1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name: Sodium nitrate
Product Number: S5506
Brand: Sigma-Aldrich
CAS-No.: 7631-99-4

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
3050 Spruce Street
SAINT LOUIS MO  63103
USA
Telephone: +1 800-325-5832
Fax: +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone #: (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Oxidizing solids (Category 3), H272
Eye irritation (Category 2A), H319

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

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word: Warning

Hazard statement(s)
H272 May intensify fire; oxidiser.
H319 Causes serious eye irritation.

Precautionary statement(s)
P210 Keep away from heat.
P220 Keep/Store away from clothing/ combustible materials.
P221 Take any precaution to avoid mixing with combustibles.
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/ 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, dry chemical or alcohol-resistant foam for extinction.
2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances
Formula : NNaO₃
Molecular weight : 84.99 g/mol
CAS-No. : 7631-99-4
EC-No. : 231-554-3

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium nitrate</td>
<td>Ox. Sol. 3; Eye Irrit. 2A; 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.

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. 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.

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

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
Sodium oxides

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.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, 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.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
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. Keep away from sources of ignition - No smoking. Keep away from heat and sources of ignition. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Storage class (TRGS 510): Oxidizing hazardous materials

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters
Components with workplace control parameters
Contains no substances with occupational exposure limit values.

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

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.

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 CE 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.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Appearance</td>
<td>Form: solid</td>
</tr>
<tr>
<td>b) Odour</td>
<td>No data available</td>
</tr>
<tr>
<td>c) Odour Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>d) pH</td>
<td>9 at 100 g/l at 20 °C (68 °F)</td>
</tr>
<tr>
<td>e) Melting point/freezing point</td>
<td>306 °C (583 °F)</td>
</tr>
<tr>
<td>f) Initial boiling point and boiling range</td>
<td>380 °C (716 °F)</td>
</tr>
<tr>
<td>g) Flash point</td>
<td>No data available</td>
</tr>
<tr>
<td>h) Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>i) Flammability (solid, gas)</td>
<td>No data available</td>
</tr>
<tr>
<td>j) Upper/lower flammability or explosive limits</td>
<td>No data available</td>
</tr>
<tr>
<td>k) Vapour pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>l) Vapour density</td>
<td>No data available</td>
</tr>
<tr>
<td>m) Relative density</td>
<td>2.261 g/cm³</td>
</tr>
<tr>
<td>n) Water solubility</td>
<td>874 g/l at 20 °C (68 °F) - soluble</td>
</tr>
<tr>
<td>o) Partition coefficient: n-octanol/water</td>
<td>log Pow: -3.799 at 25 °C (77 °F)</td>
</tr>
<tr>
<td>p) Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>q) Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>r) Viscosity</td>
<td>No data available</td>
</tr>
<tr>
<td>s) Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>t) Oxidizing properties</td>
<td>The substance or mixture is classified as oxidizing with the category 3.</td>
</tr>
</tbody>
</table>

#### 9.2 Other safety information

Bulk density 1,300 kg/m³

### 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
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
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - 3,430 mg/kg
Inhalation: No data available
LD50 Dermal - Rat - > 5,000 mg/kg
LD50 Intravenous - Mouse - 175 mg/kg

Skin corrosion/irritation
Skin - Rabbit
Result: No skin irritation
(OECD Test Guideline 404)
Remarks: Read-across (Analogy)

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

Respiratory or skin sensitisation
in vivo assay - Mouse
Does not cause skin sensitisation.
(OECD Test Guideline 429)

Germ cell mutagenicity
Human
HeLa cell
Unscheduled DNA synthesis

Mouse
Micronucleus test

Mouse
Cytogenetic analysis

Carcinogenicity
Carcinogenicity - Rat - Oral
Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Liver: Tumors.
Carcinogenicity - Rat - Oral
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
No data available

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

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: WC5600000
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.

12. ECOLOGICAL INFORMATION

12.1 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

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
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
- Proper shipping name: Sodium nitrate
- Reportable Quantity (RQ): 
- Packing group: III
- Poison Inhalation Hazard: No

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

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

15. REGULATORY INFORMATION

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

**SARA 313 Components**
The following components are subject to reporting levels established by SARA Title III, Section 313:

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium nitrate</td>
<td>7631-99-4</td>
<td>1993-04-24</td>
</tr>
</tbody>
</table>

**SARA 311/312 Hazards**
- Reactivity Hazard

**Massachusetts Right To Know Components**
- Sodium nitrate
- CAS-No. 7631-99-4
- Revision Date 1993-04-24

**Pennsylvania Right To Know Components**
- Sodium nitrate
- CAS-No. 7631-99-4
- Revision Date 1993-04-24

**New Jersey Right To Know Components**
- Sodium nitrate
- CAS-No. 7631-99-4
- Revision Date 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

**Full text of H-Statements referred to under sections 2 and 3.**

<table>
<thead>
<tr>
<th>H-Statement</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>Eye Irrit.</td>
<td>Eye irritation</td>
</tr>
<tr>
<td>H272</td>
<td>May intensify fire; oxidiser.</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation.</td>
</tr>
<tr>
<td>Ox. Sol.</td>
<td>Oxidizing solids</td>
</tr>
</tbody>
</table>

**HMIS Rating**
- Health hazard: 1
- Chronic Health Hazard:
- Flammability: 0
- Physical Hazard: 1

**NFPA Rating**
- Health hazard: 0
Fire Hazard: 0
Reactivity Hazard: 1
Special hazard.I: OX

Further information
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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.

Preparation Information
Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 5.4 Revision Date: 12/17/2014 Print Date: 04/29/2015