# Material Safety Data Sheet

Version 5.0
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## 1. PRODUCT AND COMPANY IDENTIFICATION

| | | |
|---|---|---|
| Product name | : | Sodium nitrate |
| Product Number | : | S5506 |
| Brand | : | Sigma-Aldrich |
| Supplier | : | Sigma-Aldrich<br>3050 Spruce Street<br>SAINT LOUIS MO 63103<br>USA |
| Telephone | : | +1 800-325-5832 |
| Fax | : | +1 800-325-5052 |
| Emergency Phone # (For both supplier and manufacturer) | : | (314) 776-6555 |
| Preparation Information | : | Sigma-Aldrich Corporation<br>Product Safety - Americas Region<br>1-800-521-8956 |

## 2. HAZARDS IDENTIFICATION

### Emergency Overview

#### OSHA Hazards

Oxidizer, Harmful by ingestion.

#### Target Organs

Blood, Central nervous systemBlood, Central nervous system

#### GHS Classification

Oxidizing solids (Category 3)
Acute toxicity, Oral (Category 4)
Skin irritation (Category 2)
Eye irritation (Category 2A)
Specific target organ toxicity - single exposure (Category 3)

#### GHS Label elements, including precautionary statements

Pictogram

Signal word: Warning

Hazard statement(s)

| | |
|---|---|
| H272 | May intensify fire; oxidiser. |
| H302 | Harmful if swallowed. |
| H315 | Causes skin irritation. |
| H319 | Causes serious eye irritation. |
| H335 | May cause respiratory irritation. |

Precautionary statement(s)

| | |
|---|---|
| P220 | Keep/Store away from clothing/ combustible materials. |
| P261 | Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. |
| P305 + P351 + P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |

### HMIS Classification

**Health hazard**: 1
**Flammability**: 0
**Physical hazards**: 1

**NFPA Rating**

**Health hazard**: 1
**Fire**: 0
**Reactivity Hazard**: 1
**Special hazard.**: OX

**Potential Health Effects**

**Inhalation** May be harmful if inhaled. May cause respiratory tract irritation.
**Skin** Harmful if absorbed through skin. May cause skin irritation.
**Eyes** May cause eye irritation.
**Ingestion** Harmful if swallowed.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula : $NNaO_3$
Molecular Weight : 84.99 g/mol

| Component | Concentration |
|---|---|
| **Sodium nitrate** | |
| CAS-No. 7631-99-4<br>EC-No. 231-554-3 | - |

## 4. FIRST AID MEASURES

**General advice**
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

**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.

## 5. FIREFIGHTING MEASURES

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

**Special protective equipment for firefighters**
Wear self contained breathing apparatus for fire fighting if necessary.

**Hazardous combustion products**
Hazardous decomposition products formed under fire conditions. - Sodium oxides, nitrogen oxides (NOx)
Hazardous decomposition products formed under fire conditions. - Nature of decomposition products not known.
Hazardous decomposition products formed under fire conditions. - Sodium oxides

**Further information**
Use water spray to cool unopened containers.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions**
Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

**Environmental precautions**
Do not let product enter drains.

**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.

## 7. HANDLING AND STORAGE

**Precautions for safe handling**
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.
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. Normal measures for preventive fire protection.

**Conditions for safe storage**
Keep container tightly closed in a dry and well-ventilated place.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

**Personal protective equipment**

**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).

**Hand 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.

Immersion protection
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: > 480 min
Material tested:Dermatril® (Aldrich Z677272, Size M)

Splash protection
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: > 30 min
Material tested:Dermatril® (Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 873000, 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 CE approved gloves. This recommendation is advisory only and must be evaluated by an Industrial Hygienist 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.

**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 (US) or EN 166(EU).

**Skin and body protection**
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Appearance

| | |
|---|---|
| Form | solid |
| Colour | no data available |

### Safety data

| | |
|---|---|
| pH | 9 at 100 g/l at 20 °C (68 °F) |
| Melting point/freezing point | 306 °C (583 °F) |
| Boiling point | 380 °C (716 °F) |
| Flash point | no data available |
| Ignition temperature | no data available |
| Autoignition temperature | no data available |
| Lower explosion limit | no data available |
| Upper explosion limit | no data available |
| Vapour pressure | no data available |
| Density | 2.261 g/cm3 |
| Water solubility | 874 g/l at 20 °C (68 °F) |
| Partition coefficient: n-octanol/water | log Pow: -3.8 at 25 °C (77 °F) |
| Relative vapour density | no data available |
| Odour | no data available |
| Odour Threshold | no data available |
| Evaporation rate | no data available |

## 10. STABILITY AND REACTIVITY

**Chemical stability**
Stable under recommended storage conditions.

**Possibility of hazardous reactions**
no data available

**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.

**Materials to avoid**
Strong acids, Strong reducing agents, Powdered metals, Organic materials, Alkali metals, Alkaline earth metals, Cyanides, thiocyanates

