SECTION 1: Identification

1.1. Identification

Product form : Substance
Substance name : Potassium Nitrate
CAS-No. : 7757-79-1
Formula : KNO₃

1.2. Recommended use and restrictions on use

Use of the substance/mixture : Laboratory Reagent
Nutritional Supplement
Oral Care; Pharmaceuticals

1.3. Supplier

Manufacturer
Jost Chemical Co.
8150 Lackland Rd.
Saint Louis, Missouri 63114
T 314-428-4300 - F 314-428-4366
sds@jostchemical.com - www.jostchemical.com

1.4. Emergency telephone number

Emergency number : For Hazardous Materials [or Dangerous Goods] Incident Spill, Leak, Fire, Exposure, or Accident
Call CHEMTREC Day or Night
United States and Canada: 1-800-424-9300 / +1 703-527-3887
Global: +1 703-741-5970

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification
Oxidizing solids Category 3  H272 - May intensify fire; oxidizer
Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS-US labeling
Hazard pictograms (GHS-US) :

Signal word (GHS-US) : Warning
Hazard statements (GHS-US) : H272 - May intensify fire; oxidizer
Precautionary statements (GHS-US) : P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P220 - Keep/Store away from clothing, combustibles
P221 - Take any precaution to avoid mixing with combustibles
P280 - Wear eye protection, face protection, face shield, protective clothing, protective gloves.
P370+P378 - In case of fire: Use D-powder to extinguish.
P501 - Dispose of contents/container to an approved waste disposal plant

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Substance type : Mono-constituent
Potassium Nitrate
Safety Data Sheet
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Full text of hazard classes and H-statements: see section 16

3.2. Mixtures
Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures


First-aid measures after inhalation: Remove person to fresh air and keep comfortable for breathing. Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

First-aid measures after skin contact: Rinse with water. Soap may be used. Do not apply (chemical) neutralizing agents. Take victim to a doctor if irritation persists. Wash skin with plenty of water.

First-aid measures after eye contact: Rinse with water. Remove contact lenses, if present and easy to do. Continue rinsing. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists. Rinse eyes with water as a precaution.

First-aid measures after ingestion: Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Victim is fully conscious: immediately induce vomiting. Induce vomiting by giving a 0.9 % saline solution. Call Poison Information Centre (www.big.be/antigif.htm). Consult a doctor/medical service if you feel unwell. Ingestion of large quantities: immediately to hospital. Doctor: administration of chemical antidote. Call a poison center/doctor/physician if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

Potential Adverse human health effects and symptoms: Obstructs oxygen absorption. Practically non-toxic if swallowed (LD50 oral 2000/5000 mg/kg). Slightly irritating to skin. Slightly irritant to respiratory organs.

Symptoms/effects after inhalation: AFTER INHALATION OF DUST: Dry/sore throat. Coughing. Irritation of the respiratory tract.

Symptoms/effects after skin contact: Redness. ON CONTINUOUS EXPOSURE/CONTACT: Tingling/irritation of the skin.

Symptoms/effects after eye contact: Redness of the eye tissue. ON CONTINUOUS EXPOSURE/CONTACT: Irritation of the eye tissue.


Chronic symptoms: ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Skin rash/inflammation.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media


5.2. Specific hazards arising from the chemical

Fire hazard: DIRECT FIRE HAZARD: Non combustible. May intensify fire; oxidizer.

Explosion hazard: INDIRECT EXPLOSION HAZARD: Reactions with explosion hazards: see “Reactivity Hazard”.

Reactivity: Reacts with many compounds e.g.: with organic material, with combustible materials, with (some) metals and their compounds and with (strong) reducers. May cause or intensify fire; oxidizer.

5.3. Special protective equipment and precautions for fire-fighters

Precautionary measures fire: Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighborhood close doors and windows.

Firefighting instructions: Cool tanks/drum with water spray/remove them into safety. Dilute toxic gases with water spray.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel


Measures in case of dust release: In case of dust production: keep upwind. Dust production: have neighborhood close doors and windows.

6.1.2. For emergency responders

Protective equipment: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment: Contain released product, pump into suitable containers. Plug the leak, cut off the supply. Knock down/dilute dust cloud with water spray. If reacting: dilute toxic gas/vapor with water spray. Take account of toxic/corrosive precipitation water.

Methods for cleaning up: Mechanically recover the product. Prevent dispersion by covering with dry sand/earth. Scoop solid spill into closing containers. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling. Notify authorities if product enters sewers or public waters.

Other information: Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling: Ensure good ventilation of the work station. Avoid raising dust. Keep away from naked flames/heat. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Wear personal protective equipment.

Hygiene measures: Observe normal hygiene standards. Keep container tightly closed. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures: Does not require any specific or particular technical measures.

Storage conditions: Store in a clean, dry warehouse in the original unopened containers. Store in a well-ventilated place. Keep cool.

Incompatible materials: Combustible materials.

