

Material Safety Data Sheets

1. IDENTIFICATION

Product Name	Sodium Nitrate
Other Names	Nitrate of Soda; Sodium Nitrate Prilled; Sodium Nitrate Technical
Uses	Catalyst; fertiliser; fluxing agent; oxidant; preservative; propellant.
Chemical Family	No Data Available
Chemical Formula	NaNO ₃
Chemical Name	Nitric acid, sodium salt
Product Description	No Data Available
Company	Arman sina.co
Contact Information	info@armansina.com www.armansina.com

2. HAZARD IDENTIFICATION

Hazard Categories	Oxidising Solids Serious Eye Damage/Irritation
Risk Phrases	May intensify fire; oxidizer. Causes serious eye irritation.
Safety Phrases	Keep away from heat. Take any precaution to avoid mixing with combustibles/organic material. Wear protective gloves/eye protection/face protection. In case of fire: Use water for extinction. If eye irritation persists: Get medical advice. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Dispose of contents/container in accordance with local / regional / national / international regulations.

Symbol



3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Sodium nitrate	NaNO ₃	7631-99-4	>98 - 100 %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed	IF SWALLOWED: Rinse mouth, then drink plenty of water. Do not induce vomiting unless directed to do so by medical personnel. Call a Poison Centre or doctor/physician for advice. Never give anything by mouth to an unconscious person.
Eye	IF IN EYES: Immediately flush eyes with running water for several minutes, holding eyelids open and occasionally lifting the upper and lower lids. Remove contact lenses if present and easy to do. Continue rinsing for at least 15 minutes. If eye irritation persists, get medical advice/attention.
Skin	IF ON SKIN: Remove contaminated clothing and shoes immediately. Wash skin with plenty of soap and water. In case of gross contamination, drench contaminated clothing and skin with plenty of water before removing clothes. If skin irritation occurs, get medical advice/attention. Wash contaminated clothing and shoes before reuse.
Inhaled	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If respiratory symptoms persist, get medical advice/attention. Apply resuscitation if victim is not breathing - Administer oxygen if breathing is difficult.
Advice to Doctor	Treat symptomatically (symptoms may be delayed). May cause methemoglobinemia. Keep victim calm and warm - Obtain immediate medical care. Ensure that attending medical personnel are aware of identity and nature of the product(s) involved, and take precautions to protect themselves.

Medical Conditions Aggravated by No information available.

Exposure

5. FIRE FIGHTING MEASURES

General Measures	If safe to do so, move undamaged containers from fire area. Do not move cargo if cargo has been exposed to heat. Large fire: Flood fire area with water from a protected position. Cool containers with water spray until well after fire is out - If impossible, withdraw from area and let fire burn. Avoid getting water inside containers: a violent reaction may occur. Dam fire control water for later disposal. *When any large containers are involved in a fire, consider initial evacuation of areas within 800 m in all directions.
Flammability Conditions	OXIDISING SUBSTANCE: Not combustible; however, Will accelerate burning when involved in a fire. May intensify fire; oxidizer.
Extinguishing Media	Use flooding quantities of water for extinction - Do not use dry chemicals, Carbon dioxide (CO2) or foam.
Fire and Explosion Hazard	May explode from heating, shock, friction or contamination. May ignite combustibles. Containers may explode when heated.
Hazardous Products of Combustion	Decomposes on heating emitting irritating and/or toxic fumes, including oxides of Nitrogen (brown fumes).
Special Fire Fighting Instructions	Contain fire control water for later disposal - Runoff may create fire or explosion hazard and may pollute waterways.
Personal Protective Equipment	Wear self-contained breathing apparatus (SCBA) and chemical splash suit. Structural firefighter's uniform will provide limited protection.
Flash Point	No Data Available
Lower Explosion Limit	No Data Available
Upper Explosion Limit	No Data Available
Auto Ignition Temperature	No Data Available
Hazchem Code	1Z

