SAFETY DATA SHEET

SODIUM NITRITE

CAS No.: 7632-00-0

This Safety Data Sheet is issued by Suraj Chemicals as the distributor/supplier of record, based on manufacturer and published GHS / regulatory reference data for this substance. Users should also consult the specific manufacturer's SDS where available.

1. IDENTIFICATION

GHS Product identifier

SODIUM NITRITE

CAS: 7632-00-0

Other means of identification

Not relevant

Recommended use of the chemical and restrictions on use

Relevant uses: Corrosion inhibitor in metalworking fluids and closed-loop cooling systems, curing agent in meat processing (permitted food-grade only), intermediate for dye and rubber chemical manufacture, boiler water treatment. For industrial user only.

Uses advised against: All uses not specified in this section or in section 7.3.

Supplier's details

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2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

GHS:
Classification of this product has been carried out in accordance with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Ox. Sol. 2	Oxidising solid, Category 2, H272
Acute Tox. 3	Acute oral toxicity, Category 3, H301
Aquatic Acute 1	Hazardous to the aquatic environment, acute hazard, Category 1, H400

GHS label elements, including precautionary statements

GHS: Danger

Hazard statements

Ox. Sol. 2: H272 – May intensify fire; oxidizer.
Acute Tox. 3: H301 – Toxic if swallowed.
Aquatic Acute 1: H400 – Very toxic to aquatic life.

Precautionary statements

P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P220: Keep away from clothing and other combustible materials.
P264: Wash hands thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P273: Avoid release to the environment.
P280: Wear protective gloves/eye protection.
P301+P310: IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P321: Specific treatment (see supplemental first aid information on this label).
P330: Rinse mouth.
P370+P378: In case of fire: Use water spray/fog to extinguish.
P391: Collect spillage.
P501: Dispose of contents/container in accordance with local/national regulations.

Other hazards which do not result in classification

Toxic if swallowed, with methemoglobinemia as the specific mechanism of acute toxicity (antidote: methylene blue, administered by medical personnel only). Contact with acids liberates toxic nitrogen oxide fumes. Not classified as PBT or vPvB.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substances

Chemical description: SODIUM NITRITE

In accordance with Annex 4.3.3 of the GHS, the product contains:

Identification	Chemical Name / Classification	Concentration
CAS: 7632-00-0	SODIUM NITRITE — Ox. Sol. 2: H272; Acute Tox. 3: H301; Aquatic Acute 1: H400 – Danger	≥ 98% (technical/industrial grade; grade-specific assay available on request)

To obtain more information on the hazards of the substances, consult sections 11, 12 and 16.

Mixtures

Non-applicable

4. FIRST AID MEASURES

Description of necessary first-aid measures

Request medical assistance immediately, showing the SDS of this product.

By inhalation

Remove the person affected from the area of exposure to fresh air and keep at rest. If dust has been inhaled and irritation or breathing difficulty persists, seek medical attention.

By skin contact

Remove contaminated clothing and footwear. Wash affected skin thoroughly with plenty of water and soap. If irritation develops or persists, seek medical attention.

By eye contact

Rinse eyes thoroughly with lukewarm water for at least 15 minutes, holding eyelids open. Remove contact lenses if present and easy to do. Seek medical attention if irritation persists.

By ingestion/aspiration

Rinse mouth with water. Do NOT induce vomiting. If conscious, give plenty of water to drink. Seek medical attention immediately, especially if large quantities were ingested.

Most important symptoms/effects, acute and delayed

Acute and delayed effects are indicated in sections 2 and 11.

Indication of immediate medical attention and special treatment needed, if necessary

Specific treatment required for methemoglobinemia (e.g. methylene blue) – administered only by medical personnel. Show this SDS to the treating physician.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Suitable: Water (large quantities/flooding) is the preferred medium; product itself is non-combustible.
Unsuitable: Dry chemical powder and CO2 are less effective against oxidiser-fed fires.

Specific hazards arising from the chemical

Strong oxidiser. Not combustible itself but intensifies the burning of combustible materials and may react violently with reducing agents, organics, cyanides, and ammonium salts, especially under confinement or heat. Toxic nitrogen oxide fumes may be released on strong heating/decomposition.

Special protective actions for fire-fighters

Fight fire from a safe/protected position; use flooding quantities of water to cool containers and dilute the material. Wear self-contained breathing apparatus and full protective clothing.

