1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING

Product Identifier:

Product Name: Sodium Chlorate

CAS Number: 7775-09-9

EINECS Number: 231-887-4

EU Index Number: 017-005-00-9

REACH Registration Number: 01-2119474389-23-XXXX

Relevant identified uses of the substance or mixture and uses advised against:

Identified use(s): Oxidising agent. For generation of chlorine dioxide for bleaching chemical pulp.

Company name:

Nexchem Ltd
Unit 3 Barshaw Park
Leycroft Road
Leicester
LE4 1ET
Tel: 0116 2311130
24/7 Emergency Tel: 0800 246 1274
Email: sales@nexchem.co.uk

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture:

Regulation 1272/2008 (CLP): Oxidizing solids, Category 1 H271: May cause fire or explosion; strong oxidizer.
Acute toxicity, Category 3 H301: Toxic if swallowed.

Label elements:

According to Regulation (EC) No. 1272/2008 (CLP):

Signal word(s): Danger.

Hazard statement(s): H271: May cause fire or explosion; strong oxidiser.
H302: Harmful if swallowed.

[cont…]

Precautionary statement(s):

Prevention:
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 skin thoroughly after handling.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:
P301 + P310 + P330 IF SWALLOWED: Immediately call a POISON CENTRE/doctor. Rinse mouth.
P370 + P378 In case of fire: Use water spray to extinguish.
P371 + P380 + P375 In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

Contains: Sodium Chlorate

Other hazards: No further information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substances:

Substance name: Sodium Chlorate
REACH Registration Number: 01-2119474389-23-XXXX
CAS Number: 7775-09-9
EC Number: 231-887-4
Content: >=90 – <=100
Classification: Ox. Sol. 1 - H271. Acute Tox. 3 – H301.

4. FIRST AID MEASURES

Description of first aid measures:

General advice: Immediate medical attention is required. Move out of dangerous area. Show this safety data sheet to the doctor in attendance. Symptoms of poisoning may appear several hours later.
Inhalation: Remove to fresh air. Keep patient warm and at rest. Rinse nose and mouth with water.
Skin contact: Immediately remove all contaminated clothing and shoes and soak them in water to prevent risk of fire, do not allow to dry out until washed.
Eye contact: Rinse with plenty of water. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
Ingestion: Clean mouth with water and drink afterwards plenty of water. Induce vomiting immediately and call a physician. Never give anything by mouth to an unconscious person. Take victim immediately to hospital.

Most import symptoms and effects, both acute and delayed:

General information: The absorption of this product into the body may lead to the formation of methaemoglobin that, in sufficient concentration, causes cyanosis.
Toxic if swallowed.

Indication of any immediate medical attention and special treatment needed:

Treatment: Not to be treated with methylthionine.

[cont…]

5. FIRE-FIGHTING MEASURES

Extinguishing Media:

Suitable extinguishing media: Water.

Unsuitable extinguishing media: Carbon dioxide (CO2). Powder. Fire blanket.

Special hazards arising from the substance or mixture:

Specific hazards during fire-fighting: Water spray may be ineffective unless used by experienced firefighters.
Do not allow run-off from firefighting to enter drains or water courses.

Hazardous combustion products: No hazardous combustion products are known.

Advice for fire-fighters: Wear self-contained breathing apparatus.
Wear protective clothing to prevent contact with skin and eyes.

Further information: Use water spray to cool unopened containers. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:
Use personal protective equipment. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Only qualified personnel equipped with suitable protective equipment may intervene. Prevent unauthorised persons entering the zone.

Environmental precautions: Do not flush into surface water or sanitary sewer system. Discharge into the environment must be avoided.

Methods and material for containment and cleaning up:
Pick up and arrange disposal without creating dust. Collect in plastic or metal containers for disposal. After cleaning, flush away traces with water. Avoid contact with combustible material (paper, wool, oil).

Reference to other sections: For disposal considerations see section 13.
For personal protection see Section 8.