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Ensure adequate ventilation. ELIMINATE all ignition sources - Prevent exposure to heat. Do not contaminate - Keep combustibles away from spilled material. Avoid generating dust. Avoid breathing dust/vapours and contact with eyes, skin and clothing.
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Clean Up Procedures	Use clean, non-sparking tools to transfer material to a clean, dry container for recovery or disposal (see SECTION 13). Move container from spill area.
Containment	Stop leak if safe to do so - Prevent entry into waterways, drains or confined areas. Use water spray to knock down vapours or divert vapour clouds.
Decontamination	Wash away remainder with plenty of water.
Environmental Precautionary Measures	Spillages and decontamination runoff should be prevented from entering drains and watercourses.
Evacuation Criteria	Spill or leak area should be isolated immediately. Keep unauthorised personnel away. Keep upwind and to higher ground. Large spill: Immediately contact Police or Fire Brigade; Consider initial downwind evacuation of areas within at least 100 m.
Personal Precautionary Measures Do not touch damaged containers or spilled material unless wearing appropriate protective clothing (see SECTION 8).	

7. HANDLING AND STORAGE

Handling	Safety showers and eyewash facilities should be provided within the immediate work area for emergency use. Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Avoid generating dust. Avoid breathing dust/vapours and contact with eyes, skin and clothing. Do not ingest. Wear protective gloves/protective clothing/eye protection/face protection (see SECTION 8). Keep away from heat, hot surfaces, sparks, open flames and other ignition sources - No smoking.
Storage	Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep container tightly closed when not in use. Protect from moisture. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources - No smoking. Keep away from clothing, other combustible materials and incompatible materials (see SECTION 10).
Container	Keep only in the original container.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	No specific exposure standards are available for this product. For dusts from solid substances without specific occupational exposure standards: - Safe Work Australia Exposure Standard (Nuisance dusts): 8 hr TWA = 10 mg/m³ (measured as inhalable dust). - New Zealand WES (Particulates not otherwise classified): TWA = 10 mg/m³; TWA = 3 mg/m³ (respirable dust). DECOMPOSITION PRODUCT: Nitrogen dioxide: - Safe Work Australia Exposure Standard: TWA = 3 ppm (5.6 mg/m³); STEL = 5 ppm (9.4 mg/m³). - New Zealand Workplace Exposure Standard [Next review: 2022]: Interim WES-TWA = 1 ppm (1.9 mg/m³).
Exposure Limits	No Data Available
Biological Limits	DNEL Values for Workers: - Dermal (long-term, systemic effects): 20.8 mg/kg/day. - Inhalation (long-term, systemic effects): 36.7 mg/m³. PNEC Values: - Freshwater: 0.45 mg/L - Marine water: 0.045 mg/L - Intermittent releases: 4.5 mg/L - Sewage treatment plant (STP): 18 mg/L
Engineering Measures	A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.
Personal Protection Equipment	- Respiratory protection: In case of inadequate ventilation, wear respiratory protection. Recommended: Dust mask/particulate filter respirator (refer to AS/NZS 1715 & 1716). - Eye/face protection: Wear appropriate eye protection to prevent eye contact. Recommended: Chemical goggles. - Hand protection: Wear protective gloves. Recommended: Impervious gloves, e.g. Nitrile rubber. - Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Overalls; Boots.
Special Hazards Precautions	No information available.
Work Hygienic Practices	Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Take off contaminated clothing and wash before storage or reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid
Appearance	Crystalline or prilled
Odour	Odourless
Colour	White
pH	8 - 10 (5% aqueous solution)
Vapour Pressure	Considered negligible (@ No Data Available)
Relative Vapour Density	No Data Available
Boiling Point	No Data Available
Melting Point	306 - 307 ° C
Freezing Point	No Data Available
Solubility	Soluble in water (88 g/100 ml)
Specific Gravity	2.26
Flash Point	No Data Available
Auto Ignition Temp	No Data Available
Evaporation Rate	No Data Available
Bulk Density	No Data Available
Corrosion Rate	No Data Available
Decomposition Temperature	>550 ° C
Density	No Data Available
Specific Heat	No Data Available
Molecular Weight	No Data Available
Net Propellant Weight	No Data Available
Octanol Water Coefficient	No Data Available
Particle Size	No Data Available
Partition Coefficient	No Data Available
Saturated Vapour Concentration	No Data Available
Vapour Temperature	No Data Available
Viscosity	No Data Available
Volatile Percent	No Data Available
VOC Volume	No Data Available
Additional Characteristics	Hygroscopic: absorbs moisture or water from surrounding air.
Potential for Dust Explosion	No information available.
Fast or Intensely Burning Characteristics	May explode from heating, shock, friction or contamination.
Flame Propagation or Burning Rate of Solid Materials	No information available.
Non-Flammables That Could Contribute Unusual Hazards to a Fire	No information available.
Properties That May Initiate or Contribute to Fire Intensity	OXIDISING SUBSTANCE: Not combustible; however, Will accelerate burning when involved in a fire. May intensify fire; oxidizer. May ignite combustibles.
Reactions That Release Gases or Vapours	Decomposes on heating emitting irritating and/or toxic fumes, including oxides of Nitrogen (brown fumes), Sodium nitrite and Sodium oxide.
Release of Invisible Flammable Vapours and Gases	No information available.

