MATERIAL SAFETY DATA SHEET

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Section 1 - Product and Company Information

Product Name	SODIUM NITRATE
Product Number	S8170
Brand	SIAL
Company	World Precision Instruments, Inc.
Street Address	175 Sarasota Center Blvd.
City, State, Zip, Country	Sarasota FL 34240 US
Technical Phone:	941-371-1003
Emergency Phone:	941-371-1003
Fax:	941-377-5428

Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313
SODIUM NITRATE	7631-99-4	No

Formula	NaNO3
Synonyms	Chile saltpeter * Cubic niter * Nitrate de sodium (French) * Nitratine * Nitric acid, sodium salt * Soda niter * Sodium saltpeter
RTECS Number:	WC5600000

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Oxidizing. Harmful.
Contact with combustible material may cause fire. Harmful if swallowed. Irritating to eyes, respiratory system and skin.
Target organ(s): Blood. Nerves.

HMIS RATING

HEALTH: 1
FLAMMABILITY: 0
REACTIVITY: 3

NFPA RATING

HEALTH: 1
FLAMMABILITY: 0
REACTIVITY: 3

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

INHALATION EXPOSURE

If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.

DERMAL EXPOSURE
In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

EYE EXPOSURE
In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Section 5 - Fire Fighting Measures

FLASH POINT
N/A

AUTOIGNITION TEMP
N/A

FLAMMABILITY
N/A

EXTINGUISHING MEDIA
Suitable: Carbon dioxide, dry chemical powder, or appropriate foam.

FIREFIGHTING
Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Specific Hazard(s): Emits toxic fumes under fire conditions. Contact with other material may cause fire. May accelerate combustion.

Section 6 - Accidental Release Measures

PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL
Evacuate area.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)
Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP
Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

HANDLING
User Exposure: Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

STORAGE
Suitable: Keep tightly closed. Keep away from combustible materials, heat, sparks, and open flame.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS
Use only in a chemical fume hood. Safety shower and eye bath.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator.
Hand: Compatible chemical-resistant gloves.
Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES

Wash thoroughly after handling. Remove and wash contaminated clothing promptly. Discard contaminated shoes.

Section 9 - Physical/Chemical Properties

Appearance: Physical State: Solid

Property	Value	At Temperature or Pressure
Molecular Weight	84.99 AMU	
pH	N/A	
BP/BP Range	N/A	
MP/MP Range	306 °C	
Freezing Point	N/A	
Vapor Pressure	N/A	
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
SG/Density	2.261 g/cm3	
Bulk Density	N/A	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	N/A	
Surface Tension	N/A	
Partition Coefficient	N/A	
Decomposition Temp.	N/A	
Flash Point	N/A	
Explosion Limits	N/A	
Flammability	N/A	
Autoignition Temp	N/A	
Refractive Index	N/A	
Optical Rotation	N/A	
Miscellaneous Data	N/A	
Solubility	N/A	

N/A = not available

Section 10 - Stability and Reactivity

STABILITY

Stable: Stable.
Conditions to Avoid: Mixtures of sodium nitrate with powdered aluminum and an oxidant can result in a low-temperature exothermic reaction at 705°C in the presence of moisture. Interaction of molten sodium nitrate and magnesium results in ignition. Mixing sodium nitrate with sodium results in the formation of the explosive sodium nitroxylate. A mixture of sodium nitrate, arsenic

trioxide, iron (II) sulfate spontaneously ignites. Sodium nitrate in contact with jute, wood and cellulose materials will ignite them at 240°C but in the presence of up to 16% magnesium chloride ignition occurs at 130°C. Heating sodium nitrate with: sodium phosphinate, sodium thiosulfate, sulfamates, powdered antimony, boron phosphide, powdered charcoal, peroxyformic acid, barium thiocyanate, metal cyanides results in explosions. When phenol was added to trifluoroacetic acid/sodium nitrate, a hazardous rapid exothermic reaction occurred
Materials to Avoid: Strong reducing agents, Finely powdered metals, Strong acids, Organic materials.

HAZARDOUS DECOMPOSITION PRODUCTS
Hazardous Decomposition Products: Nitrogen oxides.

HAZARDOUS POLYMERIZATION
Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

ROUTE OF EXPOSURE
Skin Contact: Causes skin irritation.
Skin Absorption: May be harmful if absorbed through the skin.
Eye Contact: Causes eye irritation.
Inhalation: Material is irritating to mucous membranes and upper respiratory tract. May be harmful if inhaled.
Ingestion: Harmful if swallowed.

TARGET ORGAN(S) OR SYSTEM(S)
Central nervous system. Blood.

