment and disposal should be evaluated for each specific product. Keep the product remains in its original and properly closed. Disposal should be performed as established for the product. Do not reuse empty containers. These may contain product residues and should be kept closed and sent for proper disposal as established for the product.
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**SECTION 14: TRANSPORT INFORMATION**

<b>International regulations</b>	
<b>Land</b>	UN – “United Nations” Recommendations on the TRANSPORT OF DANGEROUS GOODS. Model Regulations
<b>Sea</b>	IMO – International Maritime Organization International Maritime Dangerous Goods Code (IMDG Code)
<b>Air</b>	IATA – International Air Transport Association Dangerous Goods Regulation (DGR)
UN number	Not classified as hazardous to transport.
Transport in bulk according to MARPOL 73/78, Annex II, and the IBC Code	Consult regulations: - International Maritime Organization. MARPOL: Articles, protocols, annexes, unified interpretations of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol



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of 1978 relating thereto, consolidated edition. IMO, London, 2006.  
- International Maritime Organization. IBC code: International code for the construction and equipment of shipping carrying dangerous chemicals in bulk: With Standards and guidelines relevant to the code. IMO, London, 2007.

**SECTION 15: REGULATORY INFORMATION**

Convention concerning Safety in the use of Chemicals at Work (Convention 170) - International Labour Organization, 1990.

International Organization for Standardization - ISO 11014:2009.

**SECTION 16: OTHER INFORMATION**

This SDS was prepared based on current knowledge about the proper product handling and under normal conditions of use, in accordance with the application specified on the packaging. Any other use of the product involving their combination with other materials, and use various forms of those indicated, are the responsibility of the user. Warns that the handling of any chemical substance requires the prior knowledge of its hazards for the user. In the workplace it is for the user company's product promotes training of its collaborators about the possible risks arising from exposure to the chemical.

SDS elaborated in april, 2021.

**Abbreviations:**

**ACGIH** – American Conference of Governmental Industrial Hygienists

**AIHA** – American Industrial Hygiene Association

**BCF** – Bioconcentration Factor

**BEI** – Biological Exposure Index

**CAS** – Chemical Abstracts Service

**C** – Ceiling

**LC<sub>50</sub>** – Lethal Concentration 50%

**LD<sub>50</sub>** – Lethal Dose 50%

**ERPG** - Emergency Response Planning Guidelines

**LEL** – Lower Explosive Limit

**UEL** – Upper Explosive Limit

**NIOSH** – National Institute of Occupational Safety and Health

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**OSHA** – Occupational Safety & Health Administration**PEL** – Permissible Exposure Limit**REL** – Recommended Exposure Limit**STEL** – Short Term Exposure Limit**TLV** – Threshold Limit Value**TWA** – Time Weighted Average**Bibliographic references:**

ACGIH. AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIALS HYGIENISTS. TLVs® and BEIs®: Based on the Documentation of the Threshold Limit Values (TLVs®) for Chemical Substances and Physical Agents & Biological Exposure Indices (BEIs®). Cincinnati-USA, 2020.

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IARC. INTERNATIONAL AGENCY FOR RESEARCH ON CANCER. Available in: <<http://monographs.iarc.fr/ENG/Classification/index.php>>. Access in: feb. 2021.

NIOSH. NATIONAL INSTITUTE OF OCCUPATIONAL AND SAFETY. International Chemical Safety Cards. Available in: <<http://www.cdc.gov/niosh/>>. Access in: feb. 2021.

NJ. STATE OF NEW JERSEY - Department of Health. Available in: <<http://nj.gov/health/eoh/rtkweb/odispubr.shtml>>. Access in: feb. 2021.

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