

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

1.1. Product identifier

Product form	: Substance
Substance name	: Potassium Nitrate
CAS No	: 7757-79-1
Formula	: KNO ₃
Synonyms	: niter / nitrate of potash / nitrate of potassium / nitre / nitric acid potassium salt / saltpeter / saltpetre / vicknite

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

Use of the substance/mixture	: For laboratory and manufacturing use only.
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1.3. Details of the supplier of the safety data sheet

Shri Shanti Laboratories
Shri Shanti Niwas,
Gangashahar Road,
Bikaner-334001, India

1.4. Emergency telephone number

Emergency number	: +91-151-2200084 ; +91-9571511119
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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Ox. Sol. 3 H272
Skin Irrit. 2 H315
Eye Irrit. 2A H319
STOT SE 3 H335

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US)



Signal word (GHS-US)	: Warning
Hazard statements (GHS-US)	: H272 - May intensify fire; oxidiser H315 - Causes skin irritation H319 - Causes serious eye irritation H335 - May cause respiratory irritation

Precautionary statements (GHS-US)	: P210 - Keep away from heat, hot surfaces, open flames, sparks. - No smoking P220 - Keep/Store away from clothing, combustible materials P221 - Take any precaution to avoid mixing with combustibles P261 - Avoid breathing dust P264 - Wash exposed skin thoroughly after handling P271 - Use only outdoors or in a well-ventilated area P280 - Wear eye protection, protective clothing, protective gloves, face protection P302+P352 - IF ON SKIN: Wash with plenty of soap and water P304+P340 - IF INHALED: remove victim to fresh air and keep at rest in a position comfortable for breathing P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing P312 - Call a POISON CENTER/doctor/physician if you feel unwell P332+P313 - If skin irritation occurs: Get medical advice/attention P337+P313 - If eye irritation persists: Get medical advice/attention
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Potassium Nitrate

Safety Data Sheet

P362 - Take off contaminated clothing and wash before reuse
P403+P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up
P501 - Dispose of contents/container to comply with local, state and federal regulations

2.3. Other hazards

Other hazards not contributing to the classification : None.

2.4. Unknown acute toxicity (GHS-US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substance

Substance type : Mono-constituent

Name	Product identifier	%	GHS-US classification
Potassium Nitrate (Main constituent)	(CAS No) 7757-79-1	100	Ox. Sol. 3, H272 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335

Full text of H-phrases: see section 16

3.2. Mixture

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital. Never give alcohol to drink.

First-aid measures after inhalation : 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.

First-aid measures after eye contact : Rinse with water. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists.

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.

4.2. Most important symptoms and effects, both acute and delayed

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

Symptoms/injuries after skin contact : Red skin. ON CONTINUOUS EXPOSURE/CONTACT: Tingling/irritation of the skin.

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

Symptoms/injuries after ingestion : Gastrointestinal complaints. Vomiting. Nausea. Diarrhoea. AFTER ABSORPTION OF HIGH QUANTITIES: Blood in stool. Methemoglobinemia. FOLLOWING SYMPTOMS MAY APPEAR LATER: Blue/grey discolouration of the skin. Dizziness. Feeling of weakness. Disturbances of heart rate. Headache. Disturbances of consciousness.

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

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 : EXTINGUISHING MEDIA FOR SURROUNDING FIRES: All extinguishing media allowed.

Unsuitable extinguishing media : No unsuitable extinguishing media known.

Potassium Nitrate

Safety Data Sheet

5.2. Special hazards arising from the substance or mixture

Fire hazard	: DIRECT FIRE HAZARD. Non combustible. INDIRECT FIRE HAZARD. Promotes combustion. Reactions involving a fire hazard: see "Reactivity Hazard".
Explosion hazard	: DIRECT EXPLOSION HAZARD. No data available on direct explosion hazard. INDIRECT EXPLOSION HAZARD. No data available on indirect explosion hazard.
Reactivity	: Decomposes on exposure to temperature rise: release of oxygen. On burning: release of toxic and corrosive gases/vapours (nitrous vapours). Violent to explosive reaction with many compounds e.g.: with organic material, with combustible materials, with (some) metals and their compounds and with (strong) reducers. Reacts with (some) acids: release of toxic and corrosive gases/vapours (nitrous vapours).

5.3. Advice for firefighters

Precautionary measures fire	: Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighbourhood close doors and windows.
Firefighting instructions	: Cool tanks/drums with water spray/remove them into safety. Do not move the load if exposed to heat. Dilute toxic gases with water spray.
Protection during firefighting	: Heat/fire exposure: compressed air/oxygen apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment	: Gloves. Protective clothing. Dust cloud production: compressed air/oxygen apparatus. Reactivity hazard: compressed air/oxygen apparatus. Reactivity hazard: gas-tight suit.
Emergency procedures	: Mark the danger area. Prevent dust cloud formation, e.g. by wetting. No naked flames. Keep containers closed. Wash contaminated clothes. In case of hazardous reactions: keep upwind. In case of reactivity hazard: consider evacuation.
Measures in case of dust release	: In case of dust production: keep upwind. Dust production: have neighbourhood close doors and windows.

