SAFETY DATA SHEET

SODIUM METABISULPHITE (FOOD GRADE)

CAS No.: 7681-57-4

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 METABISULPHITE (FOOD GRADE)
Sodium Pyrosulfite; Disodium Pyrosulfite; Sodium Disulphite; E223
CAS: 7681-57-4

Other means of identification

Not relevant

Recommended use of the chemical and restrictions on use

Relevant uses: Food preservative and antioxidant (E223) for dried fruit, wine-making, food processing; also used as a bleaching/reducing agent and waste-water dechlorination agent in industrial processes. Food-grade material for use within statutory dosage limits.

Uses advised against: All uses not specified in this section or in section 7.3. Not for use by individuals with sulfite sensitivity/asthma without medical guidance.

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), based on well-established public data for sodium metabisulphite (CAS 7681-57-4).

Acute Tox. 4 (Oral)	Acute oral toxicity, Category 4, H302
Eye Irrit. 2	Eye irritation, Category 2, H319
Skin Irrit. 2	Skin irritation, Category 2, H315
STOT SE 3	Respiratory tract irritation, Category 3, H335

GHS label elements, including precautionary statements

GHS: Warning

Hazard statements

H302: Harmful if swallowed.
H315: Causes skin irritation.
H319: Causes serious eye irritation.
H335: May cause respiratory irritation.

Precautionary statements

P261: Avoid breathing dust.
P264: Wash exposed skin thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352: IF ON SKIN: Wash with plenty of soap and water.
P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P501: Dispose of contents/container in accordance with local/regional/national regulations.

Other hazards which do not result in classification

Capable of provoking bronchospasm in sulfite-sensitive individuals who have asthma. Contact with acids/moisture liberates sulfur dioxide gas.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substances

Chemical description: Sodium Metabisulfite ($Na_2S_2O_5$), food grade (E223)

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

Identification	Chemical Name / Classification	Concentration
CAS: 7681-57-4	Sodium Metabisulfite – Acute Tox. 4, Eye Irrit. 2, Skin Irrit. 2, STOT SE 3: H302, H315, H319, H335 – Warning	≥97% (food grade)
CAS: 7757-83-7	Sodium Sulfite (process residual)	≤2%
CAS: 7757-82-6	Sodium Sulfate (process residual)	≤1%

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

Mixtures

Non-applicable (food-grade single substance with minor process residuals as above)

4. FIRST AID MEASURES

Description of necessary first-aid measures

After first aid, get appropriate medical attention, showing the SDS of this product.

By inhalation

Sore throat, shortness of breath, coughing and congestion may occur. Remove to fresh air. Seek medical attention in severe cases or if recovery is not rapid.

By skin contact

Irritation, itching, dermatitis may occur. Wash with soap and plenty of water. Remove contaminated clothing and wash before reuse.

By eye contact

Irritation to eyes and mucous membranes. Rinse thoroughly with water for at least 15 minutes. Obtain medical attention if irritation persists.

By ingestion/aspiration

May cause irritation to mucous membranes, nausea and abdominal discomfort. Rinse mouth and give water to drink if conscious. Do not induce vomiting. Obtain medical attention.

Most important symptoms/effects, acute and delayed

Acute effects include eye, skin and mucous membrane irritation. Contact with acid or moisture releases sulfur dioxide gas, which can cause respiratory irritation; sulfite-sensitive/asthmatic individuals may experience bronchospasm.

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

Exposure may aggravate acute or chronic asthma, emphysema and bronchitis. Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Suitable: Use extinguishing media appropriate to the surrounding fire (water spray, foam, dry chemical, CO_2).
Unsuitable: None indicated.

Specific hazards arising from the chemical

Not combustible. May release hazardous sulfur oxide fumes (SO_2) on thermal decomposition or contact with acid/water.

Special protective actions for fire-fighters

Wear self-contained breathing apparatus (SCBA) with full facepiece in pressure-demand mode, as fire may produce toxic sulfur oxide fumes.

Additional provisions

Do not allow runoff from fire control to enter sewers or waterways.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Wear appropriate PPE (section 8). Avoid generating dust and avoid contact with acids or moisture.

For emergency responders

Wear protective equipment as above; use respiratory protection if sulfur dioxide odour is detected.

Environmental precautions

Do not allow runoff from clean-up to enter sewers or watercourses.

