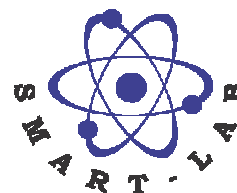


## MATERIAL SAFETY DATA SHEET

### POTASSIUM CHROMATE



Code No. : A-2034  
Specification : AR  
Formula :  $K_2Cr_2O_4$

Version : 001 / IX / 2011  
Print Date : 08 / 09 / 2011  
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### Manufacturer Information :

**Company Name** : **PT. SMART-LAB INDONESIA**  
Taman Tekno Bangunan Multiguna Blok M / 36 BSD Sektor XI  
Serpong, Tangerang – Indonesia 15314

**Telephone** : (62-21) 7588 0205 ( Hunting )  
**Fax** : (62-21) 7588 0198  
**E mail** : [smart-lab@cbn.net.id](mailto:smart-lab@cbn.net.id)  
**Web site** : [www.smartlab.co.id](http://www.smartlab.co.id)

#### 1) HAZARD IDENTIFICATION

##### **Potential Acute Health Effects:**

Very hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, . Hazardous in case of skin contact (sensitizer), of inhalation (lung irritant). Slightly hazardous in case of skin contact (corrosive, permeator), of eye contact (corrosive). Prolonged exposure may result in skin burns and ulcerations. Over-exposure by inhalation may cause respiratory irritation. Severe over-exposure can result in death. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

##### **Potential Chronic Health Effects:**

CARCINOGENIC EFFECTS: Classified A1 (Confirmed for human.) by ACGIH, 1 (Proven for human.) by IARC. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to kidneys, lungs, liver, upper respiratory tract, skin, eyes. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

#### 2) FIRST AID

**Eye Contact:** Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.

**Skin Contact:** In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

**Serious Skin Contact:** Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

**Inhalation:** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**Serious Inhalation:** Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

**Ingestion:** If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

**Serious Ingestion:** Not available.

#### 3 FIRE FIGHTING MEASURES

**Flammability of the Product:** Non-flammable.

**Auto-Ignition Temperature:** Not applicable.

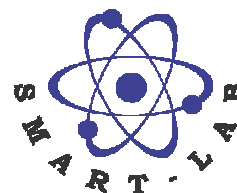
**Flash Points:** Not applicable.

**Flammable Limits:** Not applicable.

**Products of Combustion:** Not available.

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**Fire Hazards in Presence of Various Substances:** combustible materia

**Explosion Hazards in Presence of Various Substances:**

Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

**Fire Fighting Media and Instructions:** Not applicable.

**Special Remarks on Fire Hazards:**

Non combustible. May increase intensity of fire if in contact with combustible materials When heated to decomposition it emits toxic fumes.

**Special Remarks on Explosion Hazards:** Not available.

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**4) RELEASE MEASURES**  
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**Small Spill:** Use appropriate tools to put the spilled solid in a convenient waste disposal container.

**Large Spill:**

Oxidizing material. Poisonous solid. Stop leak if without risk. Do not get water inside container. Avoid contact with a combustible material (wood, paper, oil, clothing...). Keep substance damp using water spray. Do not touch spilled material.  
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Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

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**5) HANDLING AND STORAGE**  
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**Precautions:**

Keep away from heat. Keep away from sources of ignition. Keep away from combustible material.. Do not ingest. Do not breathe dust. Never add water to this product. 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 combustible materials, organic materials.

**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.

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**6) EXPOSURE CONTROLS/PERSONAL PROTECTION**  
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**Engineering Controls:** Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

**Personal Protection:** Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

**Personal Protection in Case of a Large Spill:** Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

**Exposure Limits:** TWA: 0.05 (mg(Cr)/m ) from ACGIH (TLV) [United States] Consult local authorities for acceptable exposure limits.

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**7) PHYSICAL AND CHEMICAL PROPERTIES**  
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**Physical state and appearance:** Solid. (Granular solid. Crystals solid.)

**Odor:** Odorless.

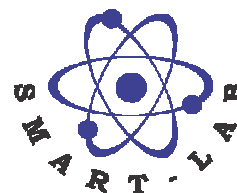
**Taste:** Not available.

**Molecular Weight:** 194.19 g/mole

**Color:** Yellow.

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**pH (1% soln/water):** Not available.  
**Boiling Point:** Not available.  
**Melting Point:** 975°C (1787°F)  
**Critical Temperature:** Not available.  
**Specific Gravity:** 2.73 (Water = 1)  
**Vapor Pressure:** Not applicable.  
**Vapor Density:** Not available.  
**Volatility:** Not available. p. 4  
**Odor Threshold:** Not available.  
**Water/Oil Dist. Coeff.:** Not available.  
**Ionicity (in Water):** Not available.  
**Dispersion Properties:** See solubility in water.  
**Solubility:** Easily soluble in cold water, hot water.

#### 8) STABILITY AND REACTIVITY

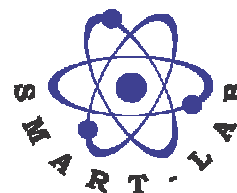
**Stability:** The product is stable.  
**Instability Temperature:** Not available.  
**Conditions of Instability:** Incompatible materials  
**Incompatibility with various substances:** Reactive with combustible materials, organic materials.  
**Corrosivity:** Non-corrosive in presence of glass.  
**Special Remarks on Reactivity:**  
Hydrazine, combustible, organic, or other readily oxidizable materials: wood, paper, sulfur, aluminum, plastics, chromic acid, chromates.  
**Special Remarks on Corrosivity:** Not available.  
**Polymerization:** Will not occur.

