

# Sodium chlorate solution (R8 & R10)

## Safety Data Sheet

According to U.S. Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations and according to Canada's Hazardous Products Regulation, February 11, 2015.

Revisions Date: 05/09/2018

Date of Issue: 11/30/2017

Version: 2.0

## SECTION 1: IDENTIFICATION

### Product Identifier

**Product Form:** Mixture

**Product Name:** Sodium chlorate solution (R8 & R10)

### Intended Use of the Product

Mainly used in the on-site production of chlorine dioxide for bleaching pulp. Also, used in the manufacture of dyes, explosives & matches, perchlorate manufacturing, ore processing, leather tanning and finishing, production of oxygen in rescue breathing apparatus, as an oxidizing agent, analytical reagent and herbicide.

### Name, Address, and Telephone of the Responsible Party

#### **Manufacturer**

CHEMTRADE LOGISTICS INC.

155 Gordon Baker Road

Suite 300

Toronto, Ontario M2H 3N5

For SDS Info: (416) 496-5856

[www.chemtradelogistics.com](http://www.chemtradelogistics.com)

### Emergency Telephone Number

**Emergency Number** :

Canada: CANUTEC +1-613-996-6666 / US: CHEMTREC +1-800-424-9300

INTERNATIONAL: +1-703-741-5970

Chemtrade Emergency Contact: (866) 416-4404

For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident, call CHEMTREC – Day or Night

## SECTION 2: HAZARDS IDENTIFICATION

### Classification of the Substance or Mixture

#### **GHS Classification**

Ox. Liq. 2                      H272

Acute Tox. 4 (Oral)        H302

Aquatic Chronic 2        H411

Full text of hazard classes and H-statements : see section 16

### Label Elements

#### **GHS Labeling**

##### **Hazard Pictograms**



##### **Signal Word**

: Danger

##### **Hazard Statements**

: H272 - May intensify fire; oxidizer.

H302 – Acute Tox. 4 (Oral)

H411 - Toxic to aquatic life with long lasting effects.

##### **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.

P221 – Take any precaution to avoid mixing with combustibles and other incompatible materials.

P273 - Avoid release to the environment.

P280 - Wear protective gloves, protective clothing, and eye protection.

P370+P378 - In case of fire: Use appropriate media (see section 5) to extinguish.

P391 - Collect spillage.

# Sodium chlorate solution (R8 & R10)

## Safety Data Sheet

According to U.S. Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations and according to Canada's Hazardous Products Regulation, February 11, 2015.

P420 Store away from incompatible materials

P501 - Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations.

### Other Hazards

Exposure may aggravate pre-existing eye, skin, or respiratory conditions. Overexposure may cause methemoglobinemia. Initial manifestation of methemoglobinemia is cyanosis, characterized by navy lips, tongue and mucous membranes, with skin color being slate grey. Further manifestation is characterized by headache, weakness, dyspnea, dizziness, stupor, respiratory distress and death due to anoxia.

### Unknown acute toxicity

No data available

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### Mixture

Name	Product Identifier	%*	GHS Ingredient Classification
Water	(CAS-No.) 7732-18-5	30 – 70	Not classified
Sodium chlorate	(CAS-No.) 7775-09-9	30 – 70 <sup>+</sup>	Ox. Sol. 2, H272 Acute Tox. 4 (Oral), H302 Aquatic Chronic 2, H411

Full text of H-phrases: see section 16

\*Percentages are listed in weight by weight percentage (w/w%) for liquid and solid ingredients. Gas ingredients are listed in volume by volume percentage (v/v%).

<sup>+</sup>The actual concentration of the ingredient(s) is withheld as a trade secret in accordance with Regulations Amending the Hazardous Products Regulations (HPR) SOR/2018-68 and 29 CFR 1910.1200.

## SECTION 4: FIRST AID MEASURES

### Description of First-aid Measures

**General:** Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

**Inhalation:** When symptoms occur: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Get medical attention if adverse health effects persist or are severe.

**Skin Contact:** Remove contaminated clothing. Drench affected area with water for at least 15 minutes. Get medical advice/attention. Wash clothing before storing or reuse. Clean shoes thoroughly before reuse.

