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SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

Version 8.3 Revision Date 28.10.2024 Print Date 29.10.2024 GENERIC EU MSDS - NO COUNTRY SPECIFIC DATA - NO OEL DATA

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1	Product identifiers Product name	:	Ammonium nitrate	
	Product Number Brand REACH No. CAS-No.	:	A9642 SIGALD 01-2119490981-27-XXXX 6484-52-2	

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

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

:

Company

1.4 Emergency telephone

Emergency Phone #	: +(44)-870-8200418 (CHEMTREC (GB))
	+(353)-19014670 (CHEMTREC Ireland)
	001-803-017-9114 (CHEMTREC India)

SECTION 2: Hazards identification

2.1	Classification of the substance or mixture		
	Oxidizing solids, (Category 3)	H272: May intensify fire; oxidizer.	

Eye irritation, (Category 2)

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008 Pictogram

Signal Word

Warning

Hazard Statements	
H272	May intensify fire; oxidizer.
H319	Causes serious eye irritation.

Precautionary Statements P210

Keep away from heat, hot surfaces, sparks, open flames and

H319: Causes serious eye irritation.

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	other ignition sources. No smoking.
P220	Keep away from clothing and other combustible materials.
P264	Wash skin thoroughly after handling.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
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.
Supplemental Hazard Statements	none

Reduced Labeling (<= 125 m

Pictogram

25	ml)	
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Signal Word	Warning
Hazard Statements	none
Precautionary Statements	none
Supplemental Hazard Statements	none

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher. Toxicological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

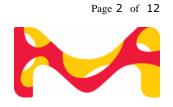
SECTION 3: Composition/information on ingredients

3.1 Substances

Formula Molecular weight CAS-No. EC-No.	: H₄N₂O₃ : 80.04 g/mol : 6484-52-2 : 229-347-8		
Component		Classification	Concentration
Ammonium nitrate			
CAS-No. EC-No.	6484-52-2 229-347-8	Ox. Sol. 3; Eye Irrit. 2; H272, H319	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

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SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice

Show this material safety data sheet to the doctor in attendance.

If inhaled

After inhalation: fresh air.

In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.

In case of eye contact

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

If swallowed

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Nitrogen oxides (NOx) Not combustible. Has a fire-promoting effect due to release of oxygen. Ambient fire may liberate hazardous vapours.

5.3 Advice for firefighters

In the event of fire, wear self-contained breathing apparatus.

5.4 Further information

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

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For personal protection see section 8.

6.2 Environmental precautions

Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

6.4 Reference to other sections For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition.

Hygiene measures

Change contaminated clothing. Wash hands after working with substance. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Tightly closed. Away from combustible materials and sources of ignition and heat. TRGS 511 must be observed.

Hygroscopic. Store under inert gas.

Storage class

Storage class (TRGS 510): 5.1C: Ammonium nitrate and ammonium nitrate containing preparations

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with workplace control parameters

8.2 Exposure controls

Personal protective equipment

Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

Skin protection

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

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Full contact Material: Nitrile rubber Minimum layer thickness: 0.11 mm Break through time: 480 min Material tested:KCL 741 Dermatril® L

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de). Splash contact

Material: Nitrile rubber Minimum layer thickness: 0.11 mm Break through time: 480 min Material tested:KCL 741 Dermatril® L

Body Protection

protective clothing

Respiratory protection

required when dusts are generated. Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system. Recommended Filter type: Filter type P2

The entrepeneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Control of environmental exposure

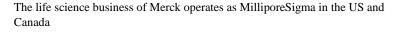
Do not let product enter drains.

SECTION 9: Physical and chemical properties 9.1 Information on basic physical and chemical properties

a)	Physical state	solid
b)	Color	white
c)	Odor	No data available
d)	Melting point/freezing point	Melting point/ range: 169 °C
e)	Initial boiling point and boiling range	210 °C at 14.67 hPa
f)	Flammability (solid, gas)	No data available
g)	Upper/lower flammability or explosive limits	No data available
h)	Flash point	Not applicable
i)	Autoignition temperature	No data available

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j)	Decomposition temperature	> 180 °C
k)	рН	4.5 - 6.0 at 80.40 g/l at 25 °C
I)	Viscosity	Viscosity, kinematic: No data available Viscosity, dynamic: No data available
m)	Water solubility	completely soluble
n)	Partition coefficient: n-octanol/water	Not applicable for inorganic substances
o)	Vapor pressure	Not applicable
p)	Density	1.725 g/cm3 at 25 °C
	Relative density	No data available
q)	Relative vapor density	No data available
r)	Particle characteristics	No data available
s)	Explosive properties	Not classified as explosive.
t)	Oxidizing properties	The substance or mixture is classified as oxidizing with the category 3.