Storage temperature: 20 °C

Heat-ignition: KEEP SUBSTANCE AWAY FROM: heat sources.


Storage area: Store in a dry area. Fireproof storeroom. Detached building. Meet the legal requirements.

Special rules on packaging: SPECIAL REQUIREMENTS: closing. dry. clean. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.

Packaging materials: SUITABLE MATERIAL: synthetic material. glass. MATERIAL TO AVOID: wood.
SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>Potassium Nitrate (7757-79-1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DNEL</td>
</tr>
<tr>
<td>PNEC</td>
</tr>
<tr>
<td>36.7 mg/m³ (Long-term - systemic effects, inhalation, workers)</td>
</tr>
</tbody>
</table>

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.
Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:
Dust production: dust mask with filter type P2. Gloves. Safety glasses.

Materials for protective clothing:
GIVE GOOD RESISTANCE: butyl rubber. neoprene. rubber. GIVE POOR RESISTANCE: natural fibres

Hand protection:
Gloves

Eye protection:
Safety glasses. In case of dust production: protective goggles. Safety glasses

Skin and body protection:
Protective clothing

Respiratory protection:
Dust production: dust mask with filter type P2

Personal protective equipment symbol(s):

SECTION 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>Physical state</td>
<td>Solid</td>
</tr>
<tr>
<td>Appearance</td>
<td>Crystals. Granules.</td>
</tr>
<tr>
<td>Color</td>
<td>Colorless-white</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>6 - 8 (5 %)</td>
</tr>
<tr>
<td>Melting point</td>
<td>334 °C</td>
</tr>
<tr>
<td>Freezing point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Boiling point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Relative evaporation rate (butyl acetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Non flammable.</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative vapor density at 20 °C</td>
<td>3</td>
</tr>
<tr>
<td>Relative density</td>
<td>2.1</td>
</tr>
</tbody>
</table>
Potassium Nitrate
Safety Data Sheet

Specific gravity / density: 2100 kg/m³
Molecular mass: 101.1 g/mol
Solubility: Soluble in water. Soluble in glycerol.
  Water: 32 g/100ml
  Ethanol: 0.16 g/100ml
Log Pow: No data available
Auto-ignition temperature: Not applicable
Decomposition temperature: 400 °C
Viscosity, kinematic: No data available
Viscosity, dynamic: No data available
Explosion limits: Not applicable
Explosive properties: No data available
Oxidizing properties: May intensify fire; oxidiser.

9.2. Other information
Minimum ignition energy: Not applicable
SADT: Not applicable
VOC content: 0 %
Other properties: Translucent.

SECTION 10: Stability and reactivity

10.1. Reactivity
Reacts with many compounds e.g.: with organic material, with combustible materials, with (some) metals and their compounds and with (strong) reducers. May cause or intensify fire; oxidizer.

10.2. Chemical stability
Stable under normal conditions.

10.3. Possibility of hazardous reactions
Refer to section 10.1 on Reactivity.

10.4. Conditions to avoid
Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials
Combustible materials.

10.6. Hazardous decomposition products
Reacts with (some) acids: release of toxic and corrosive gases/vapors (nitrous vapors).

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity (oral): Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (dermal): Not classified
Acute toxicity (inhalation): Not classified

Potassium Nitrate (7757-79-1)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>3750 mg/kg (Rat)</td>
</tr>
<tr>
<td>LC50 inhalation rat (mg/l)</td>
<td>&gt; 0.527 mg/l/4h</td>
</tr>
</tbody>
</table>

- Skin corrosion/irritation: Not classified (Based on available data, the classification criteria are not met) pH: 6 - 8 (5 %)
- Serious eye damage/irritation: Not classified (Based on available data, the classification criteria are not met) pH: 6 - 8 (5 %)
- Respiratory or skin sensitization: Not classified (Lack of data)
- Germ cell mutagenicity: Not classified (Lack of data)
- Carcinogenicity: Not classified (Lack of data)
- Reproductive toxicity: Not classified (Lack of data)
- Specific target organ toxicity – single exposure: Not classified (Lack of data)
Potassium Nitrate
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Specific target organ toxicity – repeated exposure : Not classified (Lack of data)
Aspiration hazard : Not classified (Lack of data)
Viscosity, kinematic : No data available
Likely routes of exposure : Skin and eye contact. Inhalation.
Potential Adverse human health effects and symptoms : Obstructs oxygen absorption. Practically non-toxic if swallowed (LD50 oral 2000/5000 mg/kg). Slightly irritating to skin. Slightly irritating to respiratory organs.
Symptoms/effects after inhalation : AFTER INHALATION OF DUST: Dry/sore throat. Coughing. Irritation of the respiratory tract.
Symptoms/effects after skin contact : Red skin. ON CONTINUOUS EXPOSURE/CONTACT: Tingling/irritation of the skin.
Symptoms/effects after eye contact : Redness of the eye tissue. ON CONTINUOUS EXPOSURE/CONTACT: Irritation of the eye tissue.
Chronic symptoms : ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Skin rash/inflammation.