Methods and materials for containment and cleaning up

Small spills can be swept up dry and collected in a suitable container. Keep spillage away from acids and moisture. Large spills should be handled per a predetermined plan; dike ahead of contaminated runoff for later disposal.

Reference to other sections

See sections 8 and 13.

7. HANDLING AND STORAGE

Precautions for safe handling

A. General precautions for safe use

Avoid contact with skin and eyes. Do not breathe dust. Keep away from acids and moisture.

B. Technical recommendations for the prevention of fires and explosions

Not combustible; no specific fire prevention measures required beyond general good practice.

C. Technical recommendations on general occupational hygiene

Do not eat, drink or smoke in work areas. Wash hands and exposed skin thoroughly after handling.

D. Technical recommendations to prevent environmental risks

Segregate from acids and oxidising agents to prevent release of sulfur dioxide gas.

Conditions for safe storage, including any incompatibilities

A. Specific storage requirements

Storage condition	Store in tightly closed containers in a cool, dry, well-ventilated place, protected from moisture
Incompatible materials	Acids, moisture, powdered alkali/alkaline-earth metals, oxidising agents, chlorates

B. General conditions for storage

Avoid heat and moisture. Segregate from acids and oxidisers. Shelf-life is reduced by exposure to humid air.

Specific end use(s)

Food preservative/antioxidant (E223) for use within statutory dosage limits. Except for the instructions already specified, no other special recommendation applies.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

Identification	Occupational Exposure Limit Type	Value
Sodium Metabisulfite CAS: 7681-57-4	TWA (as sulfur dioxide)	5 mg/m³ (2 ppm SO_2)

Appropriate engineering controls

Provide local exhaust ventilation to keep airborne dust/SO_2 concentrations below occupational exposure limits.

B. Respiratory protection

Dust mask for routine handling; use a NIOSH-approved acid-gas cartridge respirator if sulfur dioxide odour is detected. SCBA for spill response in enclosed spaces.

C. Specific protection for the hands

Chemical-resistant gloves (nitrile or PVC).

D. Eye and face protection

Chemical safety goggles.

E. Bodily protection

Protective clothing/food-industry workwear as needed to prevent excessive dust contact.

F. Additional emergency measures

Eyewash stations and washing facilities should be available in the work area.

Environmental exposure controls

Do not allow product or runoff to enter sewers or waterways.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	
Physical state at 20°C	Solid (crystalline powder/granules)
Appearance	White to slightly yellowish crystalline solid
Odor	Pungent, sulfurous (SO_2) odor
Odour threshold	Not quantified (pungent, readily detectable)
Volatility	
Boiling point	Not established (decomposes before boiling)
Melting point	~150°C (decomposes)
Vapour pressure	Not established
Evaporation rate	Not applicable (solid)
Product Description	
Molecular weight	190.11 g/mol
Density (bulk)	~1.4–1.5 g/cm³
pH (5% aqueous solution)	~4.0–5.0 (acidic)
Solubility in water at 20°C	~54 g/100 mL
Decomposition temperature	~150°C
Flammability	
Flash Point	Non-applicable (non-combustible solid)
Flammability (solid, gas)	Not flammable
Autoignition temperature	Not applicable
Lower / Upper flammability limit	Not applicable

Other information

Explosive properties	Not applicable
Oxidising properties	Not classified as an oxidiser (reducing agent)
Corrosive to metals	Not classified; aqueous solution mildly acidic, may attack some metals over time

10. STABILITY AND REACTIVITY

Reactivity

In presence of water or acid, sodium metabisulfite liberates toxic and hazardous fumes of sulfur oxides, including sulfur dioxide. Reacts with water/steam to form corrosive sulfurous acid; reacts with chlorates to form unstable chlorine dioxide.

Chemical stability

Stable under normal conditions of storage and handling when kept dry.

Possibility of hazardous reactions

Hazardous polymerisation will not occur. Contact with powdered alkali metals, alkalis and oxidising agents produces violent reactions.

Conditions to avoid

Shock/Friction	Contact with Air	Increase in Temperature	Sunlight	Humidity
Not applicable	Slow oxidation to sulfate	Avoid excessive heat/open flame	Not applicable	Avoid moisture

Incompatible materials

Water/acid, powdered alkali/alkaline-earth metals, oxidising agents, chlorates.

