

## Chemical Safety Data Sheet MSDS / SDS

**POTASSIUM NITRITE**

Revision Date:2024-12-21 Revision Number:1

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****Product identifier**

Product name : POTASSIUM NITRITE  
CBnumber : CB8694434  
CAS : 7758-09-0  
EINECS Number : 231-832-4  
Synonyms : POTASSIUM NITRITE

**Relevant identified uses of the substance or mixture and uses advised against**

Relevant identified uses : For R&D use only. Not for medicinal, household or other use.  
Uses advised against : none

**Company Identification**

Company : Chemicalbook  
Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing  
Telephone : 400-158-6606

**SECTION 2: Hazards identification****Classification of the substance or mixture**

Oxidizing solids, Category 2  
Acute toxicity - Category 3, Oral  
Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1

**Label elements****Pictogram(s)**

☐☐

Signal word : Danger

**Hazard statement(s)**

H272 May intensify fire; oxidizer  
H301 Toxic if swallowed  
H400 Very toxic to aquatic life

**Precautionary statement(s)**

P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.  
P220 Keep/Store away from clothing/.../combustible materials.

P221 Take any precaution to avoid mixing with combustibles/...

P273 Avoid release to the environment.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

P370+P378 In case of fire: Use ... for extinction.

P405 Store locked up.

#### **Prevention**

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P220 Keep away from clothing and other combustible materials.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...

P264 Wash ... thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P273 Avoid release to the environment.

#### **Response**

P370+P378 In case of fire: Use ... to extinguish.

P301+P316 IF SWALLOWED: Get emergency medical help immediately.

P321 Specific treatment (see ... on this label).

P330 Rinse mouth.

P391 Collect spillage.

#### **Storage**

P405 Store locked up.

#### **Disposal**

P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

#### **Other hazards**

no data available

---

## SECTION 3: Composition/information on ingredients

### **Substance**

Product name : POTASSIUM NITRITE

Synonyms : POTASSIUM NITRITE

CAS : 7758-09-0

EC number : 231-832-4

MF : KNO<sub>2</sub>

MW : 85.1038

---

## SECTION 4: First aid measures

### **Description of first aid measures**

#### **If inhaled**

Fresh air, rest. Artificial respiration may be needed. Refer for medical attention.

#### Following skin contact

First rinse with plenty of water for at least 15 minutes, then remove contaminated clothes and rinse again.

#### Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

#### Following ingestion

Rinse mouth. Induce vomiting (ONLY IN CONSCIOUS PERSONS!). Refer for medical attention .

#### Most important symptoms and effects, both acute and delayed

Excerpt from ERG Guide 140 [Oxidizers]: Inhalation, ingestion or contact (skin, eyes) with vapors or substance may cause severe injury, burns or death. Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may cause pollution. (ERG, 2016)

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

Maintain an open airway and assist ventilation if necessary. Administer supplemental oxygen. Treat hypotension with supine positioning, intravenous crystalloid fluids, and a low dose -pressor if needed. Monitor vital signs and ECG for 4 to 6 hours. Symptomatic methemoglobinemia may be treated with methylene blue. ... Administer activated charcoal. Gastric emptying is not necessary for small ingestions if activated charcoal can be given promptly . Hemodialysis and hemoperfusion are not effective. Severe methemoglobinemia in infants not responsive to methylene blue therapy may require exchange transfusion. Nitrates and Nitrites

---

## SECTION 5: Firefighting measures

### Extinguishing media

Evacuation: If fire becomes uncontrollable - consider evacuation of one-half (1/2) mile radius

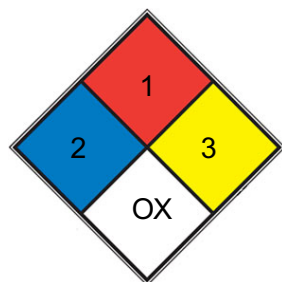
### Specific Hazards Arising from the Chemical

Excerpt from ERG Guide 140 [Oxidizers]: These substances will accelerate burning when involved in a fire. Some may decompose explosively when heated or involved in a fire. May explode from heat or contamination. Some will react explosively with hydrocarbons (fuels). May ignite combustibles (wood, paper, oil, clothing, etc.). Containers may explode when heated. Runoff may create fire or explosion hazard. (ERG, 2016)

### Advice for firefighters

In case of fire in the surroundings, use appropriate extinguishing media. In case of fire: keep drums, etc., cool by spraying with water.

