

Section 1: Identification of the substance/mixture and of the company/undertaking

Product identifier

Trade name of the substance	TRONOX® Sodium Chlorate
Identification Number	017-005-00-9
Registration number	-
Synonyms	None.
SDS number	B-5012
Product code	Sodium chlorate
Date of first issue	12-January-2011
Version number	01
Revision date	-
Supersedes date	-

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

Identified uses	Non-selective herbicide, raw material and oxidizing agent.
Uses advised against	None known.

Details of the supplier of the safety data sheet

Company name	Tronox Pigments (Holland) BV Prof. Gerbrandyweg 2 3197KK Rotterdam-Botlek The Netherlands ChemProdSteward@tronox.com
Telephone	+31 181 246600
Emergency	CHEMTREC 1-760-476-3961 (Access code: 333318)

Section 2: Hazards identification

Classification of the substance or mixture

The substance has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Directive 67/548/EEC or 1999/45/EC as amended

Classification O;R9, Xn;R22, N;R51-53

The full text for all R-phrases is displayed in section 16.

Classification according to Regulation (EC) No 1272/2008 as amended

Physical hazards Oxidizing solids	Category 1	May cause fire or explosion; strong oxidiser.
Health hazards Acute toxicity, oral	Category 4	Harmful if swallowed.
Environmental hazards Hazardous to the aquatic environment - long-term hazard	Category 2	Toxic to aquatic life with long lasting effects.

Hazard summary

Physical hazards	Explosive when mixed with combustible material.
Health hazards	Harmful if swallowed.
Environmental hazards	Toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.
Specific hazards	Thermally unstable at elevated temperature. Not itself combustible but assists fire in burning materials. Dusts of this product may cause irritation of the nose, throat, and respiratory tract. This material may produce methemoglobin which, in sufficient concentration, causes cyanosis, a blue-gray discoloration of the skin and lips caused by a reduced ability of the blood to carry oxygen. Ingesting large quantities can cause abdominal pain, nausea, and diarrhea, possibly with dark blood, cyanosis, possibly progressing to headache, difficulty in breathing, dizziness, seizures, or coma. Overexposure causes kidney and liver damage. Prolonged skin contact may cause dermatitis. May cause thyroid damage based on animal data.

Main symptoms

Ingesting large quantities can cause abdominal pain, nausea, and diarrhea, possibly with dark blood, cyanosis, possibly progressing to headache, difficulty in breathing, dizziness, seizures, or coma. Symptoms may include redness, oedema, drying, defatting and cracking of the skin.

Label elements**Label according to Regulation (EC) No. 1272/2008 as amended**

Contains: Sodium chlorate

Identification Number 017-005-00-9



Signal word Danger

Hazard statements May cause fire or explosion; strong oxidiser. Harmful if swallowed. Toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention Keep away from heat. Keep away from clothing and other combustible materials. Take any precaution to avoid mixing with combustibles. Wear protective gloves/protective clothing/eye protection/face protection. Wear fire/flammable resistant/retardant clothing. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Avoid release to the environment.

Response IF ON CLOTHING: rinse immediately contaminated clothing and skin with plenty of water before removing clothes. In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion. In case of fire: Use water, water spray or fog for extinction. IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth. Collect spillage.

Storage Store away from incompatible materials.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Supplemental label information Not applicable.

Other hazards None known.

Section 3: Composition/information on ingredients**Substance****General information**

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	INDEX No.	Notes
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Sodium chlorate	99.5	7775-09-9	-	017-005-00-9	
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Classification: **DSD:** O;R9, Xn;R22, N;R51-53

CLP: Ox. Sol. 1;H271, Acute Tox. 4;H302, Aquatic Chronic 2;H411

DSD: Directive 67/548/EEC.

CLP: Regulation No. 1272/2008.

Composition comments

The full text for all R- and H-phrases is displayed in section 16. All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

Section 4: First aid measures**General information**

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

Description of first aid measures**Inhalation**

Remove victim to fresh air. If not breathing, clear airway and start mouth-to-mouth artificial respiration or use a bag-mask respirator. Get immediate medical attention. If the victim is having trouble breathing, transport to medical care and if available, give supplemental oxygen.

Skin contact

Wash skin thoroughly with soap and water. Get medical attention if irritation develops or persists.

Eye contact

Dust in the eyes: Do not rub eyes. Remove contact lenses, if present and easy to do. Flush eyes immediately with large amounts of water. Get medical attention if irritation develops and persists.

Ingestion

Immediately give 3-4 glasses of water, and induce vomiting. Give fluids until vomitus is clear. Do not induce vomiting or give anything by mouth to an unconscious or convulsing person. Get immediate medical attention.

Most important symptoms and effects, both acute and delayed

Ingesting large quantities can cause abdominal pain, nausea, and diarrhea, possibly with dark blood, cyanosis, possibly progressing to headache, difficulty in breathing, dizziness, seizures, or coma. Symptoms may include redness, oedema, drying, defatting and cracking of the skin.