#### 9) TOXICOLOGICAL

**Routes of Entry:** Absorbed through skin. Inhalation. Ingestion.  
**Toxicity to Animals:** Acute oral toxicity (LD50): 180 mg/kg [Mouse].  
**Chronic Effects on Humans:** CARCINOGENIC EFFECTS: Classified A1 (Confirmed for human.) by ACGIH, 1 (Proven for human.) by IARC. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast. May cause damage to the following organs: kidneys, lungs, liver, upper respiratory tract, skin, eyes.  
**Other Toxic Effects on Humans:** Very hazardous in case of skin contact (irritant), of ingestion, . Hazardous in case of skin contact (sensitizer), of inhalation (lung irritant). Slightly hazardous in case of skin contact (corrosive, permeator), of eye contact (corrosive).  
**Special Remarks on Toxicity to Animals:** Not available.  
**Special Remarks on Chronic Effects on Humans:** May cause adverse reproductive effects. May affect genetic material (mutagenic). May cause cancer  
**Special Remarks on other Toxic Effects on Humans:** Acute Potential Health Effects: Skin: Causes severe irritation, and possible skin burns. Contact with broken skin may cause ulcers (chrome sores) and absorption, which may cause systemic poisoning affecting behavior/central nervous system, kidney and liver. Absorption may also affect the gastrointestinal tract and cause nausea and vomiting. Eyes: Causes severe irritation, blurred vision, redness, pain and possible eye burns. May cause conjunctivitis, ulceration, and corneal injury/abnormalities or blindness. Inhalation: Corrosive. It is destructive to the tissues of the mucous membrane and the upper respiratory tract.  
It may cause severe irritation of the upper respiratory tract, mucous membranes, with pain, burns, and inflammation. It may cause burns to the respiratory , chemical bronchitis with coughing and difficulty in breathing, ulceration and perforation of the nasal septum. Symptoms may include sore throat, coughing, shortness of breath, labored breathing. It may cause pulmonary sensitization or allergic asthma. Higher exposures may cause pulmonary edemas. Ingestion: It can cause severe burns of the mouth, throat and stomach leading to death. Symptoms may include sore throat, nausea, vomiting, diarrhea, violent gastroenteritis, peripheral vascular collapse, dizziness, intense thirst, muscle cramps, shock, abnormal bleeding, fever, liver damage, and kidney damage (acute renal failure, toxic nephritis, albuminuria, necrosis in the kidney), violent gastrointestinal p. 5 distress, possible methemoglobin formation, coma, and circulatory collapse. Chronic Potential Health Effects: Although

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rare, system effects on the blood, liver, and kidneys from industrial exposure have been reported. Principal toxic effects of chromates from occupational point of view are exerted on skin, nasal mucosa, eye, larynx, and lungs. Signs and symptoms of chronic eye and skin contact may include lacrimation, conjunctivitis, eczematous contact dermatitis, penetrating ulcers that don't heal. Signs and symptoms of chronic inhalation may include perforation of the nasal septum, congestion, chronic rhinitis, polyps of the upper respiratory tract, inflammation of the lungs, emphysema, tracheitis, bronchitis, pharyngitis, adhesions of the diaphragm, inflammation of the larynx, respiratory irritations. Signs and symptoms of chronic ingestion are loss of appetite, nausea, vomiting, inflammation of the liver or even acute hepatitis with jaundice, leukocytosis, leukopenia, monocytosis, and eosinophilia.

#### 10) ECOLOGICAL

**Ecotoxicity:** Not available.

**BOD5 and COD:** Not available.

**Products of Biodegradation:**

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

**Toxicity of the Products of Biodegradation:** The products of degradation are less toxic than the product itself.

**Special Remarks on the Products of Biodegradation:** Not available

#### 11) DISPOSAL

SMALL QUANTITIES MAY BE FLUSHED TO SEWER WITH LARGE AMOUNT OF WATER. DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

#### 12) TRANSPORTATION

**Waste Disposal:** Waste must be disposed of in accordance with federal, state and local environmental control regulations

#### 13) REGULATORY

**Federal and State Regulations:**

California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: Potassium chromate California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: Potassium chromate Connecticut hazardous material survey.: Potassium chromate Illinois chemical safety act: Potassium chromate New York release reporting list: Potassium chromate Pennsylvania RTK: Potassium chromate Massachusetts RTK: Potassium chromate Massachusetts spill list: Potassium chromate New Jersey: Potassium chromate New Jersey spill list: Potassium chromate Louisiana spill reporting: Potassium chromate California Director's List of Hazardous Substances : Potassium chromate TSCA 8(b) inventory: Potassium chromate TSCA 6 final risk management: Potassium chromate TSCA 8(a) IUR: Potassium chromate TSCA 12(b) one time export: Potassium chromate SARA 313 toxic chemical notification and release reporting: Potassium chromate CERCLA: Hazardous substances.: Potassium chromate: 10 lbs. (4.536 kg)

**Other Regulations:** OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

**Other Classifications:**

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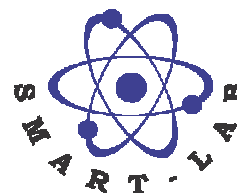
**WHMIS (Canada):**

CLASS C: Oxidizing material. CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

**DSDL (EEC):**

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R36/37/38- Irritating to eyes, respiratory system and skin. R43- May cause sensitization by skin contact. R46- May cause heritable genetic damage. R49- May cause cancer by inhalation. R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). S53- Avoid exposure - obtain special instructions before use. S60- This material and its container must be disposed of as hazardous waste. S61- Avoid release to the environment. Refer to special instructions/Safety data sheets.

**Protective Equipment:**

Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator

when ventilation is inadequate. Splash goggle

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**14) OTHER**  
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**References:** Not available.

**Other Special Considerations:** Not available.