**Eye Contact:** Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention.

**Ingestion:** Rinse mouth. Do NOT induce vomiting. Obtain medical attention.

### Most Important Symptoms and Effects Both Acute and Delayed

**General:** Not expected to present a significant hazard under anticipated conditions of normal use. Overexposure to this material may result in methemoglobinemia. Methemoglobinemia decreases the blood's ability to carry oxygen and results in symptoms such as dizziness, drowsiness, headache, shortness of breath, blue skin and lips, rapid heart rate, unconsciousness, and possibly death.

**Inhalation:** Prolonged exposure may cause irritation. Cyanosis may be noted within several hours following inhalation or ingestion.

**Skin Contact:** Prolonged exposure may cause skin irritation.

**Eye Contact:** May cause slight irritation to eyes.

**Ingestion:** Ingesting large quantities can cause abdominal pain, nausea, and diarrhea, possibly with dark blood, cyanosis, possibly progressing to headache, difficulty breathing, dizziness, seizures, or coma. Symptoms may include redness and edema.

**Chronic Symptoms:** None expected under normal conditions of use.

### Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention. If medical advice is needed, have product container or label at hand.

## SECTION 5: FIRE-FIGHTING MEASURES

### Extinguishing Media

**Suitable Extinguishing Media:** Water. Use water spray or fog.

# Sodium chlorate solution (R8 & R10)

## Safety Data Sheet

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**Unsuitable Extinguishing Media:** Do not use dry extinguishing powder. Foam. Carbon dioxide (CO<sub>2</sub>). Do not use fire blanket.

### **Special Hazards Arising From the Substance or Mixture**

**Fire Hazard:** May intensify fire; oxidizer.

**Explosion Hazard:** Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.

**Reactivity:** Oxidizer: increases the burning rate of combustible materials.

### **Advice for Firefighters**

**Precautionary Measures Fire:** Exercise caution when fighting any chemical fire.

**Firefighting Instructions:** Use water spray or fog for cooling exposed containers. In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

**Protection During Firefighting:** Do not enter fire area without proper protective equipment, including respiratory protection.

**Hazardous Combustion Products:** Hydrogen chloride. Sodium oxides. Halogenated compounds, metal oxide/oxides.

**Other Information:** Do not allow run-off from fire fighting to enter drains or water courses.

### **Reference to Other Sections**

Refer to Section 9 for flammability properties.

## **SECTION 6: ACCIDENTAL RELEASE MEASURES**

### **Personal Precautions, Protective Equipment and Emergency Procedures**

**General Measures:** Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking, flames, hot surfaces, sparks, or other ignition sources in the area. Avoid prolonged contact with eyes, skin and clothing. Avoid breathing dust. Keep away from combustible material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

#### **For Non-Emergency Personnel**

**Protective Equipment:** Use appropriate personal protective equipment (PPE).

**Emergency Procedures:** Evacuate unnecessary personnel.

#### **For Emergency Personnel**

**Protective Equipment:** Equip cleanup crew with proper protection.

**Emergency Procedures:** Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit. Ventilate area.

### **Environmental Precautions**

Prevent entry to sewers and public waters. Avoid release to the environment. Collect spillage.

### **Methods and Materials for Containment and Cleaning Up**

**For Containment:** Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Use only non-sparking tools.

**Methods for Cleaning Up:** Clean up spills immediately and dispose of waste safely. Absorb and/or contain spill with inert material, then place in suitable container. Do not take up in combustible material such as: saw dust or cellulosic material. It may lead to a fire risk when it dries out. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations.

### **Reference to Other Sections**

See Section 8 for exposure controls and personal protection and Section 13 for disposal considerations.

## **SECTION 7: HANDLING AND STORAGE**

### **Precautions for Safe Handling**

Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Avoid prolonged contact with eyes, skin and clothing. Avoid breathing vapors, mist, and spray. Keep away from extremely high or low temperatures, ignition sources, and incompatible materials. - No smoking.

**Additional Hazards When Processed:** May cause or intensify fire; oxidizer.

**Hygiene Measures:** Handle in accordance with good industrial hygiene and safety procedures.

### **Conditions for Safe Storage, Including Any Incompatibilities**

**Technical Measures:** Comply with applicable regulations. Proper grounding procedures to avoid static electricity should be followed.

# Sodium chlorate solution (R8 & R10)

## Safety Data Sheet

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**Storage Conditions:** Keep container closed when not in use. Store in a dry, cool place. Keep/Store away from extremely high or low temperatures, incompatible materials, food and drink. Keep in fireproof place. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

**Incompatible Materials:** Strong acids. Reducing agents. Combustible materials. Ammonia. Organic materials. Reactive metals (Aluminum, Potassium, and Zinc).

