

Material Safety Data Sheet

Date Printed: 19/MAY/2005

Date Updated: 13/MAR/2004

Version 1.2

According to 91/155/EEC

Classified as Hazardous according to the criteria of EU Annex 1 and NOHSC.

1 - Product and Company Information

Product Name	SODIUM NITRATE, 99.995%
Product Number	229938
Company	Sigma-Aldrich Pty, Ltd Unit 2, 14 Anella Avenue Castle Hill NSW 1765 Australia
Technical Phone #	+61 2 9841 0555
Fax	+61 2 9841 0500
Emergency Phone #	+61 2 9841 0566

2 - Composition/Information on Ingredients

Product Name	CAS #	EC no	Annex I Index Number
SODIUM NITRATE	7631-99-4	231-554-3	None
Formula	NaNO3		
Molecular Weight	84.99 AMU		
Synonyms	Chile saltpeter * Cubic niter * Nitrate de sodium (French) * Nitratine * Nitric acid, sodium salt * Soda niter * Sodium saltpeter		

3 - Hazards Identification

SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT
Contact with combustible material may cause fire. Harmful if
swallowed. Irritating to eyes, respiratory system and skin.

4 - First Aid Measures

AFTER INHALATION

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

AFTER SKIN CONTACT

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

AFTER EYE CONTACT

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.

AFTER INGESTION

If swallowed, wash out mouth with water provided person is

conscious. Call a physician.

5 - Fire Fighting Measures

EXTINGUISHING MEDIA

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

SPECIAL RISKS

Specific Hazard(s): Emits toxic fumes under fire conditions. Contact with other material may cause fire. May accelerate combustion.

SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

6 - Accidental Release Measures

PERSONAL PRECAUTION PROCEDURES 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.

7 - Handling and Storage

HANDLING

Directions for Safe Handling: Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

STORAGE

Conditions of Storage: Keep tightly closed. Keep away from combustible materials, heat, sparks, and open flame.

8 - Exposure Controls / Personal Protection

ENGINEERING CONTROLS

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

GENERAL HYGIENE MEASURES

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

PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection: Government approved respirator.
Hand Protection: Compatible chemical-resistant gloves.
Eye Protection: Chemical safety goggles.

9 - Physical and Chemical Properties

Appearance	Physical State: Solid	
Property	Value	At Temperature or Pressure
pH	N/A	

BP/BP Range	N/A
MP/MP Range	306 °C
Flash Point	N/A
Flammability	N/A
Autoignition Temp	N/A
Oxidizing Properties	N/A
Explosive Properties	N/A
Explosion Limits	N/A
Vapor Pressure	N/A
SG/Density	2.261 g/cm3
Partition Coefficient	N/A
Viscosity	N/A
Vapor Density	N/A
Saturated Vapor Conc.	N/A
Evaporation Rate	N/A
Bulk Density	N/A
Decomposition Temp.	N/A
Solvent Content	N/A
Water Content	N/A
Surface Tension	N/A
Conductivity	N/A
Miscellaneous Data	N/A
Solubility	N/A

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 nitroxyate. 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

11 - Toxicological Information

RTECS NUMBER: WC5600000

ACUTE TOXICITY

LDLO
 Oral
 Child
 22.5 mg/kg

Remarks: Blood:Methemoglobinemia-Carboxyhemoglobin.

LD50
Oral
Rat
1267 mg/kg

LD50
Intravenous
Mouse
175 MG/KG

LD50
Oral
Rabbit
2680 mg/kg

SIGNS AND SYMPTOMS OF EXPOSURE

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

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 INFORMATION

Blood. Central nervous system.

CHRONIC EXPOSURE - CARCINOGEN

Rat
Route of Application: Oral
Exposure Time: 2Y
Result: Tumorigenic:Equivocal tumorigenic agent by RTECS criteria. Liver:Tumors.

Rat
Route of Application: Oral
Exposure Time: 2Y
Result: Tumorigenic:Equivocal tumorigenic agent by RTECS criteria. Skin and Appendages: Other: Tumors. Tumorigenic Effects: Testicular tumors.

Rat
Route of Application: Oral
Exposure Time: 2Y
Result: Tumorigenic:Equivocal tumorigenic agent by RTECS criteria. Skin and Appendages: Other: Tumors. Tumorigenic Effects: Testicular tumors.

CHRONIC EXPOSURE - MUTAGEN

Human
6 MMOL/L
Cell Type: HeLa cell
Unscheduled DNA synthesis

Rat

13 GM/KG
Oral
6W
Morphological transformation.

Rat
78500 UG/KG
Oral
Cytogenetic analysis

Mouse
78500 UG/KG
Oral
Micronucleus test

Mouse
7067 MG/KG
Oral
Cytogenetic analysis

Mouse
16800 MG/KG
Oral
2W
sperm

Hamster
250 MG/KG
Oral
Micronucleus test

Hamster
250 MG/KG
Oral
Morphological transformation.

Hamster
7200 MG/L
48H
Cell Type: fibroblast
Cytogenetic analysis

Hamster
5700 MG/L
Cell Type: lung
Cytogenetic analysis

Hamster
125 MG/KG
Cell Type: Embryo
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).

12 - Ecological Information

No data available.

13 - Disposal Considerations

SUBSTANCE DISPOSAL

Contact a licensed professional waste disposal service to dispose of this material. Observe all federal, state, and local environmental regulations.

14 - Transport Information

RID/ADR

UN#: 1498
Class: 5.1
PG: III
Proper Shipping Name: Sodium nitrate

IMDG

UN#: 1498
Class: 5.1
PG: III
Proper Shipping Name: Sodium nitrate
Marine Pollutant: No
Severe Marine Pollutant: No

IATA

UN#: 1498
Class: 5.1
PG: III
Proper Shipping Name: Sodium nitrate
Inhalation Packing Group I: No

15 - Regulatory Information

CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES

INDICATION OF DANGER: O Xn

Oxidizing. Harmful.

R-PHRASES: 8 22 36/37/38

Contact with combustible material may cause fire. Harmful if swallowed. Irritating to eyes, respiratory system and skin.

S-PHRASES: 17 26 27 36/37/39

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.

COUNTRY SPECIFIC INFORMATION

Germany

WGK: 1

SWITZERLAND

SWISS POISON CLASS: 4

16 - Other Information

WARRANTY

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 is based on the present state of our knowledge and is applicable to the product with regard to

appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2005 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

DISCLAIMER

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