

**SODIUM CHLORITE (SOLUTION)****1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY****1.1. IDENTIFICATION OF THE SUBSTANCE**

Trade name:	Sodium chlorite solution
Chemical name:	Sodium chlorite
Trade form:	35% max. w/w aqueous solution.
Synonym:	Chlorous acid, sodium salt
Chemical formula:	NaClO <sub>2</sub>
Molecular weight:	90,44
CAS No	7758-19-2
EINECS (EC)No	231.836.6
EC Index No:	Not included
UN No	1908

**1.2. USE OF THE SUBSTANCE**

- Textile.
- Cellulose.
- Treatment of industrial and drinking water
- Wastewater treatment,
- Deodorization
- Production of chlorine dioxide.
- Feeding Industry.

**1.3. COMPANY IDENTIFICATION**

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**1.4. EMERGENCY TELEPHONE**

Toxicological information under heading 4

**2. HAZARDS IDENTIFICATION****2.1 HAZARDS TO HUMAN HEALTH:**

Harmful if swallowed  
It may produce burns in eyes and skin..

**2.2 HAZARDS TO THE ENVIRONMENT:**

Toxic to aquatic organisms.

**2.3 PHYSICOCHEMICAL HAZARDS:**

In contact with acids or acid substances, it generates chlorine dioxide(ClO<sub>2</sub>), a toxic and explosive gas.  
Contamination with reducing and combustible materials may give rise to reactions which generate chlorine dioxide.

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

Composition of the product	CAS No.		% w/w	Hazard classification	Risk phrases
SODIUM CHLORITE	7758-19-2	231-836-6	20-35	OXYDISING (O).TOXIC (T) <i>DANGEROUS FOR THE ENVIRONMENT (N)</i>	R-8,R-22, R 23/24,R-32, R-34, R 41, R-50
WATER	7732-18-5	231-791-2	Rest		

### 4. FIRST AID MEASURES

Toxicological Information Service

Telephone 91.562.04.20

NEED OF MEDICAL ATTENTION

Urgent

Nature of risk

Action

**SKIN CONTACT**

Wash the area affected with plenty of water for at least 15 minutes, removing soiled clothing and shoes. Seek immediate medical attention.

**EYE CONTACT**

Wash eyes with plenty of water for at least 30 minutes. Seek immediate medical attention.

**CONTACT WITH CLOTHING**

Remove clothing immediately. Submerge in water to prevent the possibility of a fire. Wash shoes with water .

**INGESTIÓN**

Do not induce vomit.  
If conscious, give water on demand and seek immediate medical attention.  
If unconscious, maintain the patient at rest and warm, and seek immediate medical attention.

**INHALATION**

In the event of formation of chlorine dioxide, move the patient to a well ventilated place, lying flat and at rest. If the affected person stops breathing, give artificial respiration. If breathing with difficulty, give oxygen. Always seek medical help.

**SPECIAL MEASURES TO BE AVAILABLE IN THE WORKPLACE**

Safety showers and eye-wash.

## 5. FIRE-FIGHTING MEASURES

### **SUITABLE EXTINGUISHING MEDIA:**

A lot of water. Form curtains of water to absorb the gases that are generated in the combustion.

Keep containers and deposits cool, spraying them with water if exposed to the fire.

If feasible, remove the combustible agent.

Remove the containers from the area of fire, if this does not entail risk.

### **EXTINGUISHING MEDIA WHICH MUST NOT BE USED:**

CO<sub>2</sub> powder (powdered dry ice), foam or fire blanket.

### **SPECIAL EXPOSURE HAZARDS ARISING FROM THE SUBSTANCE, COMBUSTION PRODUCTS:**

The product is not flammable or explosive. If it reaches 175 °C it decomposes to chlorine and chlorate.

Subsequent decomposition of the chlorate produces oxygen which may give rise to the explosion or bursting of closed containers.

### **SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS:**

Self-contained breathing equipment. Individual protective equipment (gloves and suitable clothing).

Seek emplacement with your back against the wind..

## 6. ACCIDENTAL RELEASE MEASURES

### **PERSONAL PRECAUTIONS:**

Avoid contact with the eyes, skin and clothing. Do not act without appropriate protective equipment (see section 8).

### **ENVIRONMENTAL PRECAUTIONS:**

If the spill is small, absorb the product using non-combustible materials such as sand or clay.

If the spill is large, keep the product away from drains and surface waters and use contention methods, do not use combustible materials (wood, paper, clothing etc.).

Notify the proper authorities.