### NFPA 704



■ HEALTH 2 Intense or continued but not chronic exposure could cause temporary incapacitation or possible residual injury (e.g. [diethyl ether](#), ammonium phosphate, iodine)

■ FIRE 1 Materials that require considerable preheating, under all ambient temperature conditions, before ignition and combustion can occur. Includes some finely divided suspended solids that do not require heating before ignition can occur. Flash

point at or above 93.3 °C (200 °F). (e.g. [mineral oil](#), ammonia)

---

Capable of detonation or explosive decomposition but requires a strong initiating source, must be heated under confinement before initiation, reacts explosively with water, or will detonate if severely shocked (e.g. [ammonium nitrate](#), cesium, hydrogen peroxide)

---

REACT 3  
 SPEC. OX  
 HAZ.

---

## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Sweep spilled substance into covered containers. Carefully collect remainder. Then store and dispose of according to local regulations. Do NOT absorb in saw-dust or other combustible absorbents.

### Environmental precautions

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Sweep spilled substance into covered containers. Carefully collect remainder. Then store and dispose of according to local regulations. Do NOT absorb in saw-dust or other combustible absorbents.

### Methods and materials for containment and cleaning up

Sweep spilled substance into containers. Carefully collect remainder, then remove to safe place. Do NOT absorb in saw-dust or other combustible absorbents. Do NOT let this chemical enter the environment. (Extra personal protection: P3 filter respirator for toxic particles).

---

## SECTION 7: Handling and storage

### Precautions for safe handling

NO contact with combustible substances. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

### Conditions for safe storage, including any incompatibilities

Fireproof. Provision to contain effluent from fire extinguishing. Separated from combustible substances, reducing agents and acids. Dry. Well closed. Keep well closed.

---

## SECTION 8: Exposure controls/personal protection

### Control parameters

#### Occupational Exposure limit values

no data available

#### Biological limit values

no data available

## Exposure controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

## Individual protection measures

### Eye/face protection

Wear safety goggles or eye protection in combination with breathing protection.

### Skin protection

Protective gloves.

### Respiratory protection

Use local exhaust or breathing protection.

### Thermal hazards

no data available

---

## SECTION 9: Physical and chemical properties

### Information on basic physicochemical properties

Physical state	Solid
Colour	White to slightly yellow
Odour	no data available
Melting point/freezing point	441 °C
Boiling point or initial boiling point and boiling range	537 deg C (explodes)
Flammability	Not combustible but enhances combustion of other substances. Many reactions may cause fire or explosion. Gives off irritating or toxic fumes (or gases) in a fire.
Lower and upper explosion limit/flammability limit	no data available
Flash point	no data available
Auto-ignition temperature	no data available
Decomposition temperature	no data available
pH	7-10 (50g/l, H <sub>2</sub> O, 20°C)
Kinematic viscosity	no data available
Solubility	water: soluble 0.35 part
Partition coefficient n-octanol/water	no data available
Vapour pressure	no data available
Density and/or relative density	1.915
Relative vapour density	1.915
Particle characteristics	no data available

---

## SECTION 10: Stability and reactivity

## Reactivity

May explode on heating above 530°C. Decomposes on contact with even weak acids. This produces toxic fumes of nitrogen oxides. The substance is a strong oxidant. It reacts with combustible and reducing materials. This generates fire and explosion hazard.

## Chemical stability

no data available

## Possibility of hazardous reactions

Not combustible but enhances combustion of other substances ... /Potassium nitrite/ is a strong oxidant and reacts with combustible and reducing materials causing fire and explosion hazard. POTASSIUM NITRITE is an oxidizing agent. Mixtures with phosphorus, tin(II) chloride or other reducing agents may react explosively [Bretherick 1979 p. 108-109]. Contamination by ammonium compounds can initiate spontaneous decomposition. The resulting heat may ignite surrounding combustible material. Reacts with acids to form toxic nitrogen dioxide gas. Mixing with liquid ammonia forms dipotassium nitrite, which is very reactive and easily explosive [Mellor 2, Supp. 3:1566 1963]. Melting together with an ammonium salt leads to a violent explosion [Von Schwartz 1918 p. 299]. A mixture with potassium cyanide may cause an explosion. When a little ammonium sulfate is added to fused potassium nitrite, a vigorous reaction occurs attended by flame [Mellor 2:702. 1946-47].