Additional provisions

If safe to do so, remove exposed containers from the fire area. Use water spray to cool fire-exposed containers/structures. Avoid generating and inhaling dust.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Avoid raising and inhaling dust. Use personal protective equipment as described in Section 8. Evacuate the area and keep unprotected persons away.

For emergency responders

Wear appropriate protective equipment as described in Section 8. Ensure adequate ventilation.

Environmental precautions

Very toxic to aquatic life (H400) – prevent entry into drains or watercourses at all costs. Notify the relevant authority in case of significant release to the environment.

Methods and materials for containment and cleaning up

Sweep up or vacuum spilled material (avoid generating dust) and place in a suitable closed, labelled container for recovery or disposal. Wash the spill area with water after solid material has been removed.

Reference to other sections

See sections 8 and 13.

7. HANDLING AND STORAGE

Precautions for safe handling

A. General precautions for safe use

Keep away from combustible materials, organic matter, reducing agents, ammonium salts and cyanides. Avoid generating and breathing dust. Handle with strict hygiene control given acute oral toxicity. Keep away from incompatible materials (see section 10).

B. Technical recommendations for the prevention of fires and explosions

Store and handle away from all sources of ignition and combustible materials; segregate from fuels, oils, organics, reducing agents and ammonium compounds.

C. Technical recommendations on general occupational hygiene

Do not eat, drink or smoke during handling. Wash hands and exposed skin thoroughly after handling and before breaks/meals.

D. Technical recommendations to prevent environmental risks

Avoid release to the environment. Follow the protective measures given in Section 8. For bulk storage/handling, consult Suraj Chemicals.

Conditions for safe storage, including any incompatibilities

A. Specific storage requirements

Minimum Temp.	Ambient (no minimum requirement)
Maximum Temp.	30°C
Maximum time	24 Months in original, unopened packaging

B. General conditions for storage

Store in a cool, dry, well-ventilated, locked area, segregated from combustible and organic materials, reducing agents, ammonium salts, cyanides and acids, in accordance with oxidiser and acute-toxin storage practice.

Specific end use(s)

Except for the instructions already specified, it is not necessary to provide any special recommendation regarding the uses of this product.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

Substances whose occupational exposure limits have to be assessed in the workplace, per the Factories Act, 1948 (Act No. 63 of 1948), as amended by the Factories (Amendment) Act, 1987 (Act 20 of 1987):

Identification	Occupational Exposure Limit Type	Value
Sodium nitrite (as NO2)	Time Weighted average concentration (8 hrs)	0.1 mg/m³ (industry guideline, inhalable fraction)

Appropriate engineering controls

Use local exhaust ventilation or general dilution ventilation to keep airborne concentrations below occupational exposure limits. Consult the manufacturer's information leaflet for storage, use, cleaning and maintenance of PPE.

B. Respiratory protection

Filtering half-mask respirator (type P2/P3) recommended where dust generation cannot be controlled by ventilation.

C. Specific protection for the hands

Chemical-resistant gloves (nitrile or PVC) – check for breakthrough time before prolonged contact.

D. Eye and face protection

Chemical splash goggles; face shield for bulk handling.

E. Bodily protection

Chemical-resistant apron/overalls for bulk handling; safety footwear.

F. Additional emergency measures

Emergency eyewash station and safety shower should be available in the immediate work area (ANSI Z358-1 / ISO 3864 or equivalent).

Environmental exposure controls

Avoid environmental spillage of both the product and its container. See subsection 7.1.D.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	
Physical state at 20°C	Solid (crystalline)
Appearance	Crystals, granules or powder
Color	White to slightly yellowish
Odor	Odorless
Odour threshold	Not established
Melting point/freezing point	271°C
Boiling point at atmospheric pressure	320°C (decomposes)
Density / Relative density at 20°C	2.17 g/cm³
Bulk density	1100 – 1300 kg/m³ (typical)
Solubility in water at 20°C	820 g/L
pH (5% aqueous solution)	8.5 – 9.5 (mildly alkaline)
Vapour pressure at 20°C	Not relevant *
Partition coefficient n-octanol/water	Not relevant (inorganic salt)
Decomposition temperature	~320°C (releases nitrogen oxides)
Flammability	
Flash Point	Non-applicable (non-combustible solid; strong oxidiser)
Flammability (solid, gas)	Non-flammable, but a strong oxidiser (H272)
Autoignition temperature	Not relevant *
Lower / Upper flammability limit	Not relevant *
Particle Characteristics	
Median particle size	Available on request (grade/mesh-size dependent)