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Prevent spreading in sewers.

6.3. Methods and material for containment and cleaning up

For containment	: Contain released substance, pump into suitable containers. Consult "Material-handling" to select material of containers. Plug the leak, cut off the supply. Dam up the solid spill. Knock down/dilute dust cloud with water spray. If reacting: dilute toxic gas/vapour with water spray. Take account of toxic/corrosive precipitation water.
Methods for cleaning up	: Prevent dispersion by covering with dry sand/earth. Scoop solid spill into closing containers. See "Material-handling" for suitable container materials. Spill must not return in its original container. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	: Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Keep the substance free from contamination. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain. Avoid raising dust. Keep away from naked flames/heat. Observe normal hygiene standards. Keep container tightly closed. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.
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7.2. Conditions for safe storage, including any incompatibilities

Storage temperature	: 20 °C
Heat and ignition sources	: KEEP SUBSTANCE AWAY FROM: heat sources.
Prohibitions on mixed storage	: KEEP SUBSTANCE AWAY FROM: combustible materials. reducing agents. (strong) acids. metals. organic materials.
Storage area	: Store in a dry area. Fireproof storeroom. Detached building. Meet the legal requirements.
Special rules on packaging	: SPECIAL REQUIREMENTS: closing. clean. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.

Potassium Nitrate

Safety Data Sheet

Packaging materials : SUITABLE MATERIAL: synthetic material. glass. MATERIAL TO AVOID: wood.

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 : Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

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.

Skin and body protection : Protective clothing.

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

Thermal hazard protection : None necessary.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Solid

Appearance : Crystalline solid. Crystalline powder.

Molecular mass : 101.10 g/mol

Colour : Colourless-white.

Odour : Odourless.

Odour threshold : No data available

pH : 6 - 8 (5 %)

pH solution : 5 %

Relative evaporation rate (butylacetate=1) : No data available

Melting point : 334 °C

Freezing point : No data available

Boiling point : Not applicable

Flash point : Not applicable

Self ignition temperature : Not applicable

Decomposition temperature : 400 °C

Flammability (solid, gas) : No data available

Vapour pressure : No data available

Relative vapour density at 20 °C : 3

Relative density : 2.1

Density : 2100 kg/m³

Solubility : Soluble in water. Soluble in glycerol.
Water: 32 g/100ml
Ethanol: 0.16 g/100ml

Log Pow : No data available

Log Kow : No data available

Viscosity, kinematic : No data available

Viscosity, dynamic : No data available

Explosive properties : No data available

Oxidising properties : May intensify fire; oxidiser.

Explosive limits : No data available

9.2. Other information

Minimum ignition energy : Not applicable

SADT : Not applicable

Potassium Nitrate

Safety Data Sheet

VOC content : Not applicable
Other properties : Translucent.

SECTION 10: Stability and reactivity

10.1. Reactivity

Decomposes on exposure to temperature rise: release of oxygen. On burning: release of toxic and corrosive gases/vapours (nitrous vapours). Violent to explosive reaction with many compounds e.g.: with organic material, with combustible materials, with (some) metals and their compounds and with (strong) reducers. Reacts with (some) acids: release of toxic and corrosive gases/vapours (nitrous vapours).

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

Direct sunlight. Heat. Incompatible materials. Open flame. Sparks.

10.5. Incompatible materials

combustible materials. Strong reducing agents.

10.6. Hazardous decomposition products

Nitrogen oxides. oxygen.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Potassium Nitrate (f)7757-79-1	
LD50 oral rat	3750 mg/kg (Rat)

Skin corrosion/irritation : Causes skin irritation.
pH: 6 - 8 (5 %)

Serious eye damage/irritation : Causes serious eye irritation.
pH: 6 - 8 (5 %)

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : May cause respiratory irritation.

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

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

Symptoms/injuries after skin contact : Red skin. ON CONTINUOUS EXPOSURE/CONTACT: Tingling/irritation of the skin.

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

Symptoms/injuries after ingestion : Gastrointestinal complaints. Vomiting. Nausea. Diarrhoea. AFTER ABSORPTION OF HIGH QUANTITIES: Blood in stool. Methemoglobinemia. FOLLOWING SYMPTOMS MAY APPEAR LATER: Blue/grey discolouration of the skin. Dizziness. Feeling of weakness. Disturbances of heart rate. Headache. Disturbances of consciousness.

