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Chemistry for the Imagination

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Product: **Potassium Chlorate**

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Material Identity
Product Name: Potassium Chlorate
Product Code: CH-3811049_A and/or CH-3811049_B
Chemical Formula: $KClO_3$
General or Generic ID: Oxymuriate of potash; Potassium oxymuriate; Anforstan; Berthollet salt; Chlorate of potash; Salt of tartar; Potcrate.

Company
ArtChemicals.com
2250 Davis Street
San Leandro, CA 94577-2204
510-639-4670

Emergency Telephone Number:
1-800-451-8346

2. COMPOSITION / INFORMATION ON INGREDIENTS

CAS No.	Chemical Identity	Common Name	%
3811-04-9	N/A	Potassium chlorate	100

3. HAZARDS IDENTIFICATION

Potential Health Effects

Eye:
Hazardous in case of eye contact (irritant). Symptoms include stinging, tearing, redness and impairment of vision. The degree of injury will depend on the amount of material that gets into the eye and the speed and thoroughness of the first aid treatment.

Skin:
Hazardous in case of skin contact (irritant). Symptoms may include redness, burning of skin, or, occasionally, blistering. The degree of injury will depend on the amount of material that gets on the skin and the speed and thoroughness of the first aid treatment.

Ingestion:
Hazardous in case of ingestion. Inhalation of dust will produce irritation to gastro-intestinal tract.

Inhalation:
Hazardous in case of inhalation (lung irritant). Breathing in any amounts may cause respiratory irritation, burning, sneezing and coughing.

Symptoms of Exposure:
Not available.

Development Information:
Not available.
The substance may be toxic to blood, kidneys, lungs, liver, central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage.

Cancer Information:
Not available.

Primary Route(s) of Entry:
Inhalation, skin absorption, skin contact, and eye contact.

4. FIRST AID MEASURES

Inhalation:
If affected, promptly remove individual to fresh air. If not breathing, give artificial respiration. Get medical attention.

Ingestion:
Do NOT induce vomiting, unless directed by medical personnel. Seek medical attention. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Do not leave individual unattended. Loosen tight clothing such as collar, tie, belt or waistband.

Eyes:
Remove contact lenses if worn. Spread eyelids with fingers and flush eye for minimum of 15 minutes with water; keep rotating the eyes to ensure complete flushing. Do not use an eye ointment. Seek medical attention.

Skin:
Immediately remove contaminated clothing and thoroughly flush skin with plenty of water (15 minutes). Wash thoroughly with soap and water. Seek medical attention immediately. Launder clothing before reuse.

Note to Physicians:
Not available.

5. FIRE FIGHTING MEASURES

Flash Point: Non-flammable. Not available.
Explosive Limit: Not applicable.
Auto-ignition Temperature: Not available.
Hazardous Products of Combustion: Some metallic oxides.
Extinguishing Media: Oxidizing material. Do not use water jet. Use flooding quantities of water. Avoid contact with organic materials.

SPECIAL FIRE-FIGHTING PROCEDURES: Releases ClO2 in presence of heat.
May ignite combustibles (wood, paper, oil, and clothing). Cloth, leather, wood, paper are flammable when impregnated with chlorates. It will accelerate burning when involved in a fire.
Mixtures with ammonium salts, powdered metals, phosphorus, silicon, sulfur, or sulfides are readily ignited. May form flammable or explosive mixture with organic matter combustible materials (sulfur, sulfides, sugar, powdered metals, ammonium compounds, etc.) Violent reaction or ignition with ... ammonium salts, ammonium sulfate, Sb2S3, arsenic, barium hypophosphite, BaS, calcium hypophosphite, CaS, charcoal, Cu3P2, fabrices, ... lactose, (Mg + CuSO4 (anhydrous) + NH4NO3 + water), MnO2, dinickel trioxide, dibasic organic acids, organic matter, NaNH2, sugar + sulfuric acid, sucrose, SO2, sulfuric acid, thiocyanates, thorium dicarbide, sodium amide, KOH, metal hypophosphites. Risks of explosion of the product in presence of mechanical impact: Not available. Explosive in presence of open flames and sparks, of heat. Slightly explosive in presence of reducing materials, of combustible materials, of organic materials, of metals, of acids. May form flammable or explosive mixture with organic matter, combustible and other oxidizable materials (sulfur, sulfides, sulfites, phosphorus, hypophosphite, sugar, powdered metals, ammonium compounds, etc.) May explode from heat or contamination. Containers may explode when heated. May react explosively with hydrocarbons (fuels). Explodes with sulfuric acid. Forms sensitive explosive mixtures with agricultural materials, ... aluminum + antimony trisulfide powders, arsenic trisulfide, carbon, charcoal + potassium nitrate + sulfur, charcoal + sulfur, cyanides, cyanoguanidine, hydrocarbons, manganese dioxide + traces of organic matter, manganese dioxide + potassium hydroxide, metal + wood, metal phosphides, ... metal phosphinates, finely divided metals, metal phosphides, metal

thiocyanates, nitric acid + organic materials, powdered nonmetals, reducing agents, sugars, sulfur, sulfur + metal derivatives, sulfuric acid, sodium amide, tannic acid.

NFPA CODES: Health = 2 Flammability = 0 Reactivity = 0

6. PRECAUTIONS FOR SAFE HANDLING AND USE

Steps To Be Taken In Case Material Is Released Or Spilled:

Small Spill:
Use appropriate tools to put the spilled solid in a convenient waste disposal container. Dispose of according to local and regional authority requirements.