### **METHODS FOR CLEANING UP:**

Contain spill using noncombustible material such as vermiculite, sand or earth.

Take the absorbent products to a safe storage for treatment by expert personnel in handling the product or an authorised waste manager.

## 7. HANDLING AND STORAGE

### 7.1 HANDLING:

Do not smoke, eat or drink when handling the product. Avoid the formation of sparks.  
Maintain storage and work areas totally clean, devoid of any trace of foreign or incompatible products.  
Before handling the product, make sure that the containers, vessels and tanks to be used are clean, dry and appropriate for the intended use. Do not return the product (nor samples) to containers or tanks (risk of decomposition).  
Avoid mixing with incompatible products (acids, acid materials, reducers, combustible materials, oils, greases, rags, etc).  
Containers shall be properly closed and appropriately labelled.  
Avoid spills and if they occur rinse them thoroughly before they dry. Avoid contact with the skin, eyes and clothing.  
Always use the recommended protective clothing.

### 7.2 STORAGE:

**Recommended materials:** For containers: Plastic (PP, PVC, PE), stainless steel tanks.  
For tanks and silos: Stainless steel, Polyester coated carbon steel, FRP  
**Incompatible materials :**  
Wood, Rubber, Aluminium, Copper and Alloys.  
**Storage conditions:** Keep in a dry place away from heat sources.  
**Special conditions:** Keep the product separated from flammables, combustibles, acids and organics. Avoid direct sunlight.  
**Applicable regulations:** COUNCIL DIRECTIVE 96/82/EC of 9 December 1996 on the control of major-accident hazards involving dangerous substances.

### 7.3 SPECIFIC USES:

In the generation of chlorine dioxide, its concentration shall be controlled, as it is explosive at concentrations greater than 8% by volume in air.

## 8.0 EXPOSURE CONTROLS / PERSONAL PROTECTION

### 8.1 EXPOSURE LIMIT VALUES:

VLA-ED	0,1 ppm	0,28 mg/m <sup>3</sup>	VLA-EC-	0,3 ppm (INSHT).	(as ClO <sub>2</sub> )
TLV-TWA	0,1 ppm	0,28 mg/m <sup>3</sup>	STEL-C	0,3 ppm (ACGIH)	(as ClO <sub>2</sub> )

### 8.2 EXPOSURE CONTROLS:

#### 8.2.1. Occupational exposure controls:

##### 8.2.1.1 Respiratory protection:

In the event of formation of chlorine dioxide use breathing protection mask with filter for inorganic gases B(Chlorine) for low concentrations (EN 136), for higher concentrations use self-contained breathing equipment. (EN.137).

##### 8.2.1.2 Hand protection:

Gloves for chemical hazards, PVC type (do not use leather or natural rubber) (EN 374)

##### 8.2.1.3 Eye protection:

Use safety goggles or face shield if there is a risk of projection of liquids (EN 166).

## 8.2 CONTROLES DE EXPOSICIÓN / PROTECCIÓN PERSONAL(CONTINUACIÓN)

### 8.2.1.4 Protección cutánea:

Traje Anti-acid suit. Do not use cotton, leather or natural rubber.

### 8.2.2.Environmental exposure controls:

Avoid the product from reaching drains and/or surface waters.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 GENERAL INFORMATION

Appearance: Colourless  
Odour: Odourless  
Physical state: Liquid.

### 9.2 HEALTH, SAFETY AND ENVIRONMENTAL INFORMATION

pH ( solution of 100 g/l H<sub>2</sub>O): Alkaline 11/12  
Boiling point/ boiling range: 112°C (300 g/l solution)  
Melting point: 170° C (Decomposes)  
Flammability: No flammable  
Oxidising properties: If it reaches dryness it becomes oxidising  
Vapour pressure (mmHg): N.A  
Specific gravity (water=1), 25°C  
25% solution aprox. 1210 Kg/m<sup>3</sup>  
31% solution aprox. 1280 Kg/m<sup>3</sup>  
34,5% solution aprox. 1310 Kg/m<sup>3</sup>  
Water solubility (g/100ml at 25°C): MISCIBLE

### 9.3 OTROS DATOS

Crystallisation temperature (°C): +10°C(34,5% solution)  
-10°C (25% solution)  
-2°C (7,5% solution)  
Decomposition temperature (°C): 170°C (in solid state)

## 10. STABILITY AND REACTIVITY

Stable:

Unstable:

### 10.1 CONDITIONS TO AVOID:

Heating, sun light.