### Specific End Use(s)

Mainly used in the on-site production of chlorine dioxide for bleaching pulp. Also, used in the manufacture of dyes, explosives & matches, perchlorate manufacturing, ore processing, leather tanning and finishing, production of oxygen in rescue breathing apparatus, as an oxidizing agent, analytical reagent and herbicide.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control Parameters

For substances listed in section 3 that are not listed here, there are no established Exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), AIHA (WEEL), NIOSH (REL), OSHA (PEL), Canadian provincial governments, or the Mexican government.

### Exposure Controls

**Appropriate Engineering Controls:** Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed. Gas detectors should be used when flammable gases or vapors may be released. Proper grounding procedures to avoid static electricity should be followed.

**Personal Protective Equipment:** Gloves. Protective clothing. Protective goggles or safety glasses.



**Materials for Protective Clothing:** Chemically resistant materials and fabrics. Wear fire/flammable resistant/retardant clothing.

**Hand Protection:** Wear protective gloves.

**Eye Protection:** Chemical safety goggles or safety glasses.

**Skin and Body Protection:** Wear suitable protective clothing. Fire retardant coveralls and other protective clothing is recommended. Note\*\* Sodium Chlorate Solution contamination on protective clothing, gloves, and shoes present a flammable hazard! When dry, the contaminated protective clothing, gloves or shoes may ignite due to friction, heat or source of ignition. Contaminated clothing should be laundered immediately. Do not wear leather shoes, leather gloves or leather belts. Wear easily washable chemical resistant clothing.

**Respiratory Protection:** If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn. In case of inadequate ventilation, oxygen deficient atmosphere, or where exposure levels are not known wear approved respiratory protection.

**Other Information:** When using, do not eat, drink or smoke.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### Information on Basic Physical and Chemical Properties

<b>Physical State</b>	: Liquid
<b>Appearance</b>	: Colorless to pale yellow
<b>Odor</b>	: Salty
<b>Odor Threshold</b>	: Not available
<b>pH</b>	: 10
<b>Evaporation Rate</b>	: Not available
<b>Melting Point</b>	: 3 °C (37.4 °F)
<b>Freezing Point</b>	: Not available
<b>Boiling Point</b>	: Not available
<b>Flash Point</b>	: Not applicable
<b>Auto-ignition Temperature</b>	: Not applicable

# Sodium chlorate solution (R8 & R10)

## Safety Data Sheet

According to U.S. Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations and according to Canada's Hazardous Products Regulation, February 11, 2015.

<b>Decomposition Temperature</b>	: 265 °C (509 °F)
<b>Flammability (solid, gas)</b>	: Not applicable
<b>Lower Flammable Limit</b>	: Not applicable
<b>Upper Flammable Limit</b>	: Not applicable
<b>Vapor Pressure</b>	: Not available
<b>Relative Vapor Density at 20°C</b>	: Not available
<b>Relative Density</b>	: Not available
<b>Specific Gravity</b>	: Not available
<b>Solubility</b>	: Easily soluble in the following materials: cold water and hot water.
<b>Partition Coefficient: N-Octanol/Water</b>	: Not available
<b>Viscosity</b>	: Not available

## SECTION 10: STABILITY AND REACTIVITY

**Reactivity:** Oxidizer: increases the burning rate of combustible materials.

**Chemical Stability:** May intensify fire; oxidizer.

**Possibility of Hazardous Reactions:** Hazardous polymerization will not occur.

**Conditions to Avoid:** Extremely high or low temperatures and incompatible materials. Sparks, heat, open flame, combustible materials, organic material and other sources of ignition.

**Incompatible Materials:** Strong acids. Reducing agents. Combustible materials. Ammonia. Organic materials. Reactive metals (Aluminum, Potassium and Zinc). Mixture with flammable or combustible materials may ignite readily or explode and be sensitive to shock, heat, or friction. Mixtures of dry sodium chlorate with organic materials such as cloth, paper, leather, oils, greases, paints, and solvents may be readily ignited by heat or friction. Reacts violently with combustibles, sulfuric acid, and reducing materials. Explosions may be caused by contact with ammonia salts, ammonium thiosulfate, antimony sulfide, arsenic, carbon, charcoal, organic matter, organic acids, thiocyanates, chemically active metals, oils, metal sulfides, nitrobenzene, powdered metals, and sugar. Reacts with many organic materials to form shock-sensitive mixtures, causing explosion hazard.