7. HANDLING AND STORAGE

Precautions for safe handling: For personal protection see section 8. Avoid formation of respirable particles. Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking. Smoking, eating and drinking should be prohibited in the application area. Dispose of rinse water in accordance with local and national regulations. When handling, use only inert lubricants and packings for pumps, valves and other equipment. Never return unused material to storage receptacle. Protect from contamination. Keep away from heat and sources of ignition.

[cont…]

Advice on protection against fire and explosion:

Provide appropriate exhaust ventilation at places where dust is formed. No sparking tools should be used. There is a risk of fire and explosion in dry mixtures with other substances, especially certain organic materials. Keep away from combustible material.

Hygiene measures: Avoid contact with skin, eyes and clothing. When using do not eat or drink. When using do not smoke. Wash hands before breaks and immediately after handling the product. Work clothes should be washed daily in water-based laundry systems.

Conditions for safe storage, including any incompatibilities:

Requirements for storage areas and containers. Prevent unauthorized access. Keep containers tightly closed in a dry, cool and well-ventilated place. Store in a fireproof area. FIBC's: Store on gravel or crushed stone. Avoid storing in an asphalt-paved area. The separation of stacks should be at least 8-10 m. Do not reuse FIBC's. Keep container tightly closed.

Further information on storage conditions: Keep away from food, drink and animal feeding stuffs.
Keep away from combustible material.

Advice on common storage: Store separately from all other materials. Do not store near acids.

Further information on storage stability: No decomposition if stored and applied as directed.

Specific end use(s): No information available.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters:

Occupational Exposure Limits: Contains no substances with occupational exposure limit values.

DNEL: Workers, skin contact, long-term systemic effects, 4.2 mg/kg bw/day
Workers, Inhalation, long-term systemic effects, 0.6 mg/m3
Consumers, ingestion, long-term systemic effects, 0.043 mg/kg bw/day

PNEC: Fresh water, 1 mg/l Marine water, 1 mg/l
Soil, 3.33 mg/kg dry weight
Sewage treatment plant, 100 mg/l
Secondary poisoning, 10 mg/kg food
Marine sediment, 3.6 mg/l

Exposure controls:

Appropriate engineering controls: Provide appropriate exhaust ventilation at places where dust is formed.
Ensure that eyewash stations and safety showers are close to the workstation location.

Respiratory protection: Half mask with a particle filter P2 (EN 143)

Hand protection: PVC gloves

Eye/face protection: Safety glasses

Skin and body protection: Protective suit

[cont…]

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties:

Appearance:	Crystalline
Colour:	White
Odour:	Odourless
Odour threshold:	No data available
pH:	Neutral
Melting point/range:	255 – 260°C - Decomposes without melting
Boiling point/range:	Not applicable
Flash point:	Not applicable
Evaporation rate:	Not applicable
Flammability:	This product is not flammable. Not applicable

Upper explosion limit / Upper flammability limit: No data available

Lower explosion limit / Lower flammability limit: No data available

Vapour pressure:	Not applicable
Relative vapour density:	Not applicable
Relative density:	2.54 @ 20.2°C
Solubility(ies):	
Water solubility:	696-736 g/l water @ 20°C
Solubility in other solvents:	No data available

Partition coefficient: n- octanol/water: log Pow: < -2.9

Decomposition Temperature:	> 250°C
Viscosity:	
Viscosity, dynamic:	Not applicable
Viscosity, kinematic:	Not applicable
Explosive properties:	Not explosive
Oxidising properties:	The substance or mixture is classified as oxidising with the category 1
Self-ignition:	Not applicable

10. STABILITY AND REACTIVITY

Reactivity: Sodium chlorate is a strong oxidising agent. May develop chlorine if mixed with acidic solutions. Reacts violently with strong acids producing toxic and potentially explosive gases. e.g., chlorine and chlorine dioxide.

Chemical stability: There is a risk of fire and explosion in dry mixtures with other substances, especially certain organic materials. Textiles, cellulose or leather contaminated with chlorate ignite easily with minor friction.

