

SAFETY DATA SHEET

according to regulation (EG) Nr. 1907/2006



Date of issue: 09.10.2013

Revision date: 28.07.2015

Version: 2.1

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY / UNDERTAKING

1.1 Product identifiers

Product name:	Ammonium sulfate (N-15 labelled)
EC-No. (non-labelled):	231-984-1
CAS-No. (non-labelled):	7783-20-2
CAS-No.(labelled):	43086-58-4
Index No.:	---
REACH Registration no.:	Not required

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

Supplier:	NUKEM Isotopes GmbH, Industriestrasse 13, 63755 Alzenau, Germany
Telephone:	+49 (0)6023 91 1726
Telefax:	+49 (0)6023 91 1614
Email:	Christian.Schuch@nukemisotopes.de

1.4 Emergency telephone number

24 hr. Emergency Telephone: **+1-703-253-4254** (English / Contract No.: 01009)

2. HAZARDS INDICATION

2.1 Classification of the substance or mixture

Classification according to regulation (EC) No. 1272/2008 and classification according to directive 67/548/EEG or directive 1999/45/EG

Not a hazardous substance or mixture according to regulation (EC) No. 1272/2008.

This substance is not classified as dangerous according to directive 67/548/EEC.

2.2 Label elements

Labeling according to regulation (EG) No. 1272/2008

Classification according to directive 67/548/EEG or directive 1999/45/EG.

Hazard statements:

Not information available.

Precautionary statements:

Not information available.

2.3 Other hazards

Not information available.

3. COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Chemical characterization

Substance:

CAS No. (description):	43086-58-4 (N-15 labelled ammonium sulfate)
EG-No.(non-labelled):	231-984-1
Formula:	$(^{15}\text{NH}_4)_2\text{SO}_4$

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Molar mass [g/mol]: 134,13

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice

Consult a physician. Show this 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

Flush eyes with water as a precaution. Consult a physician.

If swallowed

Rinse mouth with water. Never give anything by mouth to an unconscious person. Immediately make victim drink plenty of water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

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

4.3 Indication of any immediate medical attention and special treatment needed

No data available.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing agents:

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

Nitrogen oxides (NO_x), sulfur dioxide (SO₂), ammonia fumes (NH₃), hydrogen sulfate (H₂S)

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

A mixture of ammonium sulfate and potassium chlorate decomposes with incandescence when heated. When a little ammonium sulfate is added to fused potassium nitrite, a vigorous reaction occurs attended by flame. Non-combustible. This substance itself does not burn, but may decompose upon heating to produce corrosive and/or toxic fumes.

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 and ensure adequate ventilation. Avoid breathing dust. For personal protection see section 8.

6.2 Environmental precautions

Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and material for containment and cleaning up

Pick up mechanically and arrange disposal without creating dust. Keep in suitable, closed containers for disposal. Dispose contaminated material as waste according to section 13.

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6.4 Reference to other sections

See Section 13 for disposal information.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid formation of dust and aerosols and avoid contact with skin and eyes. Provide appropriate exhaust ventilation at places where dust is formed.

7.2 Conditions for safe storage, including any incompatibilities

Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

7.3 Specific end use(s)

No further relevant information available.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control Parameters

Technical instruction on air quality control (TA LUFT / GESTIS):

The emissions of dust in the exhaust gas are not allowed to exceed the following values:

Mass low: 0,20 kg/h

Mass concentration: 20 mg/m³

DNEL/DMEL and PNEC-Values:

DNEL (inhalation-systemic effects): 11,17 mg/m³ (long-term exposure)

8.2 Exposure controls

Appropriate engineering controls:

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of the workday.

Individual protection measures, such as personal protective equipment:

Body protection:

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

Respiratory protection:

Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Eye protection:

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

Hand protection:

Handle with gloves (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 EU Directive 89/686/EEC and the standard EN 374 derived from it.

8.3 Environmental exposure controls

Do not let product enter drains.