** Not relevant due to the nature of the product, not providing information on the properties of its hazards.*

Other information

Explosive properties	Not explosive
Oxidising properties	H272 – May intensify fire; classified as an oxidising solid, Category 2
Corrosive to metals	Not relevant *
Heat of combustion	Not relevant *
Surface tension at 20°C	Not relevant *
Refraction index	Not relevant *

10. STABILITY AND REACTIVITY

Reactivity

Strong oxidiser. Reacts violently with reducing agents, ammonium salts, cyanides and organic/combustible materials. Liberates toxic nitrogen oxide fumes on contact with acids.

Chemical stability

Chemically stable under the indicated conditions of storage, handling and use.

Possibility of hazardous reactions

Under the specified conditions, hazardous reactions that lead to excessive temperatures or pressure are not expected.

Conditions to avoid

Shock/Friction	Contact with Air	Increase in Temperature	Sunlight	Humidity
Not applicable	Not applicable	Avoid excessive heat	Not applicable	Avoid contact with moisture (may cake/hydrolyse)

Incompatible materials

Incompatible with	Reason/Effect
Ammonium salts, cyanides	Risk of violent/explosive reaction
Acids	Liberates toxic nitrogen oxide (NOx) fumes
Reducing agents, combustible/organic materials	Risk of fire on contact

Hazardous decomposition products

No hazardous decomposition products under normal conditions of storage and use.

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

In case of exposure that is repetitive, prolonged, or at concentrations higher than the recommended occupational exposure limits, adverse health effects may result depending on the means of exposure:

A. Ingestion (acute effect)

Toxic if swallowed (H301). Causes methemoglobinemia (converts haemoglobin to methaemoglobin, impairing oxygen transport); symptoms include cyanosis, headache, dizziness, nausea and, in severe cases, collapse. Specific antidote (methylene blue) exists – seek immediate medical attention (P310).

B. Inhalation (acute effect)

Dust may cause irritation of the respiratory tract; systemic absorption possible with symptoms as per ingestion.

C. Contact with skin and eyes (acute effect)

May cause irritation to eyes and skin on prolonged contact.

D. CMR effects (carcinogenicity, mutagenicity, reproductive toxicity)

Classification criteria for carcinogenicity, mutagenicity and reproductive toxicity are not met based on available data. IARC: Not listed.

E. Sensitizing effects

Classification criteria for respiratory or skin sensitisation are not met based on available data.

F. Specific target organ toxicity (STOT) – single exposure

Classification criteria are not met based on available data, except as noted in Section 2.

G. Specific target organ toxicity (STOT) – repeated exposure

Classification criteria are not met based on available data.

H. Aspiration hazard

Classification criteria are not met based on available data (not a liquid hydrocarbon).

Product-specific toxicological information

Identification	Acute Toxicity	Genus
SODIUM NITRITE CAS: 7632-00-0	LD50 oral: 180 mg/kg	Rat
	LD50 dermal: >1000 mg/kg (limited data)	Rabbit
	LC50 inhalation: Not established	–

12. ECOLOGICAL INFORMATION

Very toxic to aquatic life (H400) – strict containment of spillage/discharge to the environment is essential.

Toxicity

Identification	Acute Toxicity	Species	Genus
Sodium nitrite CAS: 7632-00-0	LC50: 0.5 – 6 mg/L (96h)	Fish (various species)	Fish
	EC50: 4.7 mg/L (48h)	Daphnia magna	Crustacean

Persistence and degradability

Nitrite is readily oxidised to nitrate under aerobic environmental conditions (part of the natural nitrogen cycle).

Bioaccumulative potential

Not expected to bioaccumulate (highly soluble, ionic species).

Mobility in soil

Koc	Henry	Dry Soil	Moist Soil
Not relevant	Not relevant	Soluble in water – may leach in soil	Soluble in water – may leach in soil

Results of PBT and vPvB assessment

Non-applicable – inorganic salt; does not meet PBT/vPvB screening criteria.

Other adverse effects

Not described

13. DISPOSAL CONSIDERATIONS

Disposal methods

Do NOT discharge to drains or watercourses (very toxic to aquatic life). Collect and dispose of via a licensed hazardous waste contractor. Do not mix waste with combustible, reducing or ammonium-containing materials.