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

SECTION 12: Ecological information

12.1. Toxicity

Ecology - water : Mild water pollutant (surface water). Ground water pollutant. Maximum concentration in drinking water: 50 mg/l (nitrate) (Directive 98/83/EC). Not harmful to fishes (LC50(96h) >1000 mg/l). Slightly harmful to invertebrates (Daphnia) (EC50 (48h): 100 - 1000 mg/l). May cause eutrophication. Slightly harmful to plankton (EC50: 100 - 1000 mg/l). Insufficient data available on ecotoxicity.

Potassium Nitrate

Safety Data Sheet

Potassium Nitrate (7757-79-1)	
LC50 fishes 1	162 mg/l (96 h; Pisces; Lethal)
LC50 other aquatic organisms 1	39 mg/l (96 h; Daphnia magna)
EC50 other aquatic organisms 1	200 - 1000 mg/l (Plankton; Nocivity test)
LC50 fish 2	1378 mg/l (Poecilia reticulata)
LC50 other aquatic organisms 2	490 mg/l (48 h; Daphnia magna)
TLM fish 1	3000 mg/l (96 h; Lepomis macrochirus)
TLM fish 2	162 mg/l (96 h; Gambusia affinis)
Threshold limit other aquatic organisms 1	39 mg/l (96 h; Daphnia magna)
Threshold limit other aquatic organisms 2	490 mg/l (48 h; Daphnia magna)

12.2. Persistence and degradability

Potassium Nitrate (7757-79-1)	
Persistence and degradability	Biodegradability: not applicable.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

12.3. Bioaccumulative potential

Potassium Nitrate (7757-79-1)	
Bioaccumulative potential	No bioaccumulation data available.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations	: Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Precipitate/make insoluble. Remove to an authorized dump (Class I). Do not discharge into surface water.
Additional information	: LWCA (the Netherlands): KGA category 05. Hazardous waste according to Directive 2008/98/EC.

SECTION 14: Transport information

In accordance with DOT	
Transport document description	: UN1486 Potassium nitrate, III
UN-No.(DOT)	: 1486
DOT NA no.	: UN1486
DOT Proper Shipping Name	: Potassium nitrate
Hazard labels (DOT)	: 5.1 - Oxidiser



Packing group (DOT)	: III - Minor Danger
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Potassium Nitrate

Safety Data Sheet

DOT Special Provisions (49 CFR 172.102)	: A1 - Single packagings are not permitted on passenger aircraft. A29 - Combination packagings 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
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.

Additional information

Other information	: No supplementary information available.
State during transport (ADR-RID)	: as solid.

ADR

Transport document description	: UN 1486 Potassium nitrate, 5.1, III, (E)
Packing group (ADR)	: III
Class (ADR)	: 5.1 - Oxidizing substances
Hazard identification number (Kemler No.)	: 50
Classification code (ADR)	: O2
Danger labels (ADR)	: 5.1 - Oxidizing substances



Orange plates	:
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Tunnel restriction code	: E
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Transport by sea

UN-No. (IMDG)	: 1486
Class (IMDG)	: 5.1 - Oxidizing substances
EmS-No. (1)	: F-A
EmS-No. (2)	: S-Q

Potassium Nitrate

Safety Data Sheet

Air transport

UN-No.(IATA)	: 1486
Class (IATA)	: 5 - 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

SARA Section 313 - Emission Reporting	1 % Nitrate compounds (water dissociable)
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15.2. International regulations

CANADA

Potassium Nitrate (7757-79-1)

Listed on the Canadian DSL (Domestic Substances List) inventory.

WHMIS Classification	Class C - Oxidizing Material Class D Division 2 Subdivision B - Toxic material causing other toxic effects
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EU-Regulations

No additional information available

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

Ox. Sol. 3 H272

Full text of H-phrases: see section 16

Classification according to Directive 67/548/EEC or 1999/45/EC

O; R8

Full text of R-phrases: see section 16

15.2.2. National regulations

Potassium Nitrate (7757-79-1)

Not listed on the Canadian Ingredient Disclosure List

15.3. US State regulations

No additional information available

SECTION 16: Other information

Full text of H-phrases: see section 16:

Eye Irrit. 2A	Serious eye damage/eye irritation, Category 2A
Ox. Sol. 3	Oxidising Solids, Category 3
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
H272	May intensify fire; oxidiser
H315	Causes skin irritation
H319	Causes serious eye irritation
H335	May cause respiratory irritation

Potassium Nitrate

Safety Data Sheet

NFPA health hazard

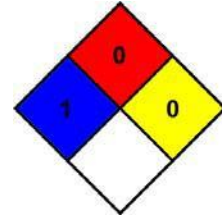
: 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

NFPA fire hazard

: 0 - Materials that will not burn.

NFPA reactivity

: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

Health

: 1 Slight Hazard - Irritation or minor reversible injury possible

Flammability

: 1 Slight Hazard

Physical

: 1 Slight Hazard

Personal Protection

: F