**Hazardous Decomposition Products:** Thermal decomposition generates: Hydrogen chloride. Sodium oxides. Decomposes at 265° C into oxygen and salt. Reacts with acids to produce chlorine, chlorine dioxide and perchloric acid.

## SECTION 11: TOXICOLOGICAL INFORMATION

### Information on Toxicological Effects - Product

**Acute Toxicity (Oral):** Not classified

**Acute Toxicity (Dermal):** Not classified

**Acute Toxicity (Inhalation):** Not classified

### LD50 and LC50 Data:

Sodium Chlorate Solution (R8 & R10)	
ATE (Oral)	1,714.29 mg/kg body weight

**Skin Corrosion/Irritation:** Not classified

**pH:** 10

**Eye Damage/Irritation:** Not classified

**pH:** 10

**Respiratory or Skin Sensitization:** Not classified

**Germ Cell Mutagenicity:** Not classified

**Carcinogenicity:** Not classified

**Specific Target Organ Toxicity (Repeated Exposure):** Not classified

**Reproductive Toxicity:** Not classified

**Specific Target Organ Toxicity (Single Exposure):** Not classified

**Aspiration Hazard:** Not classified

**Symptoms/Effects After Inhalation:** Prolonged exposure may cause irritation. Cyanosis may be noted within several hours following inhalation or ingestion.

# Sodium chlorate solution (R8 & R10)

## Safety Data Sheet

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**Symptoms/Effects After Skin Contact:** Prolonged exposure may cause skin irritation.

**Symptoms/Effects After Eye Contact:** May cause slight irritation to eyes.

**Symptoms/Effects After Ingestion:** Ingestion may cause adverse effects. Ingesting large quantities can cause abdominal pain, nausea, and diarrhea, possibly with dark blood, cyanosis, possibly progressing to headache, difficulty breathing, dizziness, seizures, or coma. Symptoms may include redness and edema.

**Chronic Symptoms:** None expected under normal conditions of use.

### Information on Toxicological Effects - Ingredient(s)

#### LD50 and LC50 Data:

Sodium chlorate (7775-09-9)	
LD50 Oral Rat	1200 mg/kg
LD50 Dermal Rabbit	> 2000 mg/kg
LC50 Inhalation Rat	> 5.59 mg/l (Exposure time: 4.5 h)
Sodium chlorate (7775-09-9)	
National Toxicology Program (NTP) Status	Some evidence of carcinogenic activity.

## SECTION 12: ECOLOGICAL INFORMATION

### Toxicity

**Ecology - General:** Toxic to aquatic life with long lasting effects.

Sodium chlorate (7775-09-9)	
LC50 Fish 1	13500 mg/l (Exposure time: 96 h - Species: Pimephales promelas)
LC50 Fish 2	1750 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss)

### Persistence and Degradability

Sodium chlorate solution (R8 & R10)	
Persistence and Degradability	May cause long-term adverse effects in the environment.

### Bioaccumulative Potential

Sodium chlorate solution (R8 & R10)	
Bioaccumulative Potential	Not established.

**Mobility in Soil** Not available

### Other Adverse Effects

**Other Information:** Avoid release to the environment.

## SECTION 13: DISPOSAL CONSIDERATIONS

**Waste Disposal Recommendations:** Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

**Ecology - Waste Materials:** Avoid release to the environment. This material is hazardous to the aquatic environment. Keep out of sewers and waterways.

## SECTION 14: TRANSPORT INFORMATION

The shipping description(s) stated herein were prepared in accordance with certain assumptions at the time the SDS was authored, and can vary based on a number of variables that may or may not have been known at the time the SDS was issued.

\*When shipped in accordance with US DOT 49 CFR part 171.4(c) and other appropriate sections/provisions this material is not designated as a marine pollutant when transported by road or rail.





\*\*When shipped in accordance with the Canada Transport of Dangerous Goods Regulations part 1.45.1 and other appropriate sections/provisions this material is not designated as a marine pollutant when transported by road or rail.