9.2 Other safety information

Relative vapor 2.8 density

SECTION 10: Stability and reactivity

10.1 Reactivity

No data available

10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

10.3 Possibility of hazardous reactions

Risk of explosion with: Alkali metals aluminium chloride Ammonia ammonium compounds Barium nitrate combustible substances carbides charcoal chlorates Chlorites 2,4 Dinitrotoluene Esters urea iron(III) compounds Potassium

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potassium permanganate Hydrocarbons copper compounds Nitro compounds oils perchlorates Powdered metals powdered aluminium Reducing agents Rust sodium sodium hypochlorite sulfur Wood/Sawdust sugars Organic Substances hypochlorous acid organic nitro compounds Aluminum antimony Bismuth Lead cadmium chromium Iron Copper magnesium Manganese Nickel Zinc Tin Mild steel in powder form Water with Heat. metallic oxides with charcoal Acetic anhydride with Nitric acid Risk of ignition or formation of inflammable gases or vapours with: potassium dichromate nitrites Metals phosphorus acetic acid with heat Exothermic reaction with: metallic chlorides salts of oxyhalogenic acids Sulfides organic nitro compounds

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Oxidizing agents alkalines nonmetals Acids

10.4 Conditions to avoid no information available

- **10.5 Incompatible materials** No data available
- **10.6 Hazardous decomposition products** In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - male and female - 2,950 mg/kg (OECD Test Guideline 401) Symptoms: Nausea, Vomiting, Diarrhea, Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract. LC50 Inhalation - Rat - 4 h - > 88.8 mg/l - dust/mist

Remarks: (IUCLID) Symptoms: Symptoms may be delayed., mucosal irritations LD50 Dermal - Rat - male and female - > 5,000 mg/kg (OECD Test Guideline 402)

Skin corrosion/irritation

Skin - Rabbit Result: No skin irritation - 4 h (OECD Test Guideline 404)

Serious eye damage/eye irritation

Eyes - Rabbit Result: Irritating to eyes. - 24 h (OECD Test Guideline 405)

Respiratory or skin sensitization

Local lymph node assay (LLNA) - Mouse Result: negative (OECD Test Guideline 429) Remarks: The value is given in analogy to the following substances: Nitric acid ammonium calcium salt (1:?:?)

Germ cell mutagenicity

Test Type: Chromosome aberration test in vitro Test system: Chinese hamster ovary cells Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 473 Result: negative Test Type: In vitro mammalian cell gene mutation test Test system: mouse lymphoma cells Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476

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Result: negative Test Type: Ames test Test system: Escherichia coli/Salmonella typhimurium Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative

Carcinogenicity

No data available

Reproductive toxicity No data available

Specific target organ toxicity - single exposure No data available

Specific target organ toxicity - repeated exposure No data available

Aspiration hazard No data available

11.2 Additional Information

Endocrine disrupting properties

Product:

Assessment

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Repeated dose toxicity - Rat - male and female - Oral - NOAEL (No observed adverse effect level) - 256 - 284 mg/kg

Remarks: The value is given in analogy to the following substances: ammonium sulphate

RTECS: BR9050000

Gastrointestinal disturbance, Blood disorders To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

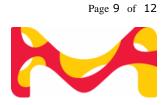
After absorption of large quantities:

Methaemoglobinaemia with headache, cardiac arrhythmia, drop in blood pressure, dyspnoea, and spasms, key symptom: cyanosis (blue colouration of the blood).

The following applies to ammonium salts in general: after swallowing: local irritation symptoms, nausea, vomiting, diarrhoea. Systemic effect: after the uptake of very large qantities: drop in blood pressure, collapse, CNS disorders, spasms, narcotic conditions, respiratory paralysis, haemolysis.

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.



SECTION 12: Ecological information

12.1 Toxicity

Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 490 mg/l - 48 h Remarks: (ECHA) The value is given in analogy to the following substances: potassium nitrate
Toxicity to algae	static test ErC50 - diatoms - > 1,700 mg/l - 10 Days Remarks: (ECHA) The value is given in analogy to the following substances: potassium nitrate
Toxicity to bacteria	EC50 - activated sludge - > 1,000 mg/l - 3 h (OECD Test Guideline 209) Remarks: The value is given in analogy to the following substances: sodium nitrate

12.2 Persistence and degradability

The methods for determining biodegradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Endocrine disrupting properties Product:

Assessment

: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

Biological effects: Hazard for drinking water supplies. Fertilising effect possible. Discharge into the environment must be avoided.

SECTION 13: Disposal considerations

13.1 Waste treatment methods No data available

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SECTION 14: Transport information					
14.1 UN number ADR/RID: 1942	IMDG: 1942	IATA: 1942			
14.2 UN proper shipping na ADR/RID:ADR/RID:AMMONIUM NIMDG:AMMONIUM NIATA:Ammonium ni	ITRATE ITRATE				
14.3 Transport hazard class ADR/RID: 5.1	(es) IMDG: 5.1	IATA: 5.1			
14.4 Packaging group ADR/RID: III	IMDG: III	IATA: III			
14.5 Environmental hazards ADR/RID: no	IMDG Marine pollutant: no	IATA: no			
14.6 Special precautions for user					
Further information	: No data available				

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

Authorisations and/or restrictions on use

Regulation (EU) 2019/1148 on the marketing
and use of explosives precursors: Ammonium nitrateNational legislation
Seveso III: Directive 2012/18/EU of the
European Parliament and of the Council
on the control of major-accident hazards
involving dangerous substances.OXIDISING LIQUIDS AND
SOLIDS3Ammonium nitrate: technical
grade

Other regulations

Take note of Dir 94/33/EC on the protection of young people at work.

15.2 Chemical Safety Assessment

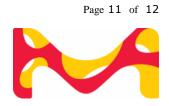
For this product a chemical safety assessment was not carried out

SECTION 16: Other information

Full text of H-Statements

H272	May intensify fire; oxidizer.
H319	Causes serious eye irritation.

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Full text of other abbreviations

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM -American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS -Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx -Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. -Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIOC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Further information

The information is believed to be correct but is not exhaustive and will be used solely as a guideline, which is based on current knowledge of the chemical substance or mixture and is applicable to appropriate safety precautions for the product. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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