## Conditions to avoid

no data available

## Incompatible materials

Addition of ammonium sulfate to the fused /potassium/ nitrite causes effervescence and ignition.

## Hazardous decomposition products

Decomposition of compound starts at 350 deg C.

---

## SECTION 11: Toxicological information

### Acute toxicity

- Oral: LD50 Rabbit oral 108 mg anion/kg Nitrite ion
- Inhalation: LC50 Mouse inhalation 85 g/cu m/2 hr
- Dermal: no data available

### Skin corrosion/irritation

no data available

### Serious eye damage/irritation

no data available

### Respiratory or skin sensitization

no data available

### Germ cell mutagenicity

no data available

### Carcinogenicity

no data available

### **Reproductive toxicity**

no data available

### **STOT-single exposure**

The substance is irritating to the eyes, skin and respiratory tract. The substance may cause effects on the cardiovascular system and blood. This may result in fall of blood pressure and the formation of methaemoglobin. Exposure could cause death. The effects may be delayed. Medical observation is indicated.

### **STOT-repeated exposure**

no data available

### **Aspiration hazard**

Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly.

---

## SECTION 12: Ecological information

### **Toxicity**

Toxicity to fish: no data available

Toxicity to daphnia and other aquatic invertebrates: no data available

Toxicity to algae: no data available

Toxicity to microorganisms: no data available

### **Persistence and degradability**

no data available

### **Bioaccumulative potential**

no data available

### **Mobility in soil**

no data available

### **Other adverse effects**

no data available

---

## SECTION 13: Disposal considerations

### **Disposal methods**

#### **Product**

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

#### **Contaminated packaging**

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

---

## SECTION 14: Transport information

### UN Number

ADR/RID: UN1488 (For reference only, please check.)

IMDG: UN1488 (For reference only, please check.)

IATA: UN1488 (For reference only, please check.)

### UN Proper Shipping Name

ADR/RID: POTASSIUM NITRITE (For reference only, please check.)

IMDG: POTASSIUM NITRITE (For reference only, please check.)

IATA: POTASSIUM NITRITE (For reference only, please check.)

### Transport hazard class(es)

ADR/RID: 5.1 (For reference only, please check.)

IMDG: 5.1 (For reference only, please check.)

IATA: 5.1 (For reference only, please check.)

### Packing group, if applicable

ADR/RID: II (For reference only, please check.)

IMDG: II (For reference only, please check.)

IATA: II (For reference only, please check.)

### Environmental hazards

ADR/RID: Yes

IMDG: Yes

IATA: Yes

### Special precautions for user

no data available

### Transport in bulk according to IMO instruments

no data available

---

## SECTION 15: Regulatory information

### Safety, health and environmental regulations specific for the product in question

#### European Inventory of Existing Commercial Chemical Substances (EINECS)

Listed.

#### EC Inventory



Listed.

#### **United States Toxic Substances Control Act (TSCA) Inventory**

Listed.

#### **China Catalog of Hazardous chemicals 2015**

Listed.

#### **New Zealand Inventory of Chemicals (NZIoC)**

Listed.

#### **PICCS**

Listed.

#### **Vietnam National Chemical Inventory**

Listed.

#### **IECSC**

Listed.

#### **Korea Existing Chemicals List (KECL)**

Listed.

---

## SECTION 16: Other information

### **Abbreviations and acronyms**

CAS: Chemical Abstracts Service

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

IMDG: International Maritime Dangerous Goods

IATA: International Air Transportation Association

TWA: Time Weighted Average

STEL: Short term exposure limit

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

EC50: Effective Concentration 50%

### **References**

IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>

HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>

IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>

eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: [http://www.echemportal.org/echemportal/index?pageID=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en)

CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>

ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>

ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>

Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>

ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

### **Other Information**

Decomposition of compound starts at 350°C. Depending on the degree of exposure, periodic medical examination is indicated. Specific treatment is necessary in case of poisoning with this substance; the appropriate means with instructions must be available. Rinse contaminated clothing with plenty of water because of fire hazard.

**Disclaimer:**

The information in this MSDS is only applicable to the specified product, unless otherwise specified, it is not applicable to the mixture of this product and other substances. This MSDS only provides information on the safety of the product for those who have received the appropriate professional training for the user of the product. Users of this MSDS must make independent judgments on the applicability of this SDS. The authors of this MSDS will not be held responsible for any harm caused by the use of this MSDS.