Do not discharge to drains, soil or surface water. Dispose of via a licensed hazardous/industrial waste contractor in accordance with the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 (India) and other applicable national/local regulations. Empty containers may retain product residue – handle empty containers with the same precautions as full ones.

Need a price or stock? Request a quote at www.surajchemicals.com/request-quote | WhatsApp +91 70927 22822

14. TRANSPORT INFORMATION

Transport of dangerous goods by land (ADR 2023 / RID 2023)

14.1 UN number	UN1500
14.2 UN proper shipping name	SODIUM NITRITE
14.3 Transport hazard class(es)	5.1 (Subsidiary risk: 6.1)
14.4 Packing group	III
14.5 Environmental hazard	Yes
14.6 Special precautions for user	Physico-chemical properties: see section 9
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

Transport of dangerous goods by sea (IMDG 41-22)

14.1 UN number	UN1500
14.2 UN proper shipping name	SODIUM NITRITE
14.3 Transport hazard class(es)	5.1 (Subsidiary risk: 6.1)
14.4 Packing group	III
14.5 Marine pollutant	Yes
14.6 Special precautions for user	EmS Codes: Available on request | Limited quantities: as per IMDG Code | Segregation group: Not relevant
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

Transport of dangerous goods by air (IATA/ICAO 2024)

14.1 UN number	UN1500
14.2 UN proper shipping name	SODIUM NITRITE
14.3 Transport hazard class(es)	5.1 (Subsidiary risk: 6.1)
14.4 Packing group	III
14.5 Environmental hazard	Yes
14.6 Special precautions for user	Physico-chemical properties: see section 9
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

15. REGULATORY INFORMATION

Safety, health and environmental regulations specific for the product in question

It is recommended to use the information included in this safety data sheet as data used in a risk evaluation of local circumstances, in order to establish the necessary risk prevention measures for the manipulation, use, storage and disposal of this product.

Other legislation

Manufacture, Storage and Import of Hazardous Chemicals Rules 1989
The Factories Act, 1948 (Act No. 63 of 1948), as amended by the Factories (Amendment) Act, 1987 (Act 20 of 1987)
The Chemical Accidents (Emergency Planning, Preparedness, and Response) Rules, 1996
Public Liability Insurance Act, 1991
Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016

16. OTHER INFORMATION

Legislation related to safety data sheets

This safety data sheet has been designed in accordance with Annex 4 – Guidance on the preparation of Safety Data Sheets of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Texts of the legislative phrases mentioned in sections 2 and 3

H272: May intensify fire; oxidizer.
H301: Toxic if swallowed.
H400: Very toxic to aquatic life.

The phrases indicated do not refer to the product itself; they are present merely for informative purposes and refer to the individual components which appear in section 3.

Advice related to training

Minimal training is recommended to prevent industrial risks for staff using this product, in order to facilitate their comprehension and interpretation of this safety data sheet, as well as the label on the product.

Principal bibliographical sources

The United Nations Economic Commission for Europe (UNECE); European Chemicals Agency (ECHA) classification and labelling inventory; publicly available chemical safety literature for this substance.

Abbreviations and acronyms

ADR: European agreement concerning the international carriage of dangerous goods by road | IMDG: International maritime dangerous goods code | IATA: International Air Transport Association | ICAO: International Civil Aviation Organisation | COD: Chemical Oxygen Demand | BOD5: 5-day biochemical oxygen demand | BCF: Bioconcentration factor | LD50: Lethal Dose 50 | LC50: Lethal Concentration 50 | EC50: Effective Concentration 50 | Log-POW: Octanol-water partition coefficient | Koc: Partition coefficient of organic carbon | IARC: International Agency for Research on Cancer

Disclaimer: The information contained in this safety data sheet is based on sources, technical knowledge and current legislation, without being able to guarantee its accuracy. This information cannot be considered a guarantee of the properties of the product; it is simply a description of the security requirements. The occupational methodology and conditions for users of this product are not within Suraj Chemicals' awareness or control, and it is ultimately the responsibility of the user to take the necessary measures to obtain the legal requirements concerning the manipulation, storage, use and disposal of chemical products. The information on this safety data sheet only refers to this product, which should not be used for needs other than those specified.

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