SAFETY DATA SHEET

1. Identification

Product identifier: POTASSIUM CHLORATE

Other means of identification
Product No.: 3024, 6834

Recommended use and restriction on use
Recommended use: Not available.
Restrictions on use: Not known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer
Company Name: Avantor Performance Materials, Inc.
Address: 3477 Corporate Parkway, Suite 200
Center Valley, PA 18034
Telephone: Customer Service: 855-282-6867
Fax:
Contact Person: Environmental Health & Safety
e-mail: info@avantormaterials.com

Emergency telephone number:
24 Hour Emergency: 908-859-2151

Chemtrec: 800-424-9300

2. Hazard(s) identification

Hazard classification

Physical hazards
Oxidizing solids Category 1

Health hazards
Acute toxicity (Oral) Category 4
Acute toxicity (Inhalation - dust and mist) Category 4

Environmental hazards
Chronic hazards to the aquatic environment Category 2

Label elements
Hazard symbol:

Signal word: Danger

Hazard statement: May cause fire or explosion; strong oxidizer.
Harmful if swallowed.
Harmful if inhaled.
Toxic to aquatic life with long lasting effects.
Precautionary statement

Prevention: Keep away from heat. - No smoking. Keep/Store away from clothing/combustible materials. Take any precaution to avoid mixing with combustibles. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Avoid breathing dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. Wear fire/flame resistant/retardant clothing. Avoid release to the environment.

Response: In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion. IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell. IF ON CLOTHING: Rinse immediately contaminated clothing and skin with plenty of water before removing clothes. Collect spillage.

Disposal: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in GHS classification: None.

3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Chemical identity</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>Content in percent (%)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>POTASSIUM CHLORATE</td>
<td>3811-04-9</td>
<td>90 - 100%</td>
<td>* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.</td>
</tr>
</tbody>
</table>

4. First-aid measures

General information: Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.

Ingestion: Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell.

Inhalation: Move to fresh air. Call a POISON CENTER or doctor/physician if you feel unwell.

Skin contact: Wash skin thoroughly with soap and water. Call a POISON CENTER or doctor/physician if you feel unwell. Wash contaminated clothing before reuse.

Eye contact: Flush thoroughly with water. If irritation occurs, get medical assistance.

Most important symptoms/effects, acute and delayed

Symptoms: Harmful if swallowed. Harmful if inhaled.

Indication of immediate medical attention and special treatment needed
Treatment: Treat symptomatically. Symptoms may be delayed.

5. Fire-fighting measures

General fire hazards: Strong oxidizer - contact with other material may cause fire.

Suitable (and unsuitable) extinguishing media

**Suitable extinguishing media:** Water or water spray in early stages of fire. Foam.

**Unsuitable extinguishing media:** Dry chemical. Straight Streams of Water

Specific hazards arising from the chemical: Explosion risk in case of fire.

Special protective equipment and precautions for firefighters

**Special fire fighting procedures:** Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool. Cool containers exposed to flames with water until well after the fire is out. In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

**Special protective equipment for fire-fighters:** Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures:** Keep unauthorized personnel away. Keep upwind. Use personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. See Section 8 of the MSDS for Personal Protective Equipment.

**Methods and material for containment and cleaning up:** Remove sources of ignition. Sweep up and place in a clearly labeled container for chemical waste. Clean surface thoroughly to remove residual contamination. Dike far ahead of larger spill for later recovery and disposal. Use only non-sparking tools.

**Notification Procedures:** Dike for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Stop the flow of material, if this is without risk. Inform authorities if large amounts are involved.

**Environmental precautions:** Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

**Precautions for safe handling:** Wear protective gloves/protective clothing/eye protection/face protection. Do not get in eyes, on skin, on clothing. Do not taste or swallow. Do not breathe dust/fume/gas/mist/vapors/spray. Wash hands thoroughly after handling. Use caution when adding this material to water. See Section 8 of the MSDS for Personal Protective Equipment.
Conditions for safe storage, including any incompatibilities:
Keep away from heat. Keep container tightly closed. Store in a cool and well-ventilated place. Store in corrosive resistant container with a resistant inner liner. Do not store in metal containers. Store away from incompatible materials. Eliminate sources of ignition.