SIGNS AND SYMPTOMS OF EXPOSURE
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

TOXICITY DATA

Oral
Child
22.5 mg/kg
LDLO
Remarks: Blood:Methemoglobinemia-Carboxyhemoglobin.

Oral
Rat
1267 mg/kg
LD50

Intravenous
Mouse
175 MG/KG
LD50

Oral
Rabbit
2680 mg/kg
LD50

CHRONIC EXPOSURE - CARCINOGEN

Species: Rat
Route of Application: Oral

Dose: 100 GM/KG
Exposure Time: 2Y
Frequency: C
Result: Liver:Tumors. Tumorigenic:Equivocal tumorigenic agent by RTECS criteria.

Species: Rat
Route of Application: Oral
Dose: 1825 GM/KG
Exposure Time: 2Y
Frequency: C
Result: Tumorigenic Effects: Testicular tumors. Skin and Appendages: Other: Tumors. Tumorigenic:Equivocal tumorigenic agent by RTECS criteria.

Species: Rat
Route of Application: Oral
Dose: 913 GM/KG
Exposure Time: 2Y
Frequency: C
Result: Skin and Appendages: Other: Tumors. Tumorigenic Effects: Testicular tumors. Tumorigenic:Equivocal tumorigenic agent by RTECS criteria.

CHRONIC EXPOSURE - MUTAGEN

Species: Human
Dose: 6 MMOL/L
Cell Type: HeLa cell
Mutation test: Unscheduled DNA synthesis

Species: Rat
Route: Oral
Dose: 13 GM/KG
Exposure Time: 6W
Mutation test: Morphological transformation.

Species: Rat
Route: Oral
Dose: 78500 UG/KG
Mutation test: Cytogenetic analysis

Species: Mouse
Route: Oral
Dose: 78500 UG/KG
Mutation test: Micronucleus test

Species: Mouse
Route: Oral
Dose: 7067 MG/KG
Mutation test: Cytogenetic analysis

Species: Mouse
Route: Oral
Dose: 16800 MG/KG
Exposure Time: 2W
Mutation test: sperm

Species: Hamster
Route: Oral
Dose: 250 MG/KG
Mutation test: Micronucleus test

Species: Hamster
Route: Oral
Dose: 250 MG/KG
Mutation test: Morphological transformation.

Species: Hamster
Dose: 7200 MG/L
Exposure Time: 48H
Cell Type: fibroblast
Mutation test: Cytogenetic analysis

Species: Hamster
Dose: 5700 MG/L
Cell Type: lung
Mutation test: Cytogenetic analysis

Species: Hamster
Dose: 125 MG/KG
Cell Type: Embryo
Mutation test: Host-mediated assay

CHRONIC EXPOSURE - REPRODUCTIVE HAZARD

Species: Mouse
Dose: 16800 MG/KG
Route of Application: Oral
Exposure Time: (14D MALE)
Result: Paternal Effects: Spermatogenesis (including genetic material, sperm morphology,motility, and count).

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION
Contact a licensed professional waste disposal service to dispose of this material. Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT
Proper Shipping Name: Sodium nitrate
UN#: 1498
Class: 5.1
Packing Group: Packing Group III
Hazard Label: Oxidizer
PIH: Not PIH

IATA
Proper Shipping Name: Sodium nitrate
IATA UN Number: 1498
Hazard Class: 5.1
Packing Group: III

Section 15 - Regulatory Information

EU ADDITIONAL CLASSIFICATION
Symbol of Danger: O-Xn

Indication of Danger: Oxidizing. Harmful.
R: 8-22-36/37/38
Risk Statements: Contact with combustible material may cause fire. Harmful if swallowed. Irritating to eyes, respiratory system and skin.
S: 17-26-27-36/37/39
Safety Statements: Keep away from combustible material. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Take off immediately all contaminated clothing. Wear suitable protective clothing, gloves, and eye/face protection.

US CLASSIFICATION AND LABEL TEXT
Indication of Danger: Oxidizing. Harmful.
Risk Statements: Contact with combustible material may cause fire. Harmful if swallowed. Irritating to eyes, respiratory system and skin.
Safety Statements: Keep away from combustible material. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Take off immediately all contaminated clothing. Wear suitable protective clothing, gloves, and eye/face protection.
US Statements: Target organ(s): Blood. Nerves.

UNITED STATES REGULATORY INFORMATION
SARA LISTED: No
TSCA INVENTORY ITEM: Yes

CANADA REGULATORY INFORMATION
WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.
DSL: Yes
NDSL: No

Section 16 - Other Information

DISCLAIMER
For R&D use only. Not for drug, household or other uses.