Indication of any immediate medical attention and special treatment needed Chemical of exposure is sodium chlorate, a strong oxidizer and methemoglobin former. Cyanosis may be noted within several hours following inhalation or ingestion.

Section 5: Firefighting measures

General fire hazards The product is not flammable. May cause fire or explosion; strong oxidiser.

Extinguishing media

Suitable extinguishing media Water. Water spray or fog.

Unsuitable extinguishing media Do not use CO2 or dry chemical. Do not use a fire blanket.

Special hazards arising from the substance or mixture Explosive when mixed with combustible material.

Advice for firefighters

Special protective equipment for firefighters Self-contained breathing apparatus and full protective clothing should be worn when fighting chemical fires. Selection of respiratory protection for fire fighting: follow the general fire precautions indicated in the workplace.

Special firefighting procedures Use water spray to cool unopened containers. Move container from fire area if it can be done without risk. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn. Firefighters should wear full protective clothing including self contained breathing apparatus.

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel Avoid inhalation of dust and contact with skin and eyes. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Application of sodium carbonate, borax, or calcium chloride as a diluent and absorbent will reduce the fire hazard. Use personal protection recommended in Section 8 of the SDS.

For emergency responders Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the SDS.

Environmental precautions Do not contaminate water. Prevent further leakage or spillage if safe to do so.

Methods and material for containment and cleaning up Avoid dust formation. Keep combustibles (wood, paper, oil etc) away from spilled material. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). For waste disposal, see Section 13.

Reference to other sections See Section 8 for personal protective equipment. For waste disposal, see Section 13.

Section 7: Handling and storage

Precautions for safe handling Do not ingest. Avoid inhalation of dust and contact with skin and eyes. Wash hands thoroughly after handling. Wear suitable protective clothing. Clean up spilled material immediately.

Conditions for safe storage, including any incompatibilities Store in a cool, dry place. Keep away from combustible material. Keep product away from organic solvents and other products containing easily oxidized functional groups. Keep out of reach of children. Keep away from food, drink and animal feeding stuffs.

Specific end use(s) Raw materials. Oxidizing agents.

Section 8: Exposure controls/personal protection

Control parameters

Occupational exposure limits No exposure limits noted for the ingredient(s).

Biological limit values No biological exposure limits noted for the ingredient(s).

Recommended monitoring procedures Follow standard monitoring procedures.

DNEL Not available.

PNEC Not available.

Exposure controls

Appropriate engineering controls Ventilate as needed to control airborne dust. Provide easy access to water supply or an emergency shower.

Individual protection measures, such as personal protective equipment

General information Personal protective equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment. Make sure to provide adequate control by applying the "COSHH Essentials" procedure.

Eye/face protection Wear dust-resistant safety goggles where there is danger of eye contact.

Skin protection

- Hand protection Wear protective gloves. Nitrile gloves are recommended. Suitable gloves can be recommended by the glove supplier.

- Other	Wear easily washable chemical resistant clothing. Chemical resistant boots. Do not wear leather shoes, gloves or belts.
Respiratory protection	In case of inadequate ventilation or risk of inhalation of dust, use suitable respiratory equipment with particle filter (type P2).
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
Hygiene measures	Wash clothing after use. Handle in accordance with good industrial hygiene and safety practices. If clothing becomes contaminated, keep wet until washed.
Environmental exposure controls	Environmental manager must be informed of all major releases.

Section 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Granular.
Physical state	Solid.
Form	Powder.
Colour	White.
Odour	Odourless.
Flammability (solid, gas)	Not available.
Oxidising properties	Not applicable.
Explosive properties	Not applicable.
Relative density	2.49
Solubility (water)	1010 g/l @ 20°C
Bulk density	100 lb/ft ³ approx.
Other data	
Molecular formula	Cl-Na-O ₃
Molecular weight	106.45 g/mol
Other information	No relevant additional information available.

Section 10: Stability and reactivity

Reactivity	Stable at normal conditions.
Chemical stability	Stable under normal temperature conditions and recommended use.
Possibility of hazardous reactions	Hazardous polymerisation does not occur.
Conditions to avoid	Avoid incompatible materials and intense heat.
Incompatible materials	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, sugar. Reacts with many organic materials to form shock-sensitive mixtures, causing explosion hazard.
Hazardous decomposition products	Chlorine. Chlorine dioxide. Sodium oxides.

Section 11: Toxicological information

General information	This material may produce methemoglobin which, in sufficient concentration, causes cyanosis, a blue-gray discoloration of the skin and lips caused by a reduced ability of the blood to carry oxygen.
Information on likely routes of exposure	
Ingestion	Harmful if swallowed.
Inhalation	Dusts of this product may cause irritation of the nose, throat, and respiratory tract.
Skin contact	Dust may irritate skin.
Eye contact	Dust may irritate the eyes. Eye may become red, tear, and become painful.
Symptoms	Ingesting large quantities can cause abdominal pain, nausea, and diarrhea, possibly with dark blood, cyanosis, possibly progressing to headache, difficulty in breathing, dizziness, seizures, or coma. Symptoms may include redness, oedema, drying, defatting and cracking of the skin.
Information on toxicological effects	
Acute toxicity	Harmful if swallowed. Ingesting large quantities can cause abdominal pain, nausea, and diarrhea, possibly with dark blood, cyanosis, possibly progressing to headache, difficulty in breathing, dizziness, seizures, or coma. Overexposure causes kidney and liver damage.