**Hazardous decomposition products**
Hazardous decomposition products formed under fire conditions. - Sodium oxides, nitrogen oxides (NOx)
Hazardous decomposition products formed under fire conditions. - Nature of decomposition products not known.
Hazardous decomposition products formed under fire conditions. - Sodium oxides
Other decomposition products - no data available

## 11. TOXICOLOGICAL INFORMATION

**Acute toxicity**

**Oral LD50**
LD50 Oral - rat - 1,267 mg/kg

LD50 Oral - rabbit - 2,680 mg/kg

LDLO Oral - Child - 22.5 mg/kg

**Inhalation LC50**
no data available

**Dermal LD50**
no data available

**Other information on acute toxicity**
LD50 Intravenous - mouse - 175 mg/kg

**Skin corrosion/irritation**
no data available

**Serious eye damage/eye irritation**
no data available

**Respiratory or skin sensitization**
no data available

**Germ cell mutagenicity**

no data available

Genotoxicity in vitro - Hamster - fibroblast
Cytogenetic analysis

Genotoxicity in vitro - Hamster - Embryo
Host-mediated assay

Genotoxicity in vitro - Human - HeLa cell
Unscheduled DNA synthesis

Genotoxicity in vivo - mouse - Oral
Micronucleus test

Genotoxicity in vivo - mouse - Oral
Cytogenetic analysis

Genotoxicity in vivo - mouse - Oral
sperm

**Carcinogenicity**

Carcinogenicity - rat - Oral
Tumorigenic:Equivocal tumorigenic agent by RTECS criteria. Liver:Tumors.

Carcinogenicity - rat - Oral
Tumorigenic:Equivocal tumorigenic agent by RTECS criteria. Skin and Appendages: Other: Tumors. Tumorigenic Effects: Testicular tumors.

| | |
|---|---|
| IARC: | No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. |
| ACGIH: | No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH. |
| NTP: | No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. |
| OSHA: | No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA. |

**Reproductive toxicity**
Reproductive toxicity - mouse - male - Oral
Paternal Effects: Spermatogenesis (including genetic material, sperm morphology,motility, and count).

no data available

**Teratogenicity**

no data available

**Specific target organ toxicity - single exposure (Globally Harmonized System)**
no data available

**Specific target organ toxicity - repeated exposure (Globally Harmonized System)**
no data available

**Aspiration hazard**
no data available

**Potential health effects**

| | |
|---|---|
| **Inhalation** | May be harmful if inhaled. May cause respiratory tract irritation. |
| **Ingestion** | Harmful if swallowed. |
| **Skin** | Harmful if absorbed through skin. May cause skin irritation. |
| **Eyes** | May cause eye irritation. |

**Signs and Symptoms of Exposure**
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.

**Synergistic effects**
no data available

**Additional Information**
RTECS: WC5600000

## 12. ECOLOGICAL INFORMATION

**Toxicity**

| | |
|---|---|
| Toxicity to fish | static test LC50 - Gambusia affinis (Mosquito fish) - 6,650 mg/l - 96 h |
| Toxicity to daphnia and other aquatic invertebrates | EC50 - Daphnia magna (Water flea) - 6,000 mg/l - 24 h |

**Persistence and degradability**
no data available

**Bioaccumulative potential**
no data available

**Mobility in soil**
no data available

**PBT and vPvB assessment**
no data available

**Other adverse effects**

no data available

## 13. DISPOSAL CONSIDERATIONS

**Product**
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. 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

**DOT (US)**
UN number: 1498 Class: 5.1 Packing group: III
Proper shipping name: Sodium nitrate
Marine pollutant: No
Poison Inhalation Hazard: No

**IMDG**
UN number: 1498 Class: 5.1 Packing group: III EMS-No: F-A, S-Q
Proper shipping name: SODIUM NITRATE
Marine pollutant: No

**IATA**
UN number: 1498 Class: 5.1 Packing group: III
Proper shipping name: Sodium nitrate

## 15. REGULATORY INFORMATION

**OSHA Hazards**
Oxidizer, Harmful by ingestion.

**SARA 302 Components**
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313 Components**
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**SARA 311/312 Hazards**
Reactivity Hazard, Acute Health Hazard

**Massachusetts Right To Know Components**
No components are subject to the Massachusetts Right to Know Act.

**Pennsylvania Right To Know Components**

| | CAS-No. | Revision Date |
|---|---|---|
| Sodium nitrate | 7631-99-4 | 1993-04-24 |

**New Jersey Right To Know Components**

| | CAS-No. | Revision Date |
|---|---|---|
| Sodium nitrate | 7631-99-4 | 1993-04-24 |

**California Prop. 65 Components**
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

## 16. OTHER INFORMATION

**Further information**

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. 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.