



# SODIUM NITRATE (15N, 98%+)

## Safety Data Sheet

according to Regulation (EC) No. 453/2010 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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Version: 3.0

**NLM-157**

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

#### 1.1. Product identifier

Product form : Substance  
Substance name : SODIUM NITRATE (15N, 98%+)  
EC no : 231-554-3 (Unlabeled)  
CAS No : 31432-45-8  
Product code : NLM-157  
Formula : Na\*NO3

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

##### 1.2.1. Relevant identified uses

Main use category : Professional use  
Industrial/Professional use spec : For professional use only.

##### 1.2.2. Uses advised against

No additional information available

#### 1.3. Details of the supplier of the safety data sheet

Cambridge Isotope Laboratories, Inc.  
50 Frontage Road  
Andover, MA 01810  
USA

USA: 1-800-322-1174 Int: 1-978-749-8000  
[cilsales@isotope.com](mailto:cilsales@isotope.com) [www.isotope.com](http://www.isotope.com)

#### Emergency telephone number

Emergency numbers:

Chemtrec: 1-800-424-9300 (24 hours)  
International: 1-703-741-5970 (24 hours)

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### Classification according to Regulation (EC) No. 1272/2008 [CLP]

Ox. Sol. 2 H272

Eye Irrit. 2 H319

Full text of H-phrases: see section 16

##### Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

O; R8

O; R9

Xi; R36

Full text of R-phrases: see section 16

##### Classification (GHS-US)

Ox. Sol. 2 H272

Eye Irrit. 2A H319

##### Adverse physicochemical, human health and environmental effects

Blood, Central nervous system.

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### 2.2. Label elements

#### Labeling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS03

GHS07

Signal word (CLP) :

Danger

Hazard statements (CLP) :

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

Precautionary statements (CLP) :

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking  
P220 - Keep/Store away from combustible materials, clothing  
P221 - Take any precaution to avoid mixing with combustibles  
P264 - Wash hands thoroughly after handling  
P280 - Wear 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  
P370+P378 - In case of fire: Use dry sand, alcohol resistant foam to extinguish

#### GHS-US labeling

Hazard pictograms (GHS-US) :



GHS03

GHS07

Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

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

Precautionary statements (GHS-US) :

P210 - Keep away from heat. - No smoking  
P220 - Keep/Store away from combustible materials, clothing  
P221 - Take any precaution to avoid mixing with combustibles  
P264 - Wash Both hands thoroughly after handling  
P280 - Wear protective clothing, protective gloves  
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  
P370+P378 - In case of fire: Use Alcohol resistant foam., Dry chemical. to extinguish  
P501 - Dispose of contents/container to Comply with applicable regulations.

### 2.3. Other hazards

No additional information available

## SECTION 3: Composition/Information on ingredients

### 3.1. Substance

| Name   | Product identifier                                   | %   | Classification according to Directive 67/548/EEC                |
|--|--|-----|---|
| SODIUM NITRATE (15N, 98%+)<br>(Main constituent) | (CAS No) 31432-45-8<br>(EC no) 231-554-3 (Unlabeled) | 100 | O; R8<br>O; R9<br>Xi; R36                                       |
| Name   | Product identifier                                   | %   | Classification according to Regulation (EC) No. 1272/2008 [CLP] |
| SODIUM NITRATE (15N, 98%+)<br>(Main constituent) | (CAS No) 31432-45-8<br>(EC no) 231-554-3 (Unlabeled) | 100 | Ox. Sol. 2, H272<br>Eye Irrit. 2, H319                          |

Full text of R- and H- phrases: see section 16

| Name   | Product identifier  | %   | Classification (GHS-US)                 |
|--|---------------------|-----|---|
| SODIUM NITRATE (15N, 98%+)<br>(Main constituent) | (CAS No) 31432-45-8 | 100 | Ox. Sol. 2, H272<br>Eye Irrit. 2A, H319 |

Full text of H-phrases: see section 16

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### 3.2. Mixture

Not applicable

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

|                                       |   |
|---------------------------------------|---|
| First-aid measures general            | : Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.     |
| First-aid measures after inhalation   | : If breathed in, move person to fresh air. If not breathing, give artificial respiration. Consult a physician. |
| First-aid measures after skin contact | : Wash with soap and plenty of water. Consult a physician.  |
| First-aid measures after eye contact  | : Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.                        |
| First-aid measures after ingestion    | : 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

|                                      |   |
|--------------------------------------|---|
| Symptoms/injuries after inhalation   | : May be harmful if inhaled. May cause respiratory tract irritation.  |
| Symptoms/injuries after skin contact | : May be harmful if absorbed through skin. May cause skin irritation. |
| Symptoms/injuries after eye contact  | : May cause eye irritation.   |
| Symptoms/injuries after ingestion    | : Harmful if swallowed.   |