Possibility of hazardous reactions: Contact with acids liberates toxic gas. A confined container with sodium chlorate can explode if heated above the decomposition temperature (250°C).

Conditions to avoid: Avoid elevated temperatures. Extremes of temperature and direct sunlight.

Incompatible materials: Materials to avoid: Organic materials. Combustible material. Strong acids.

Hazardous decomposition products: Oxygen. No hazardous decomposition products are known.
Thermal decomposition: > 250°C

[cont…]

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects:

Components: Sodium chlorate

Acute toxicity: Toxic if swallowed.

Acute oral toxicity: Acute toxicity estimate: 100 mg/kg. Method: Acute toxicity estimate according to Regulation (EC) No. 1272/2008.

Acute inhalation toxicity: LC50 (Rat, male and female): > 5.59 mg/l. Exposure time: 4.5 h. Test atmosphere: dust/mist
Method: OECD Test Guideline 403 GLP: yes.
Remarks: Information taken from reference works and the literature.

Acute dermal toxicity: LD50 (Rabbit, male and female): > 2,000 mg/kg.
Method: OECD Test Guideline 402 GLP: yes
Remarks: Information taken from reference works and the literature.

Skin corrosion/irritation: Based on available data, the classification criteria are not met.
Species: Rabbit. Exposure time: 4 h. Method: OECD Test Guideline 404.
Result: No skin irritation. GLP: yes
Remarks: Information taken from reference works and the literature.

Serious eye damage/eye irritation: Based on available data, the classification criteria are not met.
Species: Rabbit. Method: OECD Test Guideline 405.
Result: No eye irritation. GLP: yes.
Remarks: Information taken from reference works and the literature.

Skin sensitisation: Based on available data, the classification criteria are not met.

Respiratory sensitisation: Not classified due to lack of data.
Test Type: Maximisation Test. Species: Guinea pig. Method: OECD Test Guideline 406.
Result: Does not cause skin sensitisation. GLP: yes.
Remarks: Information taken from reference works and the literature.

Germ cell mutagenicity: Not classified due to lack of data.
Genotoxicity in vitro: Test Type: In vitro gene mutation study in mammalian cells.
Test system: Chinese hamster lung fibroblasts. Metabolic activation: with and without metabolic activation. Method: OECD Test Guideline 476
Result: negative GLP: yes.
Remarks: Information taken from reference works and the literature.
Genotoxicity in vivo: Species: Mouse (male and female). Cell type: Bone marrow Application Route: Oral. Method: Mutagenicity (micronucleus test) Result: negative. GLP: yes.
Remarks: Information taken from reference works and the literature.

Carcinogenicity: Not classified due to lack of data.

Reproductive toxicity: Not classified due to lack of data.

Effects on foetal development: Species: Rabbit. Application Route: Oral.
General Toxicity Maternal: NOAEL: >= 475 mg/kg bw/day
Developmental Toxicity: NOAEL: >= 475 mg/kg bw/day
Method: OECD Test Guideline 414. GLP: yes
Remarks: Information taken from reference works and the literature.

STOT - single exposure: Not classified due to lack of data.

STOT - repeated exposure: Not classified due to lack of data.

Aspiration toxicity: Not classified due to lack of data.

Further information: No further data available.

[cont…]

12. ECOLOGICAL INFORMATION

Component: Sodium Chlorate

Toxicity:

Acute aquatic toxicity:

Acute toxicity – fish: LC50 (Oncorhynchus mykiss (rainbow trout)): > 1,000 mg/l Exposure time: 96 h.
Test Type: flow-through test. GLP: yes
Remarks: Information taken from reference works and the literature.

Acute toxicity - daphnia and other aquatic invertebrates:
EC50 (Daphnia magna (Water flea)): > 1,000 mg/l. Exposure time: 48 h.
Test Type: flow-through test GLP: yes
Remarks: Information taken from reference works and the literature.