### 10.2. MATERIALS TO AVOID:

Acids, acid substances (aluminum sulphate, aluminum chloride, ferric chloride..), wood, cellulose, grease, cotton.

### 10.3. HAZARDOUS DECOMPOSITION PRODUCTS:

The product decomposes into chlorine dioxide and oxygen under heating and direct sun-light, with risk of bursting of containers.

In contact with acid materials (Acids, aluminium polychloride, aluminum sulphate, ferric chloride, etc.) chlorine dioxide is formed, with risk of explosion.

Violent exothermic reaction, development of heat with reducing materials (sodium sulphite).

Potencialle explosive reaction with combustible materials (wood, cellulose, grease, cotton...)

## 11. TOXICOLOGICAL INFORMATION

### 11.1 ACUTE TOXICITY:

<b>Skin contact</b>	May cause skin irritation. With the impregnated clothes it may cause burns LD <sub>50</sub> 134 mg/kg/day
<b>Eye contact</b>	May cause burns in the eyes. It may cause ulceration of the conjunctiva and of the cornea.
<b>Ingestion</b>	It may cause burns in the mouth and oesophagus. It may cause intestinal perforation. Toxicity Oral Rat LD <sub>50</sub> 284 mg/kg ((Sodium chlorite 100%))
<b>Inhalation</b>	It can cause irritation of the respiratory tract and airways.

### 11.2 CHRONIC TOXICITY:

There is no evidence of carcinogenic potential.  
There is no evidence of mutagenic or teratogenic potential.

## 12. ECOLOGICAL INFORMATION

### 12.1. Ecotoxicity:

Toxic aquatic organisms.

#### Acute toxicity to fish:

- ◆ ZEBRAFISH, SHEEPSHEAD MINNOW Y RAINBOW TROUT  
LC<sub>50</sub> 96h = 100 mg/l

#### Acute toxicity to aquatic invertebrates:

- ◆ DAPHNIA MAGNA  
EC<sub>50</sub> 48h < 1 mg/l

#### Acute toxicity to microorganisms:

- ◆ ACTIVATED SLUDGE  
EC<sub>50</sub> 3h =6,5 mg/l

#### Acute toxicity to aquatic plants (algae):

- ◆ SELENASTRUM CAPRICORNUTUM  
EC<sub>50</sub> (96h) =1 mg/l (clorito 80%)

### 12.3. Persistence and degradability:

Irradiation of sodium chlorite solutions indicated a photodegradation half-life of about 30 minutes with a steady increase in pH (pH 8 to 12.6) and major products identified as hydroxide, chlorine dioxide and chloride with chlorate and hypochlorite as minor products and trace amounts of chlorine. The radiation dose (9000 j/m<sup>2</sup>) needed to produce a 50% reduction in chlorite concentration suggests that the doses (200-250 j/m<sup>2</sup>) used for drinking water disinfection would not result in a significant reduction in chlorite concentrations. It is not considered technically appropriate to perform a ready biodegradation test on sodium chlorite. However, sodium chlorite is expected to be rapidly reduced to sodium chloride in the environment, especially in anaerobic conditions.

### 12.4. Bioaccumulative potential :

Due to its extremely low lipophilicity and high instability in water, sodium chlorite and hence chlorine dioxide are not expected to bioaccumulate in fish

### 13. DISPOSAL CONSIDERATIONS

#### Disposal of the product, contaminated packaging and waste

Spent containers shall be rinsed to remove all remaining product.

Dilute the product with abundant water, avoiding the presence of solids which it may ignite (clothing, paper, wood, etc).

Take into account considerations stated in previous sections regarding incompatibilities.

Consult applicable European Community, National and local provisions relative to the appropriate elimination of this material and empty containers thereof.

### 14. TRANSPORT INFORMATION

#### Transport by road ADR :

Name	Chlorite solution
N° UN	1908
Hazard Class	8
Label	8
Packing group:	II
Orange panel:	80-1908

#### Transport by railroad RID

Name	Chlorite solution
N° UN	1908
Class	8
Label	8
Packing group:	II
Orange panel:	80-1908

#### Transport by ship IMDG

Name	Chlorite solution
N° UN	1908
Class	8
Label	8
Packing group:	II
FEm:	F-A,S-B

### 15. REGULATORY INFORMATION

Hazard classification of the product:

Harmful (Xn) Dangerous for the environment (N)

Hazard symbol of the product:



## 15. REGULATORY INFORMATION

### Phrases R y S:

R 22	Harmful if swallowed.
R 32	Contact with acids liberates <i>very</i> toxic gas.
R 41	Risk of serious damage to eyes.
R 50	Very toxic to aquatic organisms.
S 14	Keep away from acids.
S 17	Keep away from combustible material.
S 26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S-36/37/39	Wear suitable protective clothing, gloves and eye/face protection.
S 61	Avoid release to the environment. Refer to special instructions/safety data sheets.

