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Material Safety Data Sheet
POTASSIUM NITRATE

Section 1 - Product Identification

Synonyms : Potassium nitrate
Molecular Weight : 101.102 g/mol
Chemical Formula : KNO_3
Company Identification : Tradeasia International Pte. Limited
Address : 133 Cecil Street # 12-03 Keck Seng Tower, Singapore
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Recommended use of the chemical and restrictions on use
The product is used in industrial manufacturing, in particular in :

- Food industry
- Fertiliser industry
- Pharmaceutical industry

Section 2 – Composition/Information on Ingredients

Chemical Name	EC No/CAS No	Purity, %
Potassium nitrate	231-818-8; 7757-79-1	min. 99.9

Section 3 – Hazards Identification

3.1 Potential Acute Health Effects: Hazardous in case of skin contact (irritant), of eye contact (irritant), of inhalation. Slightly hazardous in case of ingestion.
3.2.Potential Chronic Health Effects: CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Classified POSSIBLE for human. DEVELOPMENTAL TOXICITY: Classified Reproductive system/toxin/female, Reproductive system/ toxin/male [SUSPECTED]. The substance may be toxic to blood, the reproductive system, liver, central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage.Classification of the substance according to GHS

Section 4 – First-Aid Measures

4.1. Description of first aid mesaures

Skin contact

Rinse with water. Soap may be used. Do not apply (chemical) neutralizing agents. Take victim to a doctor if irritation persists.

Eye contact

Rinse with water. Soap may be used. Do not apply (chemical) neutralizing agents. Take victim to a doctor if irritation persists.

Inhalation

If symptoms such as nose or throat irritation are observed, move to fresh air.

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. 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
N.A.

4.3. Indication of any immediate medical attention and special treatment needed
N.A.

Section 5 – Fire Fighting Measures

5.1. Flammability of the Product: Non combustible

5.2. Auto-Ignition Temperature: Not available.

5.3. Flash Points: Not available.

5.4. Flammable Limits: Not available.

5.5 Products of Combustion: These products are carbon oxides (CO, CO2).

5.6. Fire Hazards in Presence of Various Substances: Slightly flammable to flammable in presence of heat. Non-flammable in presence of shocks.

5.7. Explosion Hazards in Presence of Various Substances: Risks of explosion of the product in presence of mechanical impact: Not available. Slightly explosive in presence of open flames and sparks**.**

5.8. Fire Fighting Media and Instructions: SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

5.9. Special Remarks on Fire Hazards: N.A.

5.10. Special Remarks on Explosion Hazards: Fine dust dispersed in air in sufficient concentrations, and in the presences of an ignition source is a potential dust explosion hazard

Section 6 – Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures
Avoid dust formation. In case of exposure to prolonged or high level of airborne dust, wear a personal respirator in compliance with national legislation.

6.2. Methods and material for containment and cleaning up

Land spill
Vacuum, shovel or sweep up and place in containers for disposal in accordance with
applicable local regulations. Avoid contamination of water bodies during clean up and disposal. No personal protective equipment is needed to clean up land spills.

Spillage into water
Where possible, remove any intact containers from the water. Advise local water authority that none of the affected water should be used for irrigation or for the abstraction of potable water until natural dilution returns the boron value to its normal environmental background level (see sections 12, 13 and 15).

Section 7 – Handling and Storage

7.1. Precautions for safe Handling
To maintain package integrity and to minimise caking of the product, bags should be handled on a first-in first out basis. Good housekeeping and dust prevention procedures should be followed to minimise dust generation and accumulation. Your supplier can advise you on safe handling, please contact the supplier.
The product should be kept away from strong reducing agents. Apply above handling advice when mixing with other substances.

7.2. Conditions for safe storage, including any incompatibilities

No special handling precautions are required, but dry, indoor storage is recommended. No specific requirements. Provide appropriate ventilation and store bags such as to prevent any accidental damage.

Section 8 – Exposure Controls/Personal Protection

8.1. Appropriate engineering controls

Maintain air concentrations below occupational exposure standards.

8.2. Individual protection measures, such as personal protective equipment (PPE)

Respiratory protection

In case of prolonged exposure to dust wear a personal respirator in compliance with national legislation (make reference to the appropriate CEN standard)

Eyes and hands protection

Goggles and gloves are not required for normal industrial exposures, but may be warranted if environment is excessively dusty.

Section 9 – Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance : Colorless to white crystalline powder
Odour : Odourless
Odour threshold : N.A.
pH @ 20°C : N.A.
Melting point : 334°C
Boiling point : 400°C
Evaporation rate : N.A.
Flammability : N.A.
Upper/lower flammability or explosive limits : Non explosive
Vapour pressure : Negligible @ 20°C
Vapour density : N.A.
Relative density : N.A.
Solubility in water : Easily soluble in water
Partition coefficient: n-octanol/water : N.A
Auto-ignition temperature : N.A.
Decomposition temperature : H_2O @ 120°C
Viscosity : N.A.

