

MATERIAL SAFETY DATA SHEET

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Version 1.1

Section 1 - Product and Company Information

Product Name	POTASSIUM BROMATE, 99.8%, A.C.S. REAGENT
Product Number	309087
Brand	ALDRICH
Company	Sigma-Aldrich
Street Address	3050 Spruce Street
City, State, Zip, Country	SAINT LOUIS MO 63103 US
Technical Phone:	314 771 5765
Emergency Phone:	414 273 3850 Ext. 5996
Fax:	800 325 5052

Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313
POTASSIUM BROMATE	7758-01-2	Yes
Formula	KBrO3	
Synonyms	EEC No. E924, Potassium bromate	
RTECS Number:	EF8725000	

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Oxidizing. Toxic.
May cause cancer. Explosive when mixed with combustible material.
Toxic if swallowed. Irritating to eyes, respiratory system and skin.
Target organ(s): Kidneys. Ears.

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

INHALATION EXPOSURE

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

Section 5 - Fire Fighting Measures

FLASH POINT

N/A

AUTOIGNITION TEMP

N/A

FLAMMABILITY

N/A

FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Specific Hazard(s): Contact with other material may cause fire.
Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves. Wear disposable coveralls and discard them after use.

METHODS FOR CLEANING UP

Sweep up, place in a bag and hold for waste disposal.

Section 7 - Handling and Storage

HANDLING

User Exposure: Do not breathe dust. Avoid all contact. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

STORAGE

Suitable: Keep tightly closed. Keep away from combustible materials, heat, sparks, and open flame. Store in a cool dry place.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS

Safety shower and eye bath. Use only in a chemical fume hood.

PERSONAL PROTECTIVE EQUIPMENT

Other: Wear appropriate government approved respirator, chemical-resistant gloves, safety goggles, other protective clothing.

GENERAL HYGIENE MEASURES

Wash thoroughly after handling. Wash contaminated clothing before reuse.

Section 9 - Physical/Chemical Properties

Appearance	Color: Colorless Form: Fine crystals	
Property	Value	At Temperature or Pressure
Molecular Weight	167.01 AMU	
pH	5 - 8	
BP/BP Range	N/A	
MP/MP Range	N/A	
Freezing Point	N/A	
Vapor Pressure	N/A	
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
SG/Density	3.27 g/cm ³	
Bulk Density	N/A	
Odor Threshold	N/A	

Volatile%	N/A
VOC Content	N/A
Water Content	N/A
Solvent Content	N/A
Evaporation Rate	N/A
Viscosity	N/A
Surface Tension	N/A
Partition Coefficient	N/A
Decomposition Temp.	N/A
Flash Point	N/A
Explosion Limits	N/A
Flammability	N/A
Autoignition Temp	N/A
Refractive Index	N/A
Optical Rotation	N/A
Miscellaneous Data	N/A
Solubility	Solubility in Water:0.1 M in H2O, 20°C complete, colorless

N/A = not available

Section 10 - Stability and Reactivity

STABILