

SODIUM CHLORITE (TECHNICAL GRADE)

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SECTION 1: IDENTIFICATION

1.1 GHS Product identifier:

SODIUM CHLORITE (TECHNICAL GRADE)
Synonyms: Sodium chlorite; Chlorous acid, sodium salt; NaClO&sub2;
CAS: 7758-19-2

Other means of identification:

Not relevant

1.2 Recommended use of the chemical and restrictions on use:

Relevant uses: Precursor for on-site generation of chlorine dioxide for water, wastewater and process-water disinfection; pulp and textile bleaching; odour control; oilfield water-treatment applications. For industrial user only.
Uses advised against: All uses not specified in this section or in section 7.3.

1.3 Supplier's details:

SURAJ CHEMICALS
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1.4 Emergency phone number:

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SECTION 2: HAZARDS IDENTIFICATION

2.1 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). Sodium chlorite is an oxidising solid that can liberate chlorine dioxide gas under acidic conditions.

Ox. Sol. 2	Oxidising solid, Category 2, H272
Acute Tox. 4	Acute oral toxicity, Category 4, H302
Skin Irrit. 2	Skin irritation, Category 2, H315
Eye Dam. 1	Serious eye damage, Category 1, H318
Aquatic Acute 1	Hazardous to the aquatic environment, acute hazard, Category 1, H400

2.2 GHS label elements, including precautionary statements:

GHS: Danger

Hazard statements:

H272 – May intensify fire; oxidiser.
H302 – Harmful if swallowed.
H315 – Causes skin irritation.
H318 – Causes serious eye damage.
H400 – Very toxic to aquatic life.

Precautionary statements:

P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P220: Keep away from clothing and other combustible materials.
P221: Take any precaution to avoid mixing with combustibles/organic materials/acids.
P264: Wash exposed skin thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P273: Avoid release to the environment.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312: IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P302+P352: IF ON SKIN: Wash with plenty of water.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310: Immediately call a POISON CENTER/doctor.
P370+P378: In case of fire: Use appropriate extinguishing media (see section 5).
P391: Collect spillage.
P501: Dispose of contents/container in accordance with local regulations on hazardous waste.

2.3 Other hazards which do not result in classification:

Contact with acids liberates toxic and corrosive chlorine dioxide gas. Contact with combustible, organic or readily oxidisable materials may cause fire or violent reaction. Not a PBT or vPvB substance.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances:

Chemical description: Sodium Chlorite

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

Identification	Chemical Name / Classification	Concentration
CAS: 7758-19-2	Sodium Chlorite — Ox. Sol. 2: H272; Acute Tox. 4: H302; Skin Irrit. 2: H315; Eye Dam. 1: H318; Aquatic Acute 1: H400 – Danger	≈ 80% technical flakes/powder (remainder sodium chloride and water; see current specification sheet for exact assay)

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

3.2 Mixtures:

Non-applicable

SECTION 4: FIRST AID MEASURES

4.1 Description of necessary first-aid measures:
Request medical assistance immediately, showing the SDS of this product.

By inhalation:
Remove the affected person to fresh air and keep at rest. If breathing is difficult, give oxygen. Seek immediate medical attention, particularly if chlorine dioxide fumes were generated (e.g. from acid contact).

By skin contact:
Remove contaminated clothing. Wash affected skin thoroughly with plenty of water for at least 15 minutes. Seek medical attention if irritation persists.

By eye contact:
Rinse immediately and continuously with plenty of water for at least 15–20 minutes, holding eyelids open. Remove contact lenses if present and easy to do. Seek immediate medical/ophthalmological attention.

By ingestion/aspiration:
Do NOT induce vomiting. Rinse mouth with water. Give water to drink if the person is conscious and able to swallow. Seek immediate medical attention.

4.2 Most important symptoms/effects, acute and delayed:
Harmful if swallowed; may cause gastrointestinal irritation and, in significant overdose, methaemoglobinaemia (as reported for chlorite/chlorate compounds) requiring medical management. Causes skin irritation and serious eye damage. Inhalation of decomposition fumes (chlorine dioxide) causes respiratory tract irritation.

4.3 Indication of immediate medical attention and special treatment needed, if necessary:
Treat symptomatically; monitor for methaemoglobinaemia in cases of significant ingestion. Specific medical management should be directed by a physician/poison centre.

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Suitable extinguishing media:
Suitable: Water spray/flooding quantities of water (preferred, to dilute/cool – product itself is non-combustible but is a strong oxidiser).
Unsuitable: Dry chemical, foam or carbon dioxide alone may not be effective and should not be relied upon where the oxidiser is involved in a fire with combustibles; do not use on a sodium chlorite fire without large volumes of water available.