8. Exposure controls/personal protection

Control parameters
Occupational exposure limits
None of the components have assigned exposure limits.

Appropriate engineering controls
No data available.

Individual protection measures, such as personal protective equipment

General information: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area.

Eye/face protection: Wear safety glasses with side shields (or goggles).

Skin protection
Hand protection: Chemical resistant gloves
Other: Wear suitable protective clothing.

Respiratory protection: In case of inadequate ventilation use suitable respirator.

Hygiene measures: Provide eyewash station and safety shower. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing to remove contaminants. Discard contaminated footwear that cannot be cleaned.

9. Physical and chemical properties

Appearance
Physical state: Solid
Form: Crystals or powder
Color: White
Odor: Odorless
Odor threshold: No data available.
ph: No data available.
Melting point/freezing point: 368 °C
Initial boiling point and boiling range: 400 °C
Flash Point: No data available.
Evaporation rate: No data available.
Flammability (solid, gas): No data available.

Upper/lower limit on flammability or explosive limits
Flammability limit - upper (%): No data available.
Flammability limit - lower (%): No data available.
Explosive limit - upper (%): No data available.
Explosive limit - lower (%): No data available.
Vapor pressure: No data available.
Vapor density: 4.2 AIR=1
Relative density: 2.3 (20 °C)
Solubility(ies)
   Solubility in water: 70 g/l (20 °C)
   Solubility (other): glycerol: Approximate 20 g/l acetone: Practically Insoluble
Partition coefficient (n-octanol/water): No data available.
Auto-ignition temperature: No data available.
Decomposition temperature: No data available.
Viscosity: No data available.
Other information
   Molecular weight: 122.55 g/mol (ClHO3.K)

10. Stability and reactivity
Reactivity: No dangerous reaction known under conditions of normal use.
Chemical stability: Material is stable under normal conditions.
Possibility of hazardous reactions: Hazardous polymerization does not occur.
Conditions to avoid: Heat, sparks, flames. Contact with incompatible materials.
Hazardous decomposition products: By heating and fire, toxic vapors/gases may be formed.

11. Toxicological information
Information on likely routes of exposure
   Ingestion: Harmful if swallowed.
   Inhalation: Harmful if inhaled.
   Skin contact: May cause irritation.
   Eye contact: May cause temporary eye irritation.

Information on toxicological effects
Acute toxicity (list all possible routes of exposure)
   Oral
      Product: LD 50 (Rat): 1,870 mg/kg
               LD 50 (Mouse): 8,350 mg/kg
               LD 50 (Rabbit): 7,200 mg/kg

   Dermal
      Product: No data available.

   Inhalation
      Product: No data available.

   Repeated dose toxicity
      Product: No data available.

Skin corrosion/irritation
Product: May cause skin irritation.

Serious eye damage/eye irritation
Product: May irritate eyes.

Respiratory or skin sensitization
Product: Not a skin sensitizer.

Carcinogenicity
Product: This substance has no evidence of carcinogenic properties.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:
No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:
No carcinogenic components identified

No carcinogenic components identified

Germ cell mutagenicity
In vitro
Product: No mutagenic components identified

In vivo
Product: No mutagenic components identified

Reproductive toxicity
Product: No components toxic to reproduction

Specific target organ toxicity - single exposure
Product: None known.

Specific target organ toxicity - repeated exposure
Product: None known.

Aspiration hazard
Product: Not classified

Other effects: None known.

12. Ecological information

Ecotoxicity:
Acute hazards to the aquatic environment:
Fish
Product: No data available.

Aquatic invertebrates
Product: No data available.