9.2. Other information

Molecular weight : 101.102 g/mol
Specific gravity : 2.1 g/cm3

Section 10 – Stability and Reactivity

10.1. Stability: The product is stable.
10.2. Instability Temperature: Not available.
10.3. Conditions of Instability: Excess heat, dust generation
10.4. Incompatibility with various substances: Reactive with oxidizing agents.
10.5. Corrosivity: Non-corrosive in presence of glass.
10.6. Special Remarks on Reactivity: Gives nitrogen oxides, oxygen.
10.7. Special Remarks on Corrosivity: Not available.
10.8. Polymerization: Will not occur

Section 11 – Toxicological Information

11.1. Routes of Entry: Inhalation. Ingestion.
11.2. Toxicity to Animals: Acute oral toxicity (LD50): 3750 mg/kg[Rat].
11.3. Chronic Effects on Humans: TERATOGENIC EFFECTS: Classified POSSIBLE for human. DEVELOPMENTAL TOXICITY: Classified Reproductive system/toxin/female, Reproductive system/toxin/male [SUSPECTED]. May cause damage to the following organs: blood, the reproductive system, liver, central nervous system (CNS).
11.4. Other Toxic Effects on Humans: Hazardous in case of skin contact (irritant), of inhalation. Slightly hazardous in case of ingestion.
11.5. Special Remarks on Toxicity to Animals: Not available. Special Remarks on Chronic Effects on Humans: May cause adverse reproductive effects and birthdefects(teratogenic). May affect genetic material (mutagenic)
11.6. Special Remarks on other Toxic Effects on Humans: Acute Potential Health Effects: Skin: May cause skin irritation. Eyes: Dust may cause mechanical Inhalation: May cause respiratory tract irritation. Ingestion: Ingestion of large amounts may cause gastrointestinal tract irritation with gastric pain, nausea, and vomiting. May also affect behavior/central nervous system (tremor, convulsions, change in motor activity), and respiration (dyspnea). Chronic Potential Health Effects: Ingestion: Prolonged or repeated ingestion may affect behavior/central nervous system (sypmptoms similar to acute exposure) as well as liver, metabolism, blood, and urinary system.

Section 12 – Ecological Information

12.1. Ecotoxicity: Acute oral toxicity (LC50): 3750 mg/kg (fish)
12.2. BOD5 and COD: Not available.
12.3. Products of Biodegradation: Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.
12.5. Toxicity of the Products of Biodegradation: The product itself and its products of degradation are not toxic.

Section 13 – Disposal Considerations

13.1. Disposal methods
Waste must be disposed of in accordance with federal, state and local environmental control regulations

Section 14 – Transport Information

14.1. UN number : N.A.
14.2. UN proper shipping name : N.A
14.3. Transport of hazard classes : N.A
14.4. Packing group : N.A
14.5. Environmental hazards : N.A.
14.6. Special precautions for user : N.A
14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: N.A.

Section 15 – Regulatory Information

15.1. Federal and State Regulations: TSCA 8(b) inventory
15.2. Other Regulations: OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.
15.3. Other Classifications:
WHMIS (Canada): Not controlled under WHMIS (Canada).

DSCL (EEC): R20/21/22- Harmful by inhalation, in contact with skin and if swallowed. R36/38- Irritating to eyes and skin. R63- Possible risk of harm to the unborn child. S24/25- Avoid contact with skin and eyes.
15.4. HMIS (U.S.A.): Health Hazard: 1 Fire Hazard: 0 Reactivity: 1 Personal Protection: X
15.5. National Fire Protection Association (U.S.A.): Health: 1 Flammability: 0 Reactivity: 0 Specific hazard:
15.6. Protective Equipment: Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Splash goggles

Section 16 : Additional Information

16.1. Mainly changes made to the previous version of this Material Safety Data Sheet (MSDS):
• This MSDS complies with ISO 11014; the requirements of UN-GHS

Revision No	Revision content
05	• This SDS is updated in accordance with the GHS (Rev.6) (2015)-Guidance on the Compilation of Safety data Sheets. • This SDS is updated in line with Eti Maden Corporate identity.

16.2. List of abbreviation and acronyms used in this MSDS
SDS : Safety Data Sheets
Index N° : atomic number of the element most characteristic of the properties of the substance
CAS No : Chemical Abstracts Service number
EC No : EINECS Number : European Inventory of Existing Commercial Substances
Repr. Cat. 2 : Substance presumed human reproductive toxicant
Acute Oral Cat. 5 : Substance which is of relatively low acute oral toxicity.
GHS : Globally Harmonised System of Classification and Labelling
LD_{50} : Median Lethal Dose
LC_{50} : Lethal Concentration, 50%
N.A. : Not Applicable
OSHA : Occupational Safety & Health Administration
Cal OSHA : The State of California Division of Occupational Safety and Health (DOSH)
PEL : Permissible Exposure Limits
ACGIH : American Conference of Governmental Industrial Hygienists
TLV : Threshold Limit Value
Japanese MITI : Japanese Ministry of International Trade and Industry
EC_{50} : Half maximal effective concentration
UN : United Nations
U.S. EPA TSCA Inventory: Inventory of the chemical substances manufactured or processed in the United States according to Toxic Substances Control Act compiled and published under the autority of the Environmental Protection Agency
Canadian DSL: Canadian Domestic Substances List
16.3. List of relevant hazard statements and precautionary statements used in this MSDS
Hazard Statement
H361 d: Suspected of damaging the unborn child
H319: Causes serious eye irritation
H303: May be harmful if swallowed
Precautionary Statements
Prevention
P201: Obtain special instructions before use.

P202: Do not handle until all safety precautions have been read and understood.
P281: Use personal protective equipment as required.
P264: Wash eyes thoroughly after handling.
P280: Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response
P308 + P313: If exposed or concerned: get medical advice/attention.
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.
Storage
P405: Store locked up.
Disposal
P501: Dispose of contents/container to in accordance with local regulations.

16.4. Disclaimer of Liability

The information in this MSDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its accuracy, reliability or completeness. The conditions or methods of handling, storage use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. It is the user's responsibility to satisfy himself as to the suitableness and completeness of such information for his own particular use.

This MSDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS information may not be applicable.