Hazardous decomposition products

Sulfur dioxide gas.

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)

Harmful if swallowed in quantity; may cause gastrointestinal irritation, nausea and vomiting.

B. Inhalation (acute effect)

Dust and liberated SO_2 are irritating to the respiratory tract; may provoke bronchospasm in sensitive individuals.

C. Contact with skin and eyes (acute effect)

Skin: irritant (non-corrosive). Eyes: causes serious eye irritation.

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

Not listed as a carcinogen by IARC, NTP or OSHA. Classification criteria for mutagenicity/reproductive toxicity are not met based on available data.

E. Sensitizing effects

Capable of provoking bronchospasm/allergic-type reactions in sulfite-sensitive individuals, particularly asthmatics.

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

May cause respiratory irritation (target organs: respiratory system, eyes, skin).

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

Repeated or chronic exposure to sulfite dust/SO_2 may cause respiratory impairment.

H. Aspiration hazard

Not applicable (solid).

Product-specific toxicological information

Identification	Acute Toxicity	Genus
Sodium Metabisulfite CAS: 7681-57-4	LD50 oral: ~600–2000 mg/kg (literature range)	Rat
	LD50 dermal: >2000 mg/kg	Rabbit

12. ECOLOGICAL INFORMATION

Non-hazardous solid commonly used as a waste-water dechlorinating agent; readily oxidised in the environment.

Toxicity

Low order of aquatic toxicity as the intact salt; oxidation products may transiently deplete dissolved oxygen. High concentrations contribute to elevated chemical oxygen demand (COD).

Persistence and degradability

Rapidly oxidised/decomposed in the environment (not organic; biodegradation criteria not applicable).

Bioaccumulative potential

Not expected to bioaccumulate.

Mobility in soil

Koc	Henry	Dry Soil	Moist Soil
Not applicable	Not applicable	Soluble in water; slight soil adsorption/mobility	

Results of PBT and vPvB assessment

Not applicable (inorganic substance).

Other adverse effects

Elevated chemical oxygen demand at high discharge concentrations.

13. DISPOSAL CONSIDERATIONS

Disposal methods

Not normally classified as hazardous waste. Neutralise/oxidise or dilute per local discharge consent, or dispose of via a licensed waste contractor. Empty containers may retain product residue.

Refer to national and local regulations on waste management.

14. TRANSPORT INFORMATION

Transport of dangerous goods by land (ADR/RID)

14.1 UN number	Not regulated
14.2 UN proper shipping name	Sodium Metabisulfite – non-hazardous for transport
14.3 Transport hazard class(es)	N/A
14.4 Packing group	N/A
14.5 Environmental hazard	No
14.6 Special precautions for user	None
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not applicable

Transport of dangerous goods by sea (IMDG)

14.1 UN number	Not regulated
14.2 UN proper shipping name	Sodium Metabisulfite – non-hazardous for transport
14.3 Transport hazard class(es)	N/A
14.4 Packing group	N/A
14.5 Marine pollutant	No
14.6 Special precautions for user	None
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not applicable

Transport of dangerous goods by air (IATA/ICAO)

14.1 UN number	Not regulated
14.2 UN proper shipping name	Sodium Metabisulfite – non-hazardous for transport
14.3 Transport hazard class(es)	N/A
14.4 Packing group	N/A
14.5 Environmental hazard	No
14.6 Special precautions for user	None
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not applicable

15. REGULATORY INFORMATION

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

Permitted as a food preservative/antioxidant (E223) subject to Food Safety and Standards (Food Products Standards and Food Additives) Regulations, 2011 and Codex Alimentarius GSFA limits. Not listed as a carcinogen (IARC/NTP/OSHA).

Other legislation

Food Safety and Standards Act, 2006 and associated Regulations (India)
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)

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

H302: Harmful if swallowed.
H315: Causes skin irritation.
H319: Causes serious eye irritation.
H335: May cause respiratory irritation.

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

Publicly available GHS classification and physicochemical reference data for sodium metabisulfite (CAS 7681-57-4).

Abbreviations and acronyms

TWA: Time-Weighted Average | COD: Chemical Oxygen Demand | LD50: Lethal Dose 50 | IARC: International Agency for Research on Cancer | NTP: National Toxicology Program | OSHA: Occupational Safety and Health Administration

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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