SECTION 12: Ecological information

12.1. Toxicity
Ecology - general : Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008.
Ecology - air : Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).

<table>
<thead>
<tr>
<th>Potassium Nitrate (7757-79-1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
</tr>
<tr>
<td>NOEC (acute)</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability

<table>
<thead>
<tr>
<th>Potassium Nitrate (7757-79-1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistence and degradability</td>
</tr>
<tr>
<td>Biochemical oxygen demand (BOD)</td>
</tr>
<tr>
<td>Chemical oxygen demand (COD)</td>
</tr>
<tr>
<td>ThOD</td>
</tr>
<tr>
<td>BOD (% of ThOD)</td>
</tr>
</tbody>
</table>

12.3. Bioaccumulative potential

<table>
<thead>
<tr>
<th>Potassium Nitrate (7757-79-1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioaccumulative potential</td>
</tr>
</tbody>
</table>

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods
Regional legislation (waste) : LWCA (the Netherlands): KGA category 06.
Waste treatment methods : Dispose of contents/container in accordance with licensed collector’s sorting instructions.
Product/Packaging disposal recommendations : Do not discharge into surface water. Remove to an authorized dump. Precipitate/make insoluble.
SECTION 14: Transport information

Department of Transportation (DOT)
In accordance with DOT

Transport document description : UN1486 Potassium nitrate, 5.1, III
UN-No.(DOT) : UN1486
Proper Shipping Name (DOT) : Potassium nitrate
Class (DOT) : 5.1 - Class 5.1 - Oxidizer 49 CFR 173.128
Packing group (DOT) : III - Minor Danger
Hazard labels (DOT) : 5.1 - Oxidizer

DOT Packaging Non Bulk (49 CFR 173.xxx) : 213
DOT Packaging Bulk (49 CFR 173.xxx) : 240

DOT Packaging Exceptions (49 CFR 173.xxx) : 152
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 25 kg
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 100 kg
DOT Vessel Stowage Location : A - The material may be stowed “on deck” or “under deck” on a cargo vessel and on a passenger vessel.
Emergency Response Guide (ERG) Number : 140
Other information : No supplementary information available.

Transportation of Dangerous Goods
Transport document description : UN 1486 POTASSIUM NITRATE, 5.1, III
<bc_T_02537> (TDG) : UN 1486
Proper Shipping Name (Transportation of Dangerous Goods) : POTASSIUM NITRATE
TDG Primary Hazard Classes : 5.1 - Class 5.1 - Oxidizing Substances
Packing group : III - Minor Danger

07/03/2018 EN (English US)
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Transport by sea

| Transport document description (IMDG) | UN 1486 Potassium nitrate, 5.1, III |
| UN-No. (IMDG) | 1486 |
| Proper Shipping Name (IMDG) |Potassium nitrate|
| Class (IMDG) | 5.1 - Oxidizing substances |
| Packing group (IMDG) | III - substances presenting low danger |
| Limited quantities (IMDG) | 5 kg |
| EmS-No. (1) | F-A |
| EmS-No. (2) | S-Q |

Air transport

| Transport document description (IATA) | UN 1486 Potassium nitrate, 5.1, III |
| UN-No. (IATA) | 1486 |
| Proper Shipping Name (IATA) | Potassium nitrate |
| Class (IATA) | 5.1 - Oxidizing Substances |
| Packing group (IATA) | III - Minor Danger |

SECTION 15: Regulatory information

15.1. US Federal regulations

Potassium Nitrate (7757-79-1)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

<table>
<thead>
<tr>
<th>SARA Section 311/312 Hazard Classes</th>
<th>Immediate (acute) health hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delayed (chronic) health hazard</td>
<td></td>
</tr>
</tbody>
</table>

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

15.2. International regulations

CANADA

Potassium Nitrate (7757-79-1)
Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations
No additional information available

National regulations
No additional information available

15.3. US State regulations

Potassium Nitrate (7757-79-1)

<table>
<thead>
<tr>
<th>State or local regulations</th>
<th>U.S. - New Jersey - Right to Know Hazardous Substance List</th>
</tr>
</thead>
</table>

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date | 06/11/2018 |

Full text of H-phrases:

H272 | May intensify fire; oxidizer |
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NFPA health hazard : 1 - Materials that, under emergency conditions, can cause significant irritation.
NFPA fire hazard : 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.
NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.

Hazard Rating
Health : 1 Slight Hazard - Irritation or minor reversible injury possible
* - Chronic (long-term) health effects may result from repeated overexposure
Flammability : 0 Minimal Hazard - Materials that will not burn
Physical : 1 Slight Hazard - Materials that are normally stable but can become unstable (self-react) at high temperatures and pressures. Materials may react non-violently with water or undergo hazardous polymerization in the absence of inhibitors.

Indication of changes:
This sheet has been revised completely (changes were not marked).

SDS US (HazCom 2012)
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.