### 4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

### 5.2. Special hazards arising from the substance or mixture

No additional information available

### 5.3. Advice for firefighters

|                                |   |
|--------------------------------|---|
| Firefighting instructions      | : Wear self contained breathing apparatus for fire fighting if necessary.                       |
| Protection during firefighting | : Do not enter fire area without proper protective equipment, including respiratory protection. |
| Other information              | : Use water spray to cool unopened containers.  |

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

#### 6.1.1. For non-emergency personnel

Emergency procedures : Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Avoid breathing dust.

#### 6.1.2. For emergency responders

No additional information available

### 6.2. Environmental precautions

Do not let product enter drains.

### 6.3. Methods and material for containment and cleaning up

For containment : 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. Do not flush with water. Keep in suitable, closed containers for disposal.

### 6.4. Reference to other sections

No additional information available

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

|                                   |  |
|-----------------------------------|--|
| Additional hazards when processed | : Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs. Provide appropriate exhaust ventilation at places where dust is formed. |
| Hygiene measures                  | : Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.   |

### 7.2. Conditions for safe storage, including any incompatibilities

|                    |   |
|--------------------|---|
| Technical measures | : Keep container tightly closed in a dry and well-ventilated place. |
| Storage conditions | : Store at room temperature away from light and moisture.           |

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### 7.3. Specific end use(s)

No additional information available

## SECTION 8: Exposure controls/personal protection

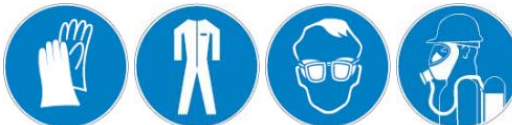
### 8.1. Control parameters

No additional information available

### 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 workday.

Personal protective equipment : Gloves. Protective clothing. Protective goggles. Self-contained breathing apparatus.



Hand protection : Wear suitable protective clothing and gloves.

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

Skin and body protection : Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique 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. 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 : When appropriate, use NIOSH/CEN approved respirator.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

|   |   |
|---|---|
| Physical state                              | : Solid                                     |
| Appearance                                  | : Solid.                                    |
| Molecular mass                              | : 85.99 g/mol (Labeled)                     |
| Color                                       | : White.                                    |
| Odor  | : No data available.                        |
| Odor threshold                              | : No data available                         |
| pH  | : 9 at 100 g/l at 20 °C (68 °F)             |
| Relative evaporation rate (butyl acetate=1) | : No data available                         |
| Melting point                               | : 306 °C (583 °F)                           |
| Freezing point                              | : No data available                         |
| Boiling point                               | : 380 °C (716 °F)                           |
| Flash point                                 | : No data available                         |
| Auto-ignition temperature                   | : No data available                         |
| Decomposition temperature                   | : No data available                         |
| Flammability (solid, gas)                   | : No data available                         |
| Vapor pressure                              | : No data available                         |
| Relative vapor density at 20 °C             | : No data available                         |
| Relative density                            | : 2.261 g/cm <sup>3</sup>                   |
| Solubility                                  | : Water: 874 g/l at 20 °C (68 °F) - soluble |
| Log Pow                                     | : -3.799 at 25 °C (77 °F)                   |
| Log Kow                                     | : No data available                         |
| Viscosity, kinematic                        | : No data available                         |
| Viscosity, dynamic                          | : No data available                         |
| Explosive properties                        | : No data available                         |
| Oxidizing properties                        | : No data available                         |
| Explosive limits                            | : No data available                         |

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No additional information available

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### 10.2. Chemical stability

Stable if stored under recommended conditions.

### 10.3. Possibility of hazardous reactions

No additional information available

### 10.4. Conditions to avoid

Fusion of mixtures of metal cyanides, including lead thiocyanate, with metal chlorates, perchlorates, nitrates or nitrites causes a violent explosion. Addition of one solid component (even as a residue in small amount) to another molten component is also highly dangerous. Heat.

### 10.5. Incompatible materials

Strong acids, Strong reducing agents, Powdered metals, Organic materials. Alkali metals, Alkaline earth metals, Cyanides, thiocyanates.

