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

1.1 Product identifiers
Product name: Ammonium nitrate
Product Number: 256064
Brand: Aldrich
REACH No.: 01-2119490981-27-XXXX
CAS-No.: 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: Sigma-Aldrich Inc.
3050 SPRUCE ST
ST. LOUIS MO  63103
UNITED STATES
Telephone: +1 314 771-5765
Fax: +1 800 325-5052

1.4 Emergency telephone
Emergency Phone #: 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008
Oxidizing solids (Category 3), H272
Eye irritation (Category 2), H319

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

2.2 Label elements
Labelling according Regulation (EC) No 1272/2008
Pictogram

Signal word: Warning
Hazard statement(s)
H272 May intensify fire; oxidizer.
H319 Causes serious eye irritation.

Precautionary statement(s)
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Supplemental Hazard Statements none

Reduced Labeling (<= 125 ml)

Pictogram

Signal word Warning

Hazard statement(s) none

Precautionary statement(s) 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.

SECTION 3: Composition/information on ingredients

3.1 Substances

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium nitrate</td>
<td>Ox. Sol. 3; Eye Irrit. 2; H272, H319</td>
<td>&lt;= 100 %</td>
</tr>
</tbody>
</table>

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

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice
Consult a physician. Show this material safety data sheet to the doctor in attendance.
If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. 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
Dry powder Dry sand

5.2 Special hazards arising from the substance or mixture
Nitrogen oxides (NOx)
Not combustible.

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
Use water spray to cool unopened containers.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. 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
Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.
SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.

Advice on protection against fire and explosion
Provide appropriate exhaust ventilation at places where dust is formed. Keep away from sources of ignition - No smoking. Keep away from heat and sources of ignition.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions
Keep container tightly closed in a dry and well-ventilated place. Store in cool place. Hygroscopic. Store under inert gas.

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
Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0,11 mm
Break through time: 480 min
Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0,11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)
data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the EC approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Impervious clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

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

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
</table>
| a | Appearance | Form: Crystals with lumps  
Color: white  |
| b | Odor | No data available  |
| c | Odor Threshold | No data available  |
| d | pH | 4,5 - 6,0 at 80,40 g/l at 25 °C  |
| e | Melting point/freezing point | Melting point/range: 169 °C - lit.  |
| f | Initial boiling point and boiling range | 210 °C - lit.  |
| g | Flash point | No data available  |
| h | Evaporation rate | No data available  |
| i | Flammability (solid, gas) | No data available  |
| j | Upper/lower flammability or explosive limits | No data available  |
| k | Vapor pressure | Not applicable  |
| l | Vapor density | 2,8  |
m) Density 1,725 g/cm³ at 25 °C
Relative density No data available
n) Water solubility completely soluble
o) Partition coefficient: Not applicable for inorganic substances
n-octanol/water
p) Autoignition temperature No data available
q) Decomposition temperature > 180 °C
r) Viscosity Viscosity, kinematic: No data available
Viscosity, dynamic: No data available
s) Explosive properties No data available
t) Oxidizing properties The substance or mixture is classified as oxidizing with the
category 3.

9.2 Other safety information
Relative vapor density 2.8

SECTION 10: Stability and reactivity

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Reducing agents, Powdered metals, Strong acids

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
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)

**Germ cell mutagenicity**  
Test Type: Mutagenicity (mammal cell test): chromosome aberration.  
Test system: Chinese hamster ovary cells  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 473  
Result: negative  
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: Ames test  
Test system: Salmonella typhimurium  
Result: negative  
Remarks: (IUCLID)

**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**  
Repeated dose toxicity - Rat - male and female - Oral - NOAEL (No observed adverse effect level) - 256 - 284 mg/kg  
Remarks: (in analogy to similar products)  
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.

The life science business of Merck operates as MilliporeSigma in the US and Canada
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 quantities: 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 fish

semi-static test LC50 - *Cyprinus carpio* (Carp) - 447 mg/l - 48 h
Remarks: (ECHA)

Toxicity to daphnia and other aquatic invertebrates

EC50 - *Daphnia magna* (Water flea) - 490 mg/l - 48 h
Remarks: (ECHA)

Toxicity to algae

static test ErC50 - diatoms - > 1.700 mg/l - 10 Days
Remarks: (in analogy to similar products)
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: (in analogy to similar products)
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 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**

**Product**
Offer surplus and non-recyclable solutions to a licensed disposal company. Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

**Contaminated packaging**
Dispose of as unused product.

### SECTION 14: Transport information

**14.1 UN number**
ADR/RID: 1942  
IMDG: 1942  
IATA: 1942

**14.2 UN proper shipping name**
ADR/RID: AMMONIUM NITRATE  
IMDG: AMMONIUM NITRATE  
IATA: Ammonium nitrate

**14.3 Transport hazard class(es)**
ADR/RID: 5.1  
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**
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**
REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII)

**National legislation**
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 referred to under sections 2 and 3.
H272 May intensify fire; oxidizer.
H319 Causes serious eye irritation.

Further information
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