

1. PRODUCT AND COMPANY IDENTIFICATION

Trade Name: Potassium Sodium Niobate

Chemical Formula: $K_{0.5}Na_{0.5}NbO_3$

Manufacturer Item Number: PO-4545

Manufacturer: Lorad Chemical Corporation
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2. HAZARD IDENTIFICATION

Signal Word: Warning

Pictograms:



Hazard Statements: H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

Precautionary Statements: P261 Avoid breathing dust / fume / gas / mist / vapors / spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves / eye protection / face protection.
P302+352 IF ON SKIN: Wash with plenty of soap and water.
P304+340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+351+338 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 or a physician if you feel unwell.
P332+313 If skin irritation occurs: Get medical advice / attention.
P337+313 If eye irritation persists: Get medical advice / attention.
P362 Take off contaminated clothing and wash before reuse.
P403+233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
P501 Dispose of contents / container to an approved waste disposal plant.

HMIS Health Ratings (0-4)

- Health: 1
- Flammability: 0
- Physical: 0

3. COMPOSITION

Additional Names: KNN; Potassium Sodium Niobium Oxide

| | |
|--------------------|-------------------|
| Percentage: | 100 wt% |
| CAS #: | 12196-68-8 |
| EC #: | No Data Available |

4. FIRST AID PROCEDURES

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| General Treatment | Consult a physician. Show this SDS to the doctor in attendance. Move out of dangerous area. |
| Special Treatment: | No Data Available. |
| Important Symptoms: | No Data Available. |
| Inhalation: | If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician. |
| Ingestion: | Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician. |
| Skin: | Wash off with soap and plenty of water. Consult a physician. |
| Eyes: | Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. |

5. FIREFIGHTING MEASURES

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| Flammability: | Not Flammable. |
| Special Hazards from Substance: | Potassium Oxides, Sodium Oxides, Niobium Oxides |
| Extinguishing Media: | Use water spray, alcohol resistant foam, dry chemical or carbon dioxide. |
| Special Fire Fighting Procedures: | Wear self contained breathing apparatus for firefighting if necessary. |

6. ACCIDENTAL RELEASE MEASURES

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| If Material is Released / Spilled: | Avoid dust formation. Avoid breathing dust, vapors, mist, or gas. Ensure adequate ventilation. Wear personal protective equipment and keep unprotected persons away. Sweep up or vacuum up spillage and collect in a suitable container for disposal. Dispose of waste in accordance with applicable federal, state, local, and provincial environmental regulations. |
| Environmental Precautions: | Prevent further leakage or spills if safe to do so. Do not allow to enter drain, sewers, or watercourses. |

7. HANDLING AND STORAGE

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| Handling Conditions: | Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. |
| Storage Conditions: | Keep container tightly closed in a dry and well-ventilated place. |
| Work / Hygienic Maintenance: | Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of the workday. |
| Ventilation: | Keep in a well-ventilated place. |

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

| Permissible Exposure Limits: | Authority | Basis | Limit | Remarks |
|--------------------------------|--|-------|-------|---|
| | - | - | - | Contains no substances with occupational exposure limits. |
| Threshold Limit Value: | Authority | Basis | Limit | Remarks |
| | - | - | - | Contains no substances with occupational exposure limits. |
| Special Equipment: | No Data Available. | | | |
| Respiratory Protection: | For nuisance exposure use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). | | | |
| Protective Gloves: | 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. | | | |
| Eye Protection: | Safety glasses with side shields. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU). | | | |
| Body Protection: | Wear appropriate protective clothing in relation to its type, to the concentration and amount of substances, and to the specific work place. | | | |

9. PHYSICAL AND CHEMICAL CHARACTERISTICS

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|--|--------------------|--|--------------------|
| Color: | White | Molecular Weight: | 191.51 g/mol |
| Forms: | Powder | Density: | No Data Available. |
| Odor: | No Data Available. | pH: | No Data Available. |
| Water Solubility: | No Data Available. | Auto-ignition Temperature: | No Data Available. |
| Boiling Point: | No Data Available. | Evaporation Rate: | No Data Available. |
| Melting Point / Freezing Point: | No Data Available. | Flammability or Explosive Limits: | No Data Available. |
| Vapor Pressure: | No Data Available. | Partition Coefficient: n-octanol/ water | No Data Available. |
| Vapor Density: | No Data Available. | Decomposition Temperature: | No Data Available. |
| Flash Point: | No Data Available. | Viscosity: | No Data Available. |

10. REACTIVITY

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| Stability: | Stable under recommended storage conditions. |
| Reacts with: | Strong acids, strong bases |
| Incompatible Conditions: | No Data Available |
| Hazardous Decomposition Products: | No Data Available |

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Eyes: Causes serious eye irritation.

Skin: Causes skin irritation.

Ingestion: No Data Available

Inhalation: May cause respiratory irritation.

Chronic Toxicity

Skin Corrosion / Irritation: Cause skin irritation; dermatitis.

Serious Eye Damage / Irritation: No Data Available.

Respiratory / Skin Sensitization: No Data Available.

Mutagenic Effects: No Data Available.

Reproductive / Teratogenic Effects: No Data Available.

Specific Target Organ Toxicity: No Data Available.
(single exposure)

Specific Target Organ Toxicity: No Data Available.
(repeated exposure)

Aspiration Hazard: No Data Available.

Other Adverse Effects: To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Carcinogenicity:

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable 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.

12. ECOLOGICAL INFORMATION

Aquatic Toxicity: No Data Available.

Persistence and degradability: No Data Available.

Bioaccumulative potential: No Data Available.

Notes: No Data Available.

13. DISPOSAL CONSIDERATIONS

Disposal: Offer surplus and non-recyclable solutions to a licensed disposal company. Dispose of in accordance with local, state, or national regulations.

14. TRANSPORTATION DATA

Hazardous:

DoT: Not Dangerous Goods.

IMDG: Not Dangerous Goods.

IATA: Not Dangerous Goods.

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|-----------------------|-------------------------|
| Pictogram: | N/A |
| Hazard Class: | N/A |
| Packing Group: | N/A |
| UN Number: | N/A |
| US DoT | Proper Name: N/A |
| | Marine Pollutant: |
| IMDG | Proper Name: N/A |
| | EMS-No: |
| IATA | Proper Name: N/A |

15. REGULATORY INFORMATION

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|---|---|
| SARA 302 Components | No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302. |
| SARA 313 Components | This material does not contain any chemical components with known CAS numbers that exceed the threshold (de minimis) reporting levels established by SARA Title III, Section 313. |
| SARA 311/312 Hazards | No SARA hazard. |
| Massachusetts Right to Know Components | No components are subject to the Ma. Right to Know Act. |
| Pennsylvania Right to Know Components | Potassium Sodium Niobate (CAS No. 12196-68-8). |
| New Jersey Right to Know Components | Potassium Sodium Niobate (CAS No. 12196-68-8). |
| California Prop. 65 Components | This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm. |

16. OTHER INFORMATION

Copyright 2019 Lorad Chemical Corporation. 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 does not constitute a hazard assessment and should not be used in place of the user's own assessment of work place risks as required by other health and safety legislation. The information in this sheet does not represent a guarantee of the properties of the product. Lorad Chemical Corporation and its Affiliates make no warranty with respect to the accuracy of the information or the suitability of this product for any particular application, and shall not be held liable for any damage resulting from handling or from contact with the above product.

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