10. STABILITY AND REACTIVITY

General Information	No hazardous reactions when handled and stored according to provisions.
Chemical Stability	Stable under normal storage and temperature conditions.

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General Information	No hazardous reactions when handled and stored according to provisions.
Chemical Stability	Stable under normal storage and temperature conditions.
Conditions to Avoid	Avoid generating dust. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Keep away from clothing and other combustible materials.
Materials to Avoid	Incompatible/reactive with flammable, combustible and reducing agents; Ammonium compounds; Strong acids.
Hazardous Decomposition Products	Decomposes on heating emitting irritating and/or toxic fumes, including oxides of Nitrogen (brown fumes), Sodium nitrite and Sodium oxide.
Hazardous Polymerisation	No information available.

11. TOXICOLOGICAL INFORMATION

General Information	- Acute toxicity: Based on available data, the classification criteria are not met. May be harmful if swallowed. Ingestion in large quantities may cause Gastrointestinal complaints. Absorption of nitrates by ingestion, inhalation or through burnt or broken skin may cause dilation of the blood vessels by direct smooth muscle relaxation with a subsequent lowering of blood pressure and may also cause breathing difficulties, cyanosis and methaemoglobinaemia. - Skin corrosion/irritation: Based on available data, the classification criteria are not met. May cause irritation. Non-irritant (Rabbit) [Equivalent/similar to OECD Guideline 404; Data obtained by analogy]. - Eye damage/irritation: Causes serious eye irritation. Irritant (Rabbit) [OECD Guideline 405]. - Respiratory/skin sensitisation: Based on available data, the classification criteria are not met. Not sensitising (Mouse) [OECD Guideline 429]. - Germ cell mutagenicity: Based on available data, the classification criteria are not met. Overall assessment of data indicates that the product is not genotoxic in vitro/in vivo. - Carcinogenicity: Based on available data/literature information, the classification criteria are not met. If nitrosating agents are used with this product, nitrosamines may form. Some nitrosamines have been shown to be carcinogenic in tests with laboratory animals. - Reproductive toxicity: Based on available data, the classification criteria are not met. At the highest dose tested, no adverse effects on sexual function, fertility or development were observed in a repeated dose toxicity study [OECD Guideline 422; Data obtained from chemically related substance]. - STOT (single exposure): Based on available data, the classification criteria are not met. May cause irritation to the respiratory tract. Thermal decomposition can lead to the release of irritating gases and vapours (Delayed adverse effects possible). - STOT (repeated exposure): Based on available data, the classification criteria are not met. - Aspiration toxicity: Based on available data, the classification criteria are not met. Physiochemical/toxicological data does not indicate a potential aspiration hazard.
Acute	
Ingestion	Acute toxicity (Oral): - LD50, Rat: >2,000 mg/kg bw. [OECD TG 425; Data obtained by analogy].
Other	Acute toxicity (Dermal): - LD50, Rat: >5,000 mg/kg bw. [OECD TG 402; Data obtained by analogy].
Inhalation	Acute toxicity (Inhalation): - LC50, Rat: >0.527 mg/L (maximum achievable concentration, 4 h) [OECD TG 403; Data obtained by analogy].
Carcinogen Category	None