# Sodium chlorate solution (R8 & R10)

## Safety Data Sheet

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**Special precautions for user:** Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

TRANSPORTATION CLASSIFICATION	DOT	TDG	IMDG	IATA
Identification Number	UN2428	UN2428	UN2428	UN2428
Proper Shipping Name	SODIUM CHLORATE, AQUEOUS SOLUTION	SODIUM CHLORATE, AQUEOUS SOLUTION	SODIUM CHLORATE, AQUEOUS SOLUTION	SODIUM CHLORATE, AQUEOUS SOLUTION
Transport Hazard Class(es)	5.1	5.1	5.1	5.1
				
Packing Group	II	II	II	II
Environmental Hazards	Marine Pollutant : Yes*	Marine Pollutant : Yes**	Marine Pollutant : Yes	Marine Pollutant: N/A
Emergency Response	ERG Number : 140	ERAP Index: Not applicable	EMS: F-H, S-Q	ERG code (IATA): 5L
Additional Information	Not applicable	Not applicable	Not applicable	Not applicable

## SECTION 15: REGULATORY INFORMATION

### US Federal Regulations

Chemical Name (CAS No.)	CERCLA RQ	EPCRA 304 RQ	SARA 302 TPQ	SARA 313
Sodium chlorate (7775-09-9)	Not applicable	Not applicable	Not applicable	No

### SARA 311/312

<b>Sodium chlorate solution (R8 &amp; R10)</b>
Fire hazard, Immediate (acute) health hazard

US TSCA Flags Not present

### US State Regulations

#### California Proposition 65

Chemical Name (CAS No.)	Carcinogenicity	Developmental Toxicity	Female Reproductive Toxicity	Male Reproductive Toxicity
Sodium chlorate (7775-09-9)	No	No	No	No

### State Right-To-Know Lists

<b>Sodium chlorate (7775-09-9)</b>
U.S. - Massachusetts - Right To Know List - Yes
U.S. - New Jersey - Right to Know Hazardous Substance List - Yes
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List - No
U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances - No
U.S. - Pennsylvania - RTK (Right to Know) List - Yes

### Canadian Regulations

<b>Sodium chlorate (7775-09-9)</b>
Listed on the Canadian DSL (Domestic Substances List)
Not listed on the Canadian NDSL (Non-Domestic Substances List)

### International Inventories/Lists

Chemical Name (CAS No.)	Australia AICS	Turkey CICR	Korea ECL	EU EINECS	EU ELINCS	EU SVHC	EU NLP	Mexico INSQ

# Sodium chlorate solution (R8 & R10)

## Safety Data Sheet

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Sodium chlorate (7775-09-9)	Yes	Yes	Yes	Yes	No	No	No	Yes
<b>Chemical Name (CAS No.)</b>	<b>China IECSC</b>	<b>Japan ENCS</b>	<b>Japan ISHL</b>	<b>Japan PDSCL</b>	<b>Japan PRTR</b>	<b>Philippines PICCS</b>	<b>New Zealand NZIOC</b>	<b>US TSCA</b>
Sodium chlorate (7775-09-9)	Yes	Yes	No	Yes	No	Yes	Yes	Yes

### SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Date of Preparation or Latest Revision : 05/09/2018

#### Revision Summary

Section	Change	Date Changed
3	HPR trade secret statement	05/09/2018

**Other Information** : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200 and Canada's Hazardous Products Regulations (HPR).

#### GHS Full Text Phrases:

Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Aquatic Chronic 2	Hazardous to the aquatic environment - Chronic Hazard Category 2
Ox. Liq. 2	Oxidizing liquids Category 2
H272	May intensify fire; oxidizer
H302	Harmful if swallowed
H411	Toxic to aquatic life with long lasting effects

#### NFPA 704

**NFPA Health Hazard** : 2  
**NFPA Fire Hazard** : 2  
**NFPA Reactivity Hazard** : 1  
**NFPA Specific Hazards** : OX - Materials that possess oxidizing properties.