### 10.6. Hazardous decomposition products

Under fire conditions. - Sodium oxides, nitrogen oxides.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified.

| SODIUM NITRATE (15N, 98%+) (31432-45-8) |                            |
|---|----------------------------|
| LD50 oral rat                           | 3430 mg/kg                 |
| LD50 dermal rat                         | > 5000 mg/kg               |
| LD50 dermal                             | 175 mg/kg - Mouse          |
| ATE CLP (oral)                          | 3430.000 mg/kg body weight |

Skin corrosion/irritation : Skin - Rabbit Result: No skin irritation. (OECD Test Guideline 404)

No data available

pH: 9 at 100 g/l at 20 °C (68 °F)

Serious eye damage/irritation : Eyes - Rabbit Result: Eye irritation. (OECD Test Guideline 405)

No data available

pH: 9 at 100 g/l at 20 °C (68 °F)

Respiratory or skin sensitization : In vivo assay - Mouse Result: did not cause sensitisation on laboratory animals. (OECD Test Guideline 429)

No data available

Germ cell mutagenicity : Human - HeLa cell - DNA inhibition. Mouse - Micronucleus test

Carcinogenicity : Carcinogenicity - Mouse - Oral Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Liver: Tumors. Blood: Lymphomas including Hodgkin's disease.

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

No data available

Specific target organ toxicity (repeated exposure) : Not classified

No data available

Aspiration hazard : Not classified

Potential Adverse human health effects and symptoms : Absorption into the body leads to the formation of methemoglobin which in sufficient concentration causes cyanosis. Onset may be delayed 2 to 4 hours or longer.

Symptoms/injuries after inhalation : May be harmful if inhaled. May cause respiratory tract irritation.

Symptoms/injuries after skin contact : May be harmful if absorbed through skin. May cause skin irritation.

Symptoms/injuries after eye contact : May cause eye irritation.

Symptoms/injuries after ingestion : Harmful if swallowed.

## SECTION 12: Ecological information

### 12.1. Toxicity

| SODIUM NITRATE (15N, 98%+) (31432-45-8) |  |
|---|--|
| LC50 fish 1                             | 6650 mg/l <i>Gambusia affinis</i> (Mosquito fish) - 96 h |
| EC50 Daphnia 1                          | 6000 mg/l <i>Daphnia magna</i> (Water flea) - 24 h       |

### 12.2. Persistence and degradability

| SODIUM NITRATE (15N, 98%+) (31432-45-8) |                |
|---|----------------|
| Persistence and degradability           | Not available. |

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### 12.3. Bioaccumulative potential

| SODIUM NITRATE (15N, 98%+) (31432-45-8) |                         |
|---|-------------------------|
| Log Pow                                 | -3.799 at 25 °C (77 °F) |
| Bioaccumulative potential               | Not available.          |

### 12.4. Mobility in soil

| SODIUM NITRATE (15N, 98%+) (31432-45-8) |                |
|---|----------------|
| Ecology - soil                          | Not available. |

### 12.5. Results of PBT and vPvB assessment

No additional information available

### 12.6. Other adverse effects

Other adverse effects : Not available.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

- Regional legislation (waste) : Waste materials should be disposed of under conditions which meet Federal, State, and Local environmental control regulations.
- Waste disposal recommendations : Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.
- Ecology - waste materials : Dispose of as unused product.

## SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

### 14.1. UN number

- UN-No.(DOT) : 1498
- DOT NA no. : UN1498

### 14.2. UN proper shipping name

- Proper Shipping Name (DOT) : Sodium nitrate
- Transport hazard class(es) (DOT) : 5.1 - Class 5.1 - Oxidizer 49 CFR 173.128
- Hazard labels (DOT) : 5.1 - Oxidizer