Specified substance(s):
POTASSIUM CHLORATE
LC 50 (Water flea (Daphnia magna), 24 h): 599 mg/l Mortality

Chronic hazards to the aquatic environment:
Fish
Product: No data available.
Aquatic invertebrates
   Product:  No data available.

Toxicity to Aquatic Plants
   Product:  No data available.

Persistence and degradability
   Biodegradation
      Product:  There are no data on the degradability of this product.
   BOD/COD ratio
      Product:  No data available.

Bioaccumulative potential
   Bioconcentration factor (BCF)
      Product:  No data available on bioaccumulation.
   Partition coefficient n-octanol / water (log Kow)
      Product:  No data available.

Mobility in soil:  No data available.
Other adverse effects:  Toxic to aquatic life with long lasting effects.

13. Disposal considerations

Disposal instructions:  Discharge, treatment, or disposal may be subject to national, state, or local laws.
Contaminated packaging:  Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT
   UN number:  UN 1485
   UN proper shipping name:  Potassium chlorate
   Transport hazard class(es)
      Class(es):  5.1
      Label(s):  5.1
   Packing group:  II
   Marine Pollutant:  No

IMDG
   UN number:  UN 1485
   UN proper shipping name:  POTASSIUM CHLORATE
   Transport hazard class(es)
      Class(es):  5.1
      Label(s):  5.1
      EmS No.:  F-H, S-Q
   Packing group:  II
   Marine Pollutant:  No
IATA
UN number: UN 1485
Proper Shipping Name: Potassium chlorate
Transport hazard class(es):
   Class(es): 5.1
   Label(s): 5.1
Marine Pollutant: No
Packing group: II

15. Regulatory information

US federal regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):
None present or none present in regulated quantities.

Superfund amendments and reauthorization act of 1986 (SARA)

Hazard categories

[ ] Acute (Immediate) [ ] Chronic (Delayed) [x] Fire [ ] Reactive [ ] Pressure Generating

SARA 302 Extremely hazardous substance
None present or none present in regulated quantities.

SARA 304 Emergency release notification
None present or none present in regulated quantities.

SARA 311/312 Hazardous chemical

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<th>Chemical identity</th>
<th>Threshold Planning Quantity</th>
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<td>POTASSIUM CHLORATE</td>
<td>500 lbs</td>
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SARA 313 (TRI reporting)
None present or none present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)
None present or none present in regulated quantities.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):
None present or none present in regulated quantities.

US state regulations

US. California Proposition 65
No ingredient regulated by CA Prop 65 present.

US. New Jersey Worker and Community Right-to-Know Act
POTASSIUM CHLORATE Listed

US. Massachusetts RTK - Substance List
POTASSIUM CHLORATE Listed

US. Pennsylvania RTK - Hazardous Substances
POTASSIUM CHLORATE Listed
US. Rhode Island RTK
No ingredient regulated by RI Right-to-Know Law present.

Inventory Status:
- Australia AICS: On or in compliance with the inventory
- Canada DSL Inventory List: On or in compliance with the inventory
- EINECS, ELINCS or NLP: On or in compliance with the inventory
- Japan (ENCS) List: On or in compliance with the inventory
- China Inv. Existing Chemical Substances: Not in compliance with the inventory.
- Korea Existing Chemicals Inv. (KECI): On or in compliance with the inventory
- Canada NDSL Inventory: Not in compliance with the inventory.
- Philippines PICCS: On or in compliance with the inventory
- US TSCA Inventory: On or in compliance with the inventory
- New Zealand Inventory of Chemicals: On or in compliance with the inventory
- Japan ISHL Listing: On or in compliance with the inventory
- Japan Pharmacopoeia Listing: Not in compliance with the inventory.

16. Other information, including date of preparation or last revision

NFPA Hazard ID

Hazards rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe
OX: Oxidizing agent

Issue date: 09-08-2014
Revision date: No data available.
Version #: 1.0
Further information: No data available.
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