#### HMIS Rating

**Health** : 2  
**Flammability** : 2  
**Physical** : 2  
**PPE** See Section 8

#### Abbreviations and Acronyms

AICS – Australian Inventory of Chemical Substances	LC50 - Median Lethal Concentration
ACGIH – American Conference of Governmental Industrial Hygienists	LD50 - Median Lethal Dose
AIHA – American Industrial Hygiene Association	LOAEL - Lowest Observed Adverse Effect Level
ATE - Acute Toxicity Estimate	LOEC - Lowest-observed-effect Concentration
BCF - Bioconcentration factor	Log Pow - Octanol/water Partition Coefficient
BEI - Biological Exposure Indices (BEI)	NFPA 704 – National Fire Protection Association - Standard System for the Identification of the Hazards of Materials for Emergency Response
CAS No. - Chemical Abstracts Service number	NIOSH - National Institute for Occupational Safety and Health
CERCLA RQ - Comprehensive Environmental Response, Compensation, and Liability Act - Reportable Quantity	NLP - Europe No Longer Polymers List
CICR - Turkish Inventory and Control of Chemicals	NOAEL - No-Observed Adverse Effect Level
DOT – 49 CFR – US Department of Transportation – Code of Federal Regulations Title 49 – Transportation.	NOEC - No-Observed Effect Concentration
EC50 - Median effective concentration	NZIOC - New Zealand Inventory of Chemicals
ECL - Korea Existing Chemicals List	OEL - Occupational Exposure Limits
EINECS - European Inventory of Existing Commercial Chemical Substances	OSHA – Occupational Safety and Health Administration
ELINCS - European List of Notified Chemical Substances	PEL - Permissible Exposure Limits
EmS - IMDG Emergency Schedule Fire & Spillage	PICCS - Philippine Inventory of Chemicals and Chemical Substances
ENCS - Japanese Existing and New Chemical Substances Inventory	PDSCL - Japan Poisonous and Deleterious Substances Control Law
	PPE – Personal Protective Equipment



# Sodium chlorate solution (R8 & R10)

## Safety Data Sheet

According to U.S. Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations and according to Canada's Hazardous Products Regulation, February 11, 2015.

EPA – Environmental Protection Agency	PRTR - Japan Pollutant Release and Transfer Register
EPCRA 304 RQ – EPCRA 304 Extremely Hazardous Substance Emergency	REL - Recommended Exposure Limit
Planning and Community Right-to-Know-Act – Reportable Quantity	SADT - Self Accelerating Decomposition Temperature
ERAP Index – Emergency Response Assistance Plan Quantity Limit	SARA - Superfund Amendments and Reauthorization Act
ErC50 - EC50 in Terms of Reduction Growth Rate	SARA 302 - Section 302, 40 CFR Part 355
ERG code (IATA) - Emergency Response Drill Code as found in the International Civil Aviation Organization (ICAO)	SARA 311/312 - Sections 311 and 312, 40 CFR Part 370 Hazard Categories
ERG No. - Emergency Response Guide Number	SARA 313 - Section 313, 40 CFR Part 372
HCCL - Hazard Communication Carcinogen List	SRCL - Specifically Regulated Carcinogen List
HMIS – Hazardous Materials Information System	STEL - Short Term Exposure Limit
IARC - International Agency for Research on Cancer	SVHC – European Candidate List of Substance of Very High Concern
IATA - International Air Transport Association – Dangerous Goods Regulations	TDG – Transport Canada Transport of Dangerous Goods Regulations
IDLH - Immediately Dangerous to Life or Health	TLM - Median Tolerance Limit
IECSC - Inventory of Existing Chemical Substances Produced or Imported in China	TLV - Threshold Limit Value
IMDG - International Maritime Dangerous Goods Code	TPQ - Threshold Planning Quantity
INSQ - Mexican National Inventory of Chemical Substances	TSCA – United States Toxic Substances Control Act
ISHL - Japan Industrial Safety and Health Law	TWA - Time Weighted Average
	WEEL - Workplace Environmental Exposure Levels

*Handle product with due care and avoid unnecessary contact. This information is supplied under U.S. OSHA'S "Right to Know" (29 CFR 1910.1200) and Canada's WHMIS regulations. Although certain hazards are described herein, we cannot guarantee these are the only hazards that exist. The information contained herein is based on data available to us and is believed to be true and accurate but it is not offered as a product specification. No warranty, expressed or implied, regarding the accuracy of this data, the hazards connected with the use of the product, or the results to be obtained from the use thereof, is made and Chemtrade and its affiliates assume no responsibility. Chemtrade is a member of the CIAC (Chemistry Industry Association of Canada) and adheres to the codes and principles of Responsible Care™.*



Chemtrade NA GHS SDS 2015