- Packing group (DOT) : III - Minor Danger
- DOT Special Provisions (49 CFR 172.102) : A1 - Single packaging are not permitted on passenger aircraft.  
A29 - Combination packaging consisting of outer expanded plastic boxes with inner plastic bags are not authorized for transportation by aircraft.  
IB8 - Authorized IBCs: Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 11HZ2, 21HZ1, 21HZ2, 31HZ1 and 31HZ2); Fiberboard (11G); Wooden (11C, 11D and 11F); Flexible (13H1, 13H2, 13H3, 13H4, 13H5, 13L1, 13L2, 13L3, 13L4, 13M1 or 13M2).  
IP3 - Flexible IBCs must be sift-proof and water-resistant or must be fitted with a sift-proof and water-resistant liner.  
T1 - 1.5 178.274(d)(2) Normal..... 178.275(d)(2)  
TP33 - The portable tank instruction assigned for this substance applies for granular and powdered solids and for solids which are filled and discharged at temperatures above their melting point which are cooled and transported as a solid mass. Solid substances transported or offered for transport above their melting point are authorized for transportation in portable tanks conforming to the provisions of portable tank instruction T4 for solid substances of packing group III or T7 for solid substances of packing group II, unless a tank with more stringent requirements for minimum shell thickness, maximum allowable working pressure, pressure-relief devices or bottom outlets are assigned in which case the more stringent tank instruction and special provisions shall apply. Filling limits must be in accordance with portable tank special provision TP3. Solids meeting the definition of an elevated temperature material must be transported in accordance with the applicable requirements of this subchapter.  
W1 - This substance in a non friable prill or granule form is not subject to the requirements of this subchapter when tested in accordance with the UN Manual of Test and Criteria (IBR, see §171.7 of this subchapter) and is found to not meet the definition or criteria for inclusion in Division 5.1.
- DOT Packaging Exceptions (49 CFR 173.xxx) : 152
- DOT Packaging Non Bulk (49 CFR 173.xxx) : 213
- DOT Packaging Bulk (49 CFR 173.xxx) : 240
- Marine pollutant : No

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### 14.3. Additional information

Other information : No supplementary information available.

#### Overland transport

Packing group (ADR) : III  
Class (ADR) : 5.1 - Oxidizer  
Hazard identification number (Kemler No.) : 50  
Classification code (ADR) : O2  
Hazard labels (ADR) : 5.1 - Oxidizer



Orange plates : 

Tunnel restriction code : E  
Limited quantities (ADR) : 5kg  
EAC : 1Z  
Excepted quantities (ADR) : E1

#### Transport by sea

DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.  
MFAG-No : 140

#### Air transport

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 25 kg  
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 100 kg  
Civil Aeronautics Law : Oxidizing substances and organic peroxides/Oxidizing substances

### 14.4. Environmental hazards

Other information : No supplementary information available.

### 14.5. Special precautions for user

### 14.6. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

| SODIUM NITRATE (15N, 98%+) (31432-45-8) |                 |
|---|-----------------|
| SARA Section 311/312 Hazard Classes     | Reactive hazard |

### 15.2. International regulations

#### CANADA

| SODIUM NITRATE (15N, 98%+) (31432-45-8)                          |
|--|
| Listed on the Canadian DSL (Domestic Substances List) inventory. |

#### 15.2.1. National regulations

No additional information available

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### 15.3. US State regulations

#### SODIUM NITRATE (15N, 98%+)(31432-45-8)

|                            |   |
|----------------------------|---|
| State or local regulations | U.S. - Massachusetts - Right To Know List<br>U.S. - Pennsylvania - RTK (Right to Know) List<br>U.S. - New Jersey - Right to Know Hazardous Substance List<br>This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm. |
|----------------------------|---|

## SECTION 16: Other information

Other information : This product is not radioactive. The data given for this product are those of the corresponding unlabeled compound, unless specifically indicated otherwise. Health and safety data for labeled compounds are generally not available, but are assumed to be similar or identical to the corresponding unlabeled compound.

Full text of R-, H- and EUH-phrases:

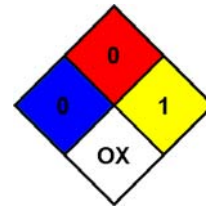
|              |  |
|--------------|--|
| Eye Irrit. 2 | Serious eye damage/eye irritation Category 2     |
| Ox. Sol. 2   | Oxidizing solids Category 2                      |
| H272         | May intensify fire; oxidizer                     |
| H319         | Causes serious eye irritation                    |
| R36          | Irritating to eyes                               |
| R8           | Contact with combustible material may cause fire |
| R9           | Explosive when mixed with combustible material   |
| O            | Oxidizing  |
| Xi           | Irritant   |

NFPA health hazard : 0 - Exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials.

NFPA fire hazard : 0 - Materials that will not burn.

NFPA reactivity : 1 - Normally stable, but can become unstable at elevated temperatures and pressures or may react with water with some release of energy, but not violently.

NFPA specific hazard : OX - This denotes an oxidizer, a chemical which can greatly increase the rate of combustion/fire.



### HMIS III Rating

Health : 1 Slight Hazard - Irritation or minor reversible injury possible

Flammability : 0 Minimal Hazard

Physical : 1 Slight Hazard

CIL Multi-Solvent Mixture SDS

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product*