Acute toxicity - algae/aquatic plants: NOEC (algae): 10 mg/l Exposure time: 72 h

Acute toxicity – microorganisms: Remarks: Chlorate can disturb microorganisms in sediment; for example, those involved with the nitrogen cycle.
EC50 (activated sludge): > 1,000 mg/l Exposure time: 3 h. Method: OECD Test Guideline 209 GLP: yes.
Remarks: Information taken from reference works and the literature.

Chronic toxicity – fish: NOEC: >= 500 mg/l. Exposure time: 36 d. Species: Danio rerio (zebra fish)
Method: OECD Test Guideline 210 GLP: yes
Remarks: Information taken from reference works and the literature.

Chronic toxicity - daphnia and other aquatic invertebrates:
NOEC: >= 500 mg/l. Exposure time: 21 d. Species: Daphnia magna (Water flea)
Method: OECD Test Guideline 211. GLP: yes.
Remarks: Information taken from reference works and the literature.

Persistence and degradability:

Biodegradability: Test Type: aerobic. Result: Not readily biodegradable.
Test Type: anaerobic. Result: Readily biodegradable.

Biochemical Oxygen Demand (BOD): Remarks: No data available.

Bio accumulative potential: Remarks: Chlorate is converted into chlorite in plants.
Chlorite is accumulated in the cells until toxic concentrations are reached and the plant dies.
There is no evidence of accumulation in animals.

Mobility in soil: Remarks: Can be leached out from soil.
Distribution among environmental compartments.
Remarks: Stays dissolved in water.

Results of PBT and vPvB assessment:

Assessment: This substance is not considered to be a PBT (Persistent, Bioaccumulation, Toxic).
This substance is not considered to be vPvB (very Persistent nor very Bioaccumulating).

Other adverse effects: Endocrine disrupting potential: This substance/mixture does not contain components considered to have endocrine disrupting properties for environment according to UK REACH Article 57(f).

Additional ecological information: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

[cont…]

13. DISPOSAL CONSIDERATIONS

Waste treatment methods: The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Collect in clean containers made of plastic or stainless steel. Dispose of contents/container in accordance with local regulation.

Contaminated packaging: Empty remaining contents. Dispose of as unused product. Do not burn, or use a cutting torch on, the empty drum.

14. TRANSPORT INFORMATION

UN Number:
ADR/RID/ADN/IMDG/ICAO: 1495

Proper Shipping Name: SODIUM CHLORATE

Transport hazard class:
ADR/RID/ADN Class: 5.1
ADR/RID/ADN Class: Class 5.1: Oxidising substances
ADR/RID Classification Code: O2
ADR Label No.: 5.1
IMDG Class: 5.1
ICAO Class/Division: 5.1

Packing group:
ADR/RID/AND/IMDG/ICAO: II

Environmental:
Environmentally hazardous: No

Special precautions for users:
EmS: F-H, S-Q
ADR Transport Category: 2
Emergency Action Code: 1Y
Hazard Number (ADR): 50
Tunnel Restriction Code: (E)
IATA Packing instruction (LQ): Y544

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable for product as supplied.

[cont…]

15. REGULATORY INFORMATION

Chemical safety assessment: A chemical safety assessment has been carried out.

Note: The regulatory information given above only indicates the principal regulations specifically Applicable to the product described in the safety data sheet. The user's attention is drawn to the possible existence of additional provisions which complete these regulations. Refer to all applicable national, international and local regulations or provisions.

16. OTHER INFORMATION

Full text of H-Statements:

Hazard statements: H271: May cause fire or explosion; strong oxidiser.
H302: Harmful if swallowed.

Legal disclaimer: The information contained in this SDS does not constitute a risk assessment, and should not replace the user's own assessment of risks as required by other health and safety legislation. This advice is given by Nexchem Ltd who accept no legal liability for it except otherwise provided by law. The information contained herein is based on the present state of our knowledge and is intended to describe our products from the point of view of safety requirements. It should not therefore be construed as guaranteeing specific properties.