## 16. OTHER INFORMATION

R phrases referred to under headings 2 and 3 of the Safety Data Sheet,:

R-8,	Contact with combustible material may cause fire.
R-22,	Harmful if swallowed.
R 23/24,	Toxic by inhalation and in contact with skin.
R-32,	Contact with acids liberates <i>very</i> toxic gas.
R-34,	Causes burns.
R 41,	Risk of serious damage to eyes.
R-50	Very toxic to aquatic organisms.

**The revision number 9 is adapted to the REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT (REACH)**

**The changes have been made in:**

**Section 1:** IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY

**Section 2:** HAZARDS IDENTIFICATION

**Section 3:** COMPOSITION / INFORMATION ON INGREDIENTS

**Section 15:** REGULATORY INFORMATION

**Section 16:** OTHER INFORMATION

The revision N° 7 substitute to the revision N°6 of August 2005.

The revision N°6 adapts the MSDS to the classification agreed by the Group of Sodium Chlorine of CEFIC according to the Annex VI of Directive 67/548/CEE, since this product doesn't appear in the Annex I of Directive 67/548/CEE carrying out changes in:

Headed

Section 2 COMPOSITION / INFORMATION ON INGREDIENTS

Section 15 REGULATORY INFORMATION (Classification and labeled)

Section 16 OTHER INFORMATIONS (Sentences R and S).

The information contained herein is also provided to the effects envisaged under Article 41 (Obligations of manufacturers, importers and suppliers) of Act 31 /1995 of 8th of November, B.O.E. 10-11-95, on Workplace Risks Prevention. Directive 89/391/EC.

These sheets have been elaborated according to the provisions of Directive 2001/58/EC OJEC 07-08-2001 which modifies Directive 91/155/EEC, and applies article 14 of Directive 1999/45/EC and article 27 of Directive 67/548/CEE. Adaptation: Order of 5<sup>th</sup> of October of 2000 on the modification of the Regulation on new substances and the classification, packaging and labelling of dangerous substances, approved by R.D. 363/95. Article 23 of RD 363/95 and RD 99/2003 of 24<sup>th</sup> of January of 2003 (BOE 4 de Febrero de 2003) which establish the specific information modalities with respect to dangerous substances and preparations (safety data sheets).

Information sources used in the elaboration of this Safety Data Sheet:

- HANDBOOK OF REACTIVE CHEMICALS HAZARDS. BREThERIC 4<sup>a</sup> Ed. 1990
- DANGEROUS PROPERTIES INDUSTRIAL MATERIALS (TENTH EDITION) SAX
- HAZARDOUS CHEMICALS DATA BOOK (2<sup>nd</sup> EDITION) G.WEIS.
- LIMITES DE EXPOSICIÓN PROFESIONALES **INSHT** (2006) / **ACGIH** (2005).
- IARC (International Agency for Research on Cancer).
- NIOSH (National Institute for Occupational Safety and Health).
- NTP (National Toxicology Program).
- ACGIH (American Conference of Governmental Industrial Hygienist).
- OSHA (Occupational Health and Safety Assessment).
- INSHT (Instituto Nacional de Seguridad e Higiene en el Trabajo).
- IUCLID DATA SET

N.A. = not applicable    N.A.D = no available data    < SMALLER THAN    > GREATER THAN

**VLA:** Ambient Limit Value, **ED:** Daily Exposure, **EC:** Short duration exposure. (According to Spanish H&S limits)

**TLV:** Threshold Limit Value, **TWA:** Time Weighted Average, **STEL:** Short Term Exposure Limit, **C:** Ceiling.

Any chemical product can be handled safely if their physical and chemical properties are known, and appropriate safety measures and clothing are employed.

The information contained in this brochure are a guide to the user and are based on bibliography and on our own experience, aiming to reflect the current state of the art, but which, under no circumstances, shall compromise our liability.

Said information cannot be used as a substitute to patented processes.

Users shall comply with the legal dispositions and regulations in force and, particularly, with those related to Health and Safety, Storage and Transport of Dangerous Goods.

We recommend our clients to perform the corresponding tests before using the product in new, insufficiently experimented, fields..

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