5.2 Specific hazards arising from the chemical:
Strong oxidiser (H272): may intensify fire. Contact with combustible, organic or readily oxidisable materials, or with acids, may cause fire, violent decomposition or release of toxic chlorine dioxide gas. Containers may rupture/explode when heated due to decomposition.

5.3 Special protective actions for fire-fighters:
Evacuate the area. Wear self-contained breathing apparatus and full protective clothing. Fight fire from a safe distance/protected location using large amounts of water if possible.

Additional provisions:
Cool containers/bulk storage exposed to fire with water spray from a safe distance. Do not allow fire-fighting runoff to contact combustible debris or to enter drains.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:
For non-emergency personnel:
Evacuate unnecessary personnel. Remove all sources of ignition and all combustible/organic materials and acids from the vicinity of the spill. Use the personal protective equipment described in Section 8.

For emergency responders:
Wear suitable protective equipment as described in Section 8. Act only if trained and equipped for oxidiser-material response.

6.2 Environmental precautions:
Very toxic to aquatic life. Prevent entry into drains, watercourses and soil. Contain and notify the relevant authority in case of release to the environment.

6.3 Methods and materials for containment and cleaning up:
Sweep up carefully (avoid friction/sparking) and place in a clean, dry, labelled container, keeping strictly separate from any combustible material, organic material or acid. Do not use combustible absorbents (e.g. sawdust, cloth). Flush residual traces with large amounts of water if permitted by local regulation.

6.4 Reference to other sections:
See sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling:
A. General precautions for safe use:
Keep away from acids, combustible materials, organic materials, reducing agents and readily oxidisable substances (materials to avoid). Avoid friction, shock and contamination. Avoid generating and inhaling dust. Avoid contact with skin and eyes.
B. Technical recommendations for the prevention of fires and explosions:
Store and handle strictly segregated from combustibles, organics and acids. Use only clean, dedicated, non-combustible equipment. Keep away from heat and ignition sources. Provide a containment bund around bulk storage.
C. Technical recommendations on general occupational hygiene:
Do not eat, drink or smoke during handling; wash hands and exposed skin thoroughly after handling.
D. Technical recommendations to prevent environmental risks:
Avoid uncontrolled discharge to the environment given the acute aquatic toxicity classification. Follow the protective measures in Section 8.

7.2 Conditions for safe storage, including any incompatibilities:

A. Specific storage requirements:

Storage temperature	Cool, ambient; avoid elevated temperature (< 30°C recommended)
Maximum shelf life	Typical value — refer to current specification sheet

B. General conditions for storage:
Store in a cool, dry, well-ventilated area in tightly closed, clean, non-combustible containers, strictly segregated from acids, combustible materials, organic materials and reducing agents. Avoid contamination with any foreign (especially combustible/organic) material.

7.3 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.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters:
No specific occupational exposure limit is established for sodium chlorite itself in India; as a reference point for the chlorine dioxide that may be generated from this product, a commonly cited limit is ≈ 0.1 ppm (TWA, 8 hr) as chlorine dioxide. Treat occupational exposure to this product's dust as requiring the same control rigor as other oxidising solids.

8.2 Appropriate engineering controls:
Ensure adequate general and/or local exhaust ventilation to keep exposure below the occupational exposure limits (where established) and to keep dust concentrations as low as reasonably practicable. Eyewash station and safety shower should be available in the work area. Consult the manufacturer's information leaflet for storage, use, cleaning and maintenance of PPE.

B. Respiratory protection:
Use a particulate (dust) respirator where exposure limits may be exceeded; where chlorine dioxide fume generation is possible (e.g. accidental acid contact), use a supplied-air respirator or self-contained breathing apparatus and evacuate the area.

C. Specific protection for the hands:
Chemical-resistant gloves (e.g. nitrile or PVC). Replace at any sign of degradation.

D. Eye and face protection:

Chemical safety goggles and/or full face shield mandatory, given the serious eye damage hazard (H318).

E. Bodily protection:

Chemical-resistant, non-combustible-rated protective clothing. Avoid clothing/footwear with combustible residues that could contact the product.

F. Additional emergency measures:

Emergency shower (ANSI Z358-1, ISO 3864-1:2011, ISO 3864-4:2011) and eyewash stations (DIN 12 899, ISO 3864-1:2011, ISO 3864-4:2011) should be available in the immediate work area.

Environmental exposure controls:

Avoid release of the product to drains, soil and watercourses. See subsection 7.1.D and Section 12.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

Appearance	
Physical state at 20°C	Solid (crystalline flakes/powder)
Appearance	White to slightly yellow/greenish crystalline solid
Odor	Odourless (slight chlorinous odour possible on exposure to moisture/acid traces)
Odour threshold	Not relevant *
Volatility	
Boiling point at atmospheric pressure	Not applicable (decomposes before boiling)
Vapour pressure at 20°C	Negligible
Evaporation rate at 20°C	Not relevant (solid)
Product Description	
Density / Relative density at 20°C	≈ 2.5 g/cm³ (pure NaClO&sub2;); Typical value — refer to current specification sheet for technical grade
Bulk density	Typical value — refer to current specification sheet
pH (aqueous solution, 1% w/v)	≈ 8.0 – 10.0 (mildly alkaline)
Partition coefficient n-octanol/water	Not applicable (inorganic salt)
Solubility in water at 20°C	Highly soluble
Decomposition temperature	≈ 180 – 200°C (decomposes, releasing oxygen and chlorine-based gases)
Melting point/freezing point	Decomposes rather than melting sharply (≈ 180–200°C)
Flammability	
Flash Point	Non-applicable (inorganic oxidising solid)
Flammability (solid, gas)	Non-flammable itself, but is an oxidiser (H272) that may intensify fire
Autoignition temperature	Non-applicable
Lower / Upper flammability limit	Non-applicable
Particle Characteristics	
Median equivalent diameter	Typical value — refer to current specification sheet

* Not relevant due to the nature of the product, not providing information on the properties of its hazards. Molecular weight (NaClO&sub2;): 90.44 g/mol.

9.2 Other information:

Explosive properties	Not explosive on its own; may contribute to violent reaction/explosion in contact with incompatible materials (see sections 7 and 10)
Oxidising properties	H272 – May intensify fire; oxidiser (Ox. Sol. Category 2)
Corrosive to metals	Not generally corrosive to common metals in dry form; aqueous solutions may attack some metals over time
Heat of combustion	Not relevant (non-combustible; oxidising solid)
Surface tension at 20°C	Not relevant (solid)
Refraction index	Not relevant

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity:

Strong oxidiser. Reacts violently with acids to liberate toxic, corrosive and potentially explosive chlorine dioxide gas. Reacts with combustible materials, organic materials and reducing agents, which may cause fire or violent decomposition. Sensitive to contamination, friction and shock in concentrated/dry form.

10.2 Chemical stability:

Chemically stable under the indicated conditions of storage, handling and use when kept dry, cool, and strictly segregated from incompatible materials.

10.3 Possibility of hazardous reactions:

Contact with acids: rapid liberation of chlorine dioxide gas (toxic, and potentially explosive at high concentration). Contact with combustibles/organics/reducing agents: risk of fire or violent exothermic reaction. Contamination or heating of the dry solid may cause hazardous decomposition.

10.4 Conditions to avoid:

Shock/Friction	Contact with Air	Increase in Temperature	Sunlight	Humidity
Avoid (sensitive to friction/shock when contaminated)	No specific hazard	Avoid heating/decomposition above ≈ 180°C	Avoid direct prolonged exposure	Avoid prolonged dampness/contamination

10.5 Incompatible materials:

Acids	Combustible / Organic Materials	Reducing Agents	Ammonium Compounds
Avoid contact (liberates toxic ClO&sub2; gas)	Avoid contact (fire/violent reaction risk)	Avoid contact	Avoid contact (incompatible)

10.6 Hazardous decomposition products:

On heating, acid contact or contamination: chlorine dioxide (ClO&sub2;), oxygen, and in some conditions chlorine gas – all toxic and/or supportive of combustion.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 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 (H302). May cause gastrointestinal irritation, nausea and vomiting; significant overdose may cause methaemoglobinaemia and haemolysis, consistent with chlorite/chlorate-type compounds, requiring medical management.

B. Inhalation (acute effect):
Dust may cause respiratory tract irritation. Inhalation of chlorine dioxide gas generated from acid contact is toxic and may cause severe respiratory irritation/pulmonary oedema at high concentration.

C. Contact with skin and eyes (acute effect):
Causes skin irritation (H315). Causes serious eye damage (H318).

D. CMR effects (carcinogenicity, mutagenicity, reproductive toxicity):
Classification criteria for carcinogenicity, mutagenicity and reproductive toxicity are not met based on available data. Not listed by IARC.

E. Sensitizing effects:
Not classified as a skin or respiratory sensitiser based on available data.

F. Specific target organ toxicity (STOT) – single exposure:
Classification criteria are not met based on available data beyond the effects described above.

G. Specific target organ toxicity (STOT) – repeated exposure:
Repeated overexposure to chlorite compounds has been associated with effects on red blood cells (haemolysis) in animal studies; classification criteria for this product are not met based on available data at recommended occupational exposure.

H. Aspiration hazard:
Not relevant (solid).

Product-specific toxicological information:

Identification	Acute Toxicity	Genus
Sodium Chlorite CAS: 7758-19-2	LD50 oral: ≈ 165 – 400 mg/kg	Rat
	LD50 dermal: Not established for this grade	–

SECTION 12: ECOLOGICAL INFORMATION

Very toxic to aquatic life.

12.1 Toxicity:

Identification	Acute Toxicity	Species	Genus
Sodium Chlorite CAS: 7758-19-2	LC50: ≈ 1 – 5 mg/L (96h)	Non-applicable	Fish
	EC50: ≈ 1 – 10 mg/L (48h)	Non-applicable	Crustacean

12.2 Persistence and degradability:

Inorganic substance; the concept of biodegradability does not apply. Decomposes/reacts in the environment (oxidant) to chloride and other chlorine species.

12.3 Bioaccumulative potential:

Not expected to bioaccumulate.

12.4 Mobility in soil:

Koc	Henry	Dry Soil	Moist Soil
Not relevant (ionic, reactive oxidiser)	Not relevant	Mobile (soluble)	Mobile; reacts with organic matter

12.5 Results of PBT and vPvB assessment:

Non-applicable (inorganic substance; PBT/vPvB criteria apply to organic substances).

12.6 Other adverse effects:

Strongly oxidising; can be acutely toxic to aquatic organisms even at low concentrations. Avoid any release to surface water.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Disposal methods:

Do not discharge to drains, soil or watercourses. Dispose of as hazardous (oxidiser) waste via a licensed waste contractor. Do not mix with combustible, organic or acidic waste streams. Empty containers may retain hazardous residue – handle with the same precautions as the full product.

Refer to national and local regulations on waste management. In India, dispose of in accordance with the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016, as amended, through an authorised waste handler/recycler, or as advised by the State Pollution Control Board.

SECTION 14: TRANSPORT INFORMATION

Transport of dangerous goods by land (ADR 2023 / RID 2023 principles, as adapted for India):

14.1 UN number	UN1496
14.2 UN proper shipping name	SODIUM CHLORITE
14.3 Transport hazard class(es)	5.1 (Subsidiary risk: 6.1, 8 as applicable per grade)
14.4 Packing group	II
14.5 Environmental hazard	Yes
14.6 Special precautions for user	Physico-chemical properties: see section 9; segregate from acids, combustibles and organic materials in transport
14.7 Transport in bulk	Subject to applicable bulk-solid transport provisions for oxidising solids

Transport of dangerous goods by sea (IMDG):

14.1 UN number	UN1496
14.2 UN proper shipping name	SODIUM CHLORITE
14.3 Transport hazard class(es)	5.1
14.4 Packing group	II
14.5 Marine pollutant	Yes
14.6 Special precautions for user	EmS Codes: F-A, S-Q Stow away from acids, combustibles and organic materials
14.7 Transport in bulk	Subject to applicable bulk-solid transport provisions for oxidising solids

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

14.1 UN number	UN1496
14.2 UN proper shipping name	SODIUM CHLORITE
14.3 Transport hazard class(es)	5.1
14.4 Packing group	II
14.5 Environmental hazard	Yes

14.6 Special precautions for user	Physico-chemical properties: see section 9
14.7 Transport in bulk	Not relevant for packaged goods

SECTION 15: REGULATORY INFORMATION

15.1 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 (India):

- Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 (as amended)
- 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

SECTION 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; oxidiser.
- H302: Harmful if swallowed.
- H315: Causes skin irritation.
- H318: Causes serious eye damage.
- 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:

United Nations Globally Harmonized System of Classification and Labelling of Chemicals (GHS); European Chemicals Agency (ECHA) Classification & Labelling Inventory; United Nations Recommendations on the Transport of Dangerous Goods (Model Regulations).

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 | PG: Packing Group | BCF: Bioconcentration factor | LD50: Lethal Dose 50 | LC50: Lethal Concentration 50 | EC50: Effective Concentration 50 | Log-Pow: Octanol-water partition coefficient | IARC: International Agency for Research on Cancer | STOT SE/RE: Specific Target Organ Toxicity, Single/Repeated Exposure | PBT/vPvB: Persistent, Bioaccumulative and Toxic / very Persistent, very Bioaccumulative

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.

END OF SAFETY DATA SHEET