1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Potassium chlorate

Product Number: 255572

Brand: Sigma-Aldrich

Supplier: Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO  63103 USA

Telephone: +1 800-325-5832
Fax: +1 800-325-5052

Emergency Phone #: (314) 776-6555

Preparation Information: Sigma-Aldrich Corporation
Product Safety - Americas Region
1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Oxidizer, Target Organ Effect, Toxic by inhalation., Harmful by ingestion.

Target Organs
Blood, Liver, Kidney

GHS Classification
Oxidizing solids (Category 1)
Acute toxicity, Oral (Category 4)
Acute toxicity, Inhalation (Category 4)
Acute toxicity, Dermal (Category 5)
Skin irritation (Category 3)
Eye irritation (Category 2B)
Acute aquatic toxicity (Category 2)

GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H271 May cause fire or explosion; strong oxidiser.
H302 + H332 Harmful if swallowed or if inhaled
H313 May be harmful in contact with skin.
H316 Causes mild skin irritation.
H320 Causes eye irritation.
H401 Toxic to aquatic life.

Precautionary statement(s)
P220 Keep/Store away from clothing/ combustible materials.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
HMIS Classification

- Health hazard: 2
- Chronic Health Hazard: *
- Flammability: 0
- Physical hazards: 2

NFPA Rating

- Health hazard: 2
- Fire: 0
- Reactivity Hazard: 2
- Special hazard: OX

Potential Health Effects

- **Inhalation**: Toxic if inhaled. May cause respiratory tract irritation.
- **Skin**: Harmful if absorbed through skin. May cause skin irritation.
- **Eyes**: May cause eye irritation.
- **Ingestion**: Harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

**Formula**: ClKO₃

**Molecular Weight**: 122.55 g/mol

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
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<tbody>
<tr>
<td>Potassium chlorate</td>
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<tr>
<td>CAS-No.</td>
<td>3811-04-9</td>
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<td>EC-No.</td>
<td>223-289-7</td>
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<td>Index-No.</td>
<td>017-004-00-3</td>
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4. FIRST AID MEASURES

**General advice**
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

**If inhaled**
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact**
Wash off with soap and plenty of water. Consult a physician.

**In case of eye contact**
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**If swallowed**
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIREFIGHTING MEASURES

**Conditions of flammability**
Not flammable or combustible.

**Suitable extinguishing media**
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Special protective equipment for firefighters**
Wear self contained breathing apparatus for fire fighting if necessary.

**Hazardous combustion products**
Hazardous decomposition products formed under fire conditions. - Hydrogen chloride gas, Potassium oxides

**Further information**
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES
**Personal precautions**
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

**Environmental precautions**
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

**Methods and materials for containment and cleaning up**
Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal.

7. **HANDLING AND STORAGE**

**Precautions for safe handling**
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Keep away from sources of ignition - No smoking.

**Conditions for safe storage**
Keep container tightly closed in a dry and well-ventilated place.

8. **EXPOSURE CONTROLS/PERSONAL PROTECTION**

Contains no substances with occupational exposure limit values.

**Personal protective equipment**

**Respiratory protection**
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Hand protection**
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

**Eye protection**
Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin and body protection**
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Hygiene measures**
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance**
- Form: crystalline
- Colour: white

**Safety data**
- pH: 5.0 - 6.5 at 61.3 g/l at 25 °C (77 °F)
- Melting point/freezing point: Melting point/range: 356 °C (673 °F) - lit.
- Boiling point: no data available
- Flash point: not applicable
- Ignition temperature: no data available
- Auto-ignition temperature: no data available
- Lower explosion limit: no data available
- Upper explosion limit: no data available
- Vapour pressure: no data available
- Density: 2.320 g/cm³
- Water solubility: ca.61.3 g/l at 20 °C (68 °F)
- Partition coefficient: n-octanol/water: no data available
- Relative vapour density: no data available
- Odour: no data available
- Odour Threshold: no data available
- Evaporation rate: no data available

10. STABILITY AND REACTIVITY

**Chemical stability**
Stable under recommended storage conditions.

**Possibility of hazardous reactions**
no data available

**Conditions to avoid**
no data available

**Materials to avoid**
Strong reducing agents, Powdered metals, Strong acids, Alcohols, Organic materials

**Hazardous decomposition products**
Hazardous decomposition products formed under fire conditions. - Hydrogen chloride gas, Potassium oxides
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

**Acute toxicity**

**Oral LD₅₀**
LD₅₀ Oral - rat - 1,870 mg/kg

**Inhalation LC₅₀**
Dermal LD50
LD50 Dermal - rabbit - > 2,000 mg/kg

Other information on acute toxicity
no data available

Skin corrosion/irritation
Skin - rabbit - Mild skin irritation

Serious eye damage/eye irritation
Eyes - rabbit - Mild eye irritation

Respiratory or skin sensitisation
no data available

Germ cell mutagenicity
no data available

Carcinogenicity
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
no data available

Teratogenicity
no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

Aspiration hazard
no data available

Potential health effects

Inhalation Toxic if inhaled. May cause respiratory tract irritation.
Ingestion Harmful if swallowed.
Skin Harmful if absorbed through skin. May cause skin irritation.
Eyes May cause eye irritation.

Signs and Symptoms of Exposure
anemia, Absorption into the body leads to the formation of methemoglobin which in sufficient concentration causes cyanosis. Onset may be delayed 2 to 4 hours or longer., Nausea, Vomiting, Diarrhoea, Hemorrhage., Liver, Convulsions

Synergistic effects
no data available

Additional Information
RTECS: FO0350000

12. ECOLOGICAL INFORMATION
Toxicity

Toxicity to fish
LC50 - Oncorhynchus mykiss (rainbow trout) - 1.750 mg/l - 96.0 h

Toxicity to daphnia and other aquatic invertebrates
EC50 - Daphnia magna (Water flea) - 1,093 mg/l - 24 h

Persistence and degradability
no data available

Bioaccumulative potential
no data available

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 1485  Class: 5.1  Packing group: II
Proper shipping name: Potassium chlorate
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN number: 1485  Class: 5.1  Packing group: II  EMS-No: F-H, S-Q
Proper shipping name: POTASSIUM CHLORATE
Marine pollutant: No

IATA
UN number: 1485  Class: 5.1  Packing group: II
Proper shipping name: Potassium chlorate

15. REGULATORY INFORMATION

OSHA Hazards
Oxidizer, Target Organ Effect, Toxic by inhalation., Harmful by ingestion.

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Reactivity Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components
Potassium chlorate

Pennsylvania Right To Know Components

Potassium chlorate

New Jersey Right To Know Components

Potassium chlorate

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Further information
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