

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 07/14/2003

Reviewed on 04/09/2003

• **1 Identification of substance:**

◆ **Product details:**

◆ **Product name:** Potassium nitrate

◆ **Stock number:** 10844

◆ **Manufacturer/Supplier:**

Alfa Aesar, A Johnson Matthey Company
Johnson Matthey Catalog Company, Inc.
30 Bond Street
Ward Hill, MA 01835-8099
Emergency Phone: (978) 521-6300
CHEMTREC: (800) 424-9300
Web Site: www.alfa.com

◆ **Information Department:** Health, Safety and Environmental
Department

◆ **Emergency information:**

During normal hours the Health, Safety and Environmental Department.
After normal hours call Chemtrec at (800) 424-9300.

• **2 Composition/Data on components:**

◆ **Chemical characterization:**

Description: (CAS#)

10844 - Potassium nitrate

Potassium nitrate (CAS# 7757-79-1), 100%

◆ Identification number(s):

◆ EINECS Number: 231-818-8

• 3 Hazards identification

◆ Hazard description:

Xi Irritant
O Oxidizing

◆ Information pertaining to particular dangers for man and environment

R 8 Contact with combustible material may cause fire.
R 36/38 Irritating to eyes and skin.

◆ Classification system

◆ HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

Health (acute effects) = 2

Flammability = 0

Reactivity = 1

• 4 First aid measures

◆ After inhalation

Supply fresh air. If required, provide artificial respiration.
Keep patient warm.
Seek immediate medical advice.

◆ After skin contact

Immediately wash with water and soap and rinse thoroughly.
Seek immediate medical advice.

◆ After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

◆ **After swallowing** Seek immediate medical advice.

• **5 Fire fighting measures**

◆ **Suitable extinguishing agents**

Product is not flammable. Use fire fighting measures that suit the surrounding fire.

◆ **Special hazards caused by the material, its products of combustion or**

resulting gases:

This substance is an oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition.

In case of fire, the following can be released:

Nitrogen oxides (NOx)

Metal oxide

◆ **Protective equipment:**

Wear self-contained respirator.

Wear fully protective impervious suit.

• **6 Accidental release measures**

◆ **Person-related safety precautions:**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

◆ **Measures for environmental protection:**

Do not allow material to be released to the environment without proper governmental permits.

◆ **Measures for cleaning/collecting:** Pick up mechanically.

◆ **Additional information:**

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

• **7 Handling and storage**

◆ Handling

◆ Information for safe handling:

Keep container tightly sealed.
Store in cool, dry place in tightly closed containers.
Ensure good ventilation at the workplace.

◆ Information about protection against explosions and fires:

Substance/product can reduce the ignition temperature of flammable substances.
This substance is an oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition.

◆ Storage

◆ Requirements to be met by storerooms and receptacles:

No special requirements.

◆ Information about storage in one common storage facility:

Store away from flammable substances.
Store away from reducing agents.
Do not store together with acids.

◆ Further information about storage conditions:

Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.

• 8 Exposure controls and personal protection

◆ Additional information about design of technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Components with limit values that require monitoring at the workplace:

Not required.

◆ Additional information: No data

♦ Personal protective equipment

♦ General protective and hygienic measures

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

♦ Breathing equipment:

Use suitable respirator when high concentrations are present.

♦ Protection of hands: Impervious gloves

♦ Eye protection: Safety glasses

♦ Body protection: Protective work clothing.

• 9 Physical and chemical properties:

♦ General Information

♦ Form: Crystalline powder

♦ Color: White

♦ Odor: Odorless

<u>Method</u>	<u>Value/Range</u>	<u>Unit</u>
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♦ Change in condition

♦ Melting point/Melting range: 334 ° C

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♦ Boiling point/Boiling range: 400 ° C
(dec)

♦ Sublimation temperature / start: Not determined

♦ Flash point: Not applicable

♦ Flammability (solid, gaseous)

Contact with combustible material may cause fire.

♦ Ignition temperature: Not determined

♦ Decomposition temperature: Not determined

♦ Danger of explosion:

Explosive when mixed with combustible material.

♦ Explosion limits:

♦ Lower: Not determined

♦ Upper: Not determined

♦ Vapor pressure: Not determined

♦ Density: at 20 ° C 2.109 g/cm³

♦ Solubility in / Miscibility with

♦ Water:

at 100 ° C

2470 g/l

• 10 Stability and reactivity

♦ Thermal decomposition / conditions to be avoided:

Decomposition will not occur if used and stored according to specifications.

♦ Materials to be avoided:

Reducing agents, easily oxidized materials

Acids

Metal powders

Organic materials

♦ Dangerous reactions

Reacts with reducing agents

Reacts with flammable substances

Reacts with powdered metals

♦ Dangerous products of decomposition:

Nitrogen oxides

Metal oxide fume

• 11 Toxicological information

♦ Acute toxicity:

LD/LC50 values that are relevant for classification:

Oral: LD50: 3750 mg/kg (rat)

LD50: 1901 mg/kg (rbt)

♦ Primary irritant effect:

♦ on the skin: Irritant to skin and mucous membranes.

♦ on the eye: Irritating effect.

♦ Sensitization: No sensitizing effects known.

◆ Other information (about experimental toxicology):

Mutagenic effects have been observed on tests with bacteria. Reproductive effects have been observed on tests with laboratory animals.

◆ Subacute to chronic toxicity:

Small doses of nitrates may cause weakness, general depression, headache and mental impairment. Larger doses may cause dizziness, abdominal cramps, vomiting, bloody diarrhea, convulsions and collapse.

Chronic exposure to potassium nitrate can cause anemia, nephritis and methemoglobinemia. Causes mutagenic and reproductive effects.

◆ Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

• 12 Ecological information:

◆ General notes:

Do not allow material to be released to the environment without proper governmental permits.

• 13 Disposal considerations

◆ Product:

◆ Recommendation

Consult state, local or national regulations to ensure proper disposal.

◆ Uncleaned packagings:

◆ Recommendation:

Disposal must be made according to official regulations.

• 14 Transport information

♦ DOT regulations:

♦ Hazard class: 5.1

♦ Identification number: UN1486

♦ Packing group: III

♦ Proper shipping name (technical name):

Potassium nitrate

♦ Land transport ADR/RID (cross-border)

♦ ADR/RID class: 5.1 Oxidizing substances

♦ Item: 22c

♦ Danger code (Kemler): 50

♦ UN-Number: 1486

♦ Description of goods: Potassium nitrate

♦ Maritime transport IMDG:

♦ IMDG Class: 5.1

♦ UN Number: 1486

10844 - Potassium nitrate

- ◆ Packaging group: III
- ◆ Proper shipping name: Potassium nitrate
- ◆ Air transport ICAO-TI and IATA-DGR:
- ◆ ICAO/IATA Class: 5.1
- ◆ UN/ID Number: 1486
- ◆ Packaging group: III
- ◆ Proper shipping name: Potassium nitrate

• 15 Regulations

◆ Product related hazard informations:

◆ Hazard symbols:

Xi Irritant O Oxidizing

◆ Risk phrases:

8 Contact with combustible material may cause fire.
36/38 Irritating to eyes and skin.

◆ Safety phrases:

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

◆ National regulations

All components of this product are listed in the U.S.

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Environmental Protection Agency Toxic Substances Control Act
Chemical substance Inventory.

◆ **Information about limitation of use:**

For use only by technically qualified individuals.

• **16 Other information:**

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

◆ **Department issuing MSDS:** Health, Safety and Environmental Department.

◆ **Contact:** Darrell R. Sanders