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9. PHYSICAL/CHEMICAL PROPERTIES

General Information

Appearance:	Form: Crystalline Color: Colorless
Odor:	Odorless
Odor threshold:	No information available.
pH-value (100 g/l) at 20 °C:	ca. 5.5
Melting point/Melting range:	The substance decomposes when heated (see decomposition temperature)
Boiling point/Boiling range:	No information available.
Flash point:	No information available.
Flammability (solid, gaseous):	No information available.
Ignition temperature:	No information available.
Decomposition temperature:	230 °C
Self-igniting:	No information available.
Danger of explosion:	No information available.
Explosion limits:	Lower: No information available. Upper: No information available.
Oxidizing properties:	No information available.
Vapour pressure:	No information available.
Density at 20 °C:	1.77 g/cm ³
Bulk density:	ca. 850 kg/m ³
Evaporation rate:	No information available.
Solubility in / Miscibility with water at 20 °C:	754 g/l
Partition coefficient: n-octanol/water:	log Pow: -5,1
Viscosity, dynamic:	No information available.

10. STABILITY AND REACTIVITY

10.1 Reactivity

See section 10.3.

10.2 Chemical stability

Decomposition at 230 °C.

10.3 Possibility of hazardous reactions

Risk of explosion in contact with:

Alkali chlorate / acid, alkali nitrate + potassium, sodium hypochlorite, alkali nitrate / acid, potassium nitrite.

The substance can react dangerously with:

Alkali chlorate / heat; alkali nitrate / heat.

10.4 Conditions to avoid

Strong heating with alkali chlorates or alkali nitrates.

10.5 Incompatible materials

Strong oxidizing agents, Strong bases.

10.6 Hazardous decomposition products

Other decomposition products - no data available.

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In case of fire:

See section 5.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity:

LD/LC50 values relevant for classification:

- Oral LD50: 2840 mg/kg (rat) (GESTIS)

11.2 Additional toxicological information

After swallowing:

May be harmful if swallowed.

After inhalation

No information available.

After skin contact:

Skin - rabbit - No skin irritation.

Skin - human - Mild skin irritation.

After eye contact:

Eyes - rabbit - No eye irritation.

Eyes - Human - Mild eye irritation.

11.3 Further information

The product should be handled with the care usual when dealing with chemicals.

12. ECOLOGICAL INFORMATION

12.1 Toxicity (GESTIS)

LC50 Fish (96 hours):

Minimum:	6,6 mg/l
Maximum:	4000 mg/l
Median:	365 mg/l

LC50 Crustaceans (48 hours):

Minimum:	14 mg/l
Maximum:	14 mg/l
Median:	14 mg/l

EC50 Crustaceans (48 hours):

Minimum:	59 mg/l
Maximum:	59 mg/l
Median:	59 mg/l

12.2 Persistence and degradability

No information available.

12.3 Bioaccumulative potential

No information available.

12.4 Mobility in soil

No information available.

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12.5 Results of PBT and vPvB assessment

PBT and vPvB: Not applicable.

13. DISPOSAL CONSIDERATIONS

13.1 Waste Treatment methods

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

14.1 UN-Number

ADR/RID, IMDG, IATA: Not classified as dangerous in the meaning of transport regulations

14.2 UN proper shipping name

ADR/RID, IMDG, IATA: No dangerous goods.

14.3 Transport hazard class(es)

ADR/RID, IMDG, IATA: Not classified as dangerous in the meaning of transport regulations.

14.4 Packing group

ADR/RID, IMDG, IATA: Not classified as dangerous in the meaning of transport regulations.

14.5 Environmental hazards:

ADR/RID, IMDG, IATA: Not classified as dangerous in the meaning of transport regulations.

14.6 Special precautions for user Warning: Corrosive substances.

ADR/RID, IMDG, IATA: Not classified as dangerous in the meaning of transport regulations.

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:

Not relevant

15. REGULATORY INFORMATION

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

No information available.

15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

16. OTHER INFORMATION

Disclaimer

Product is supplied for research and laboratory use only. Not for drug, household or other uses.

Warranty

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. See invoice or packing slip for additional terms and conditions of sale.