Large Spill:
Oxidizing material.
Stop leak if without risk. Avoid contact with a combustible material (wood, paper, oil, clothing...). Keep substances damp using water spray. Do not touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Call for assistance on disposal.

7. PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Keep container tightly closed. Keep container in a cool, well-ventilated area. Separate from acids, alkalies, reducing agents and combustibles. See NFPA 43A, Code for the Storage of Liquid and Solid Oxidizers. Keep away from heat. Keep away from sources of ignition. Keep away from combustible material. Ground all equipment containing material. Do not ingest. Do not breathe dust. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as reducing agents, combustible materials, organic materials, metals, acids.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Respiratory Protection:

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Be sure to use an approved/certified respirator or equivalent.

Skin Protection:
Wear resistant gloves. To prevent repeated or prolonged skin contact, wear impervious clothing and boots or lab coat.

Eye Protection:
Chemical splash goggles in compliance with OSHA regulations are advised. Face shield. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Other Protective Clothing or Equipment:
Provide sufficient mechanical ventilation to maintain exposure below level of overexposure. Boots. Full suit. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling product.

Consult local authorities for acceptable exposure limits.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: Solid. (Odor not available).
Molecular Weight: 122.55 g/mole
pH: Not available.
Boiling Point: Decomposition temperature: 400°C (752°F)
Melting Point: 368°C (694.4°F).
Specific Gravity: 2.32 (Water=1)
Vapor Pressure: Not applicable.
Evaporation Rate: Not available.
Solubility in Water: Partially soluble in cold water. (7g/100ml @ 25°C).

10. SATBILITY AND REACTIVITY

Incompatibility: Reactive with oxidizing agents and acids.
Stability: Stable.
Hazardous Decomposition: N/A

Hazardous Polymerization: Will not occur.

SPECIAL REMARKS ON REACTIVITY: Above 368 deg. C, it decomposes into perchlorate and oxygen Violent reaction or ignition with ... ammonium salts, ammonium sulfate, Sb2S3, arsenic, barium hypophosphite, BaS, calcium hypophosphite, CaS, charcoal, Cu3P2, fabrices, ... lactose, (Mg + CuSO4 (anhydrous) + NH4NO3 + water), MnO2, dinickel trioxide, dibasic organic acids, organic matter, NaNH2, sugar + sulfuric acid, sucrose, SO2, sulfuric acid, thiocyanates, thorium dicarbide, sodium amide, KOH, metal hypophosphites.

11. TOXICOLOGICAL INFORMATION

LD50: 1870 mg/kg [Rat].

Acute Potential Health Effects:
Skin: Causes skin irritation. It may severely irritate the skin.
Eyes: Causes eye irritation. It may severely irritate the eyes and may cause conjunctivitis and corneal opacification.
Inhalation: It can irritate the nose and throat and cause sore throat and coughing and shortness of breath. It may cause methemoglobinemia (formation of methemoglobin in the blood) producing symptoms such as dizziness, faintness, headache, shortness of breath, cyanosis (bluish discoloration of skin due to deficient oxygenation of blood), and other symptoms similar to that of methemoglobinemia resulting from ingestion.
Ingestion: May be harmful if swallowed. It can cause gastritis with diarrhea, gastric pain, nausea vomiting. It is a powerful inducer of Methemoglobinemia. After a latent period with pallor as the only symptom, cyanosis due to methemoglobin formation appears within several hours. The fatal course of poisoning by Potassium chlorate is due to its ability to cause rapid oxidative destruction (hemolysis) of the red blood cells, accompanied by the formation of methemoglobin outside the cells. The rate of methemoglobin formation is fairly slow, and dangerous levels can occur insidiously and without warning. Other symptoms may include staggering, dizziness, faintness, weakness, headache, hypotension, damage to heart muscle, cardiovascular collapse, shortness of breath due to hypoxia or dyspnea, hemolytic anemia, leukocytosis, thrombocytopenia, hyperkalemia secondary to hemolysis and kidney failure, dark-colored/bloody urine, anuria, kidney failure, coma, and convulsions.
Chronic Potential Health Effects:
Skin: Prolonged or repeated skin contact can cause dermatitis, and skin lesions.
Inhalation: Prolonged or repeated inhalation can irritate the lungs and cause bronchitis to develop with cough, phlegm and/or shortness of breath.
Ingestion: Prolonged or repeated ingestion may also affect the blood (anemia, changes in white blood cell count); behavior/central nervous system (dizziness, faintness and other CNS

symptoms similar to that of acute ingestion).It may also affect the kidneys, and liver and cause loss of appetite and weight loss.

12. ECOLOGICAL INFORMATION

Not available.
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise. The product itself and its products of degradation are less toxic.

13. DISPOSAL CONSIDERATION

Waste Disposal Method:

Dispose of in accordance with all applicable local, state and federal regulations.

14. DOT SHIPPING NAME & IDENTIFICATION:

Potassium chlorate. Class 5.1 (Oxidizing material). UN: 1485, PG: II

15. OTHER INFORMATION

The information accumulated herein is believed to be accurate but is not warranted to be, whether originating with the company or not. Recipients are advised to confirm in advance of need that information is current, applicable, and suitable to their circumstances.