Product

Sodium chlorate (7775-09-9)

Test results

Acute Oral LD₅₀ Rat: 1200 mg/kg

Skin corrosion/irritation	Dust may irritate skin.
Serious eye damage/eye irritation	Dust may irritate the eyes.
Respiratory sensitisation	None known.
Skin sensitisation	Not a skin sensitiser.
Germ cell mutagenicity	Knowledge about mutagenicity is incomplete.
Carcinogenicity	Not classified.
Reproductive toxicity	Knowledge about reproductive effects is incomplete.
Specific target organ toxicity - single exposure	None known.
Specific target organ toxicity - repeated exposure	None known.
Aspiration hazard	None known.
Mixture versus substance information	Not available.
Other information	No other specific acute or chronic health impact noted.

Section 12: Ecological information

Toxicity	No toxicity data noted for the ingredient(s).
Persistence and degradability	The product is degraded completely by abiotic reduction.
Bioaccumulative potential	The product is not expected to bioaccumulate.
Mobility	The product is water soluble and may spread in water systems.
Environmental fate - Partition coefficient	Not available.
Mobility in soil	Not available.
Results of PBT and vPvB assessment	Not available.
Other adverse effects	Toxic to aquatic life with long lasting effects.

Section 13: Disposal considerations

Waste treatment methods	
Residual waste	Dispose of in accordance with local regulations.
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied.
EU waste code	16 04 03* Waste codes should be assigned by the user based on the application for which the product was used.
Disposal methods/information	Dispose of this material and its container to hazardous or special waste collection point. Do not allow this material to drain into sewers/water supplies.

Section 14: Transport information

ADR

UN number	UN1495
UN proper shipping name	SODIUM CHLORATE
Transport hazard class(es)	5.1
Subsidiary class(es)	-
Packing group	II
Environmental hazards	Yes
Labels required	5.1
Special precautions for user	Not available.

RID

UN number	UN1495
UN proper shipping name	SODIUM CHLORATE
Transport hazard class(es)	5.1
Subsidiary class(es)	-
Packing group	II
Environmental hazards	Yes
Labels required	5.1
Special precautions for user	Not available.

ADN
UN number UN1495
UN proper shipping name Sodium Chlorate
Transport hazard class(es) 5.1
Subsidiary class(es) -
Packing group II
Environmental hazards Yes
Labels required 5.1
Special precautions for user Not available.

IATA
UN number UN1495
UN proper shipping name Sodium chlorate
Transport hazard class(es) 5.1
Subsidiary class(es) -
Packing group II
Environmental hazards Yes
Labels required 5.1
Special precautions for user Not available.

IMDG
UN number UN1495
UN proper shipping name SODIUM CHLORATE
Transport hazard class(es) 5.1
Subsidiary class(es) -
Packing group II
Marine pollutant Yes
Labels required 5.1
EmS No. F-H, S-Q
Special precautions for user Not available.
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code No information available.

Section 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

EU Regulations

Regulation (EC) No. 2037/2000 on substances that deplete the ozone layer, Annex I

Not listed.

Regulation (EC) No. 2037/2000 on substances that deplete the ozone layer, Annex II

Not listed.

Regulation (EC) No. 850/2004 on persistent organic pollutants, Annex I

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 1

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 2

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 3

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex V

Not listed.

Directive 96/61/EC concerning integrated pollution prevention and control (IPPC): Article 15, European Pollution Emission Registry (EPER)

Sodium chlorate (CAS 7775-09-9)

Regulation (EC) No. 1907/2006, REACH Article 59(1). Candidate List

Not listed.

Other regulations The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended and respective national laws implementing EC directives. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006.

National regulations Follow national regulation for work with chemical agents.

Chemical safety assessment No Chemical Safety Assessment has been carried out.

Section 16: Other information

List of abbreviations

DNEL: Derived No-Effect Level.
PNEC: Predicted No-Effect Concentration.
PBT: Persistent, bioaccumulative and toxic.
vPvB: Very Persistent and very Bioaccumulative.

References

HSDB® - Hazardous Substances Data Bank

Information on evaluation method leading to the classification of mixture

Not available.

Full text of any statements or R-phrases and H-phrases under Sections 2 to 15

R9 Explosive when mixed with combustible material.
R22 Harmful if swallowed.
R51 Toxic to aquatic organisms.
R53 May cause long-term adverse effects in the aquatic environment.
H271 - May cause fire or explosion; strong oxidiser.
H302 - Harmful if swallowed.
H411 - Toxic to aquatic life with long lasting effects.

Training information

Follow training instructions when handling this material.

Disclaimer

The information in the sheet was written based on the best knowledge and experience currently available.

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