12. ECOLOGICAL INFORMATION

Ecotoxicity	Aquatic toxicity: - LC50, Fish (freshwater): 6,000 mg/L (96 h) [Literature information]. - LC50, Fish (marine water): 4,400 mg/L (96 h) [Literature information]. - EC50, Crustacea (Daphnia magna): 8,600 mg/L (24 h) [Literature information].
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	- EC50, Algae (several species): >1,700 mg/L (10 d) [Literature information].
Persistence/Degradability	In aqueous compartments, the substance will dissociate into sodium and nitrate ions. Sodium ions are not subject to further degradation. Under anoxic conditions, nitrate is subjected to denitrification and is ultimately converted into molecular Nitrogen as part of the Nitrogen cycle.
Mobility	Expected to be highly mobile in soil. Nitrate has low potential for adsorption; Portion not taken up by plants can leach to ground water. Sodium can participate in ion exchange processes.
Environmental Fate	The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment; however, May cause eutrophication at very low concentration. Prevent entry into drains and waterways. *Excess nitrate leaching may enrich waters leading to eutrophication.
Bioaccumulation Potential	Sodium nitrate has low potential for bioaccumulation based on physio-chemical properties (Material highly soluble in water).
Environmental Impact	No Data Available

13. DISPOSAL CONSIDERATIONS

General Information	This material and its container must be disposed of as hazardous waste and in accordance with local/regional/national regulations.
Special Precautions for Land Fill	No information available.

14. TRANSPORT INFORMATION

Land Transport

Proper Shipping Name	SODIUM NITRATE
Class	5.1 Oxidising Substances
Subsidiary Risk(s)	No Data Available
EPG	31 Oxidizing Substances
UN Number	1498
Hazchem	1Z
Pack Group	III
Special Provision	No Data Available

Sea Transport

Proper Shipping Name	SODIUM NITRATE
Class	5.1 Oxidising Substances
Subsidiary Risk(s)	No Data Available
UN Number	1498
Hazchem	1Z
Pack Group	III
Special Provision	No Data Available
EMS	F-A, S-Q
Marine Pollutant	No

Air Transport

Proper Shipping Name	SODIUM NITRATE
Class	5.1 Oxidising Substances
Subsidiary Risk(s)	No Data Available
UN Number	1498
Hazchem	1Z
Pack Group	III
Special Provision	No Data Available

16. OTHER INFORMATION

Revision 2

Key/Legend

< Less Than
> Greater Than
atm Atmosphere
CAS Chemical Abstracts Service (Registry Number)
cm² Square Centimetres
CO₂ Carbon Dioxide
COD Chemical Oxygen Demand
deg C (° C) Degrees Celcius
deg F (° F) Degrees Farenheit
g Grams
g/cm³ Grams per Cubic Centimetre
g/l Grams per Litre
HSNO Hazardous Substance and New Organism
IDLH Immediately Dangerous to Life and Health
immiscible Liquids are insoluable in each other.
inHg Inch of Mercury
inH₂O Inch of Water
K Kelvin
kg Kilogram
kg/m³ Kilograms per Cubic Metre
lb Pound
LC₅₀ LC stands for lethal concentration. LC₅₀ is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours.
LD₅₀ LD stands for Lethal Dose. LD₅₀ is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals.
ltr or L Litre
m³ Cubic Metre
mbar Millibar
mg Milligram
mg/24H Milligrams per 24 Hours
mg/kg Milligrams per Kilogram
mg/m³ Milligrams per Cubic Metre
Misc or Miscible Liquids form one homogeneous liquid phase regardless of the amount of either component present.

mm Millimetre
mmH₂O Millimetres of Water
mPa.s Millipascals per Second
N/A Not Applicable
NIOSH National Institute for Occupational Safety and Health
NOHSC National Occupational Health and Safety Commission
OECD Organisation for Economic Co-operation and Development
Oz Ounce
PEL Permissible Exposure Limit
Pa Pascal
ppb Parts per Billion
ppm Parts per Million
ppm/2h Parts per Million per 2 Hours
ppm/6h Parts per Million per 6 Hours
psi Pounds per Square Inch
R Rankine
RCP Reciprocal Calculation Procedure
STEL Short Term Exposure Limit
TLV Threshold Limit Value
tne Tonne
TWA Time Weighted Average
ug/24H Micrograms per 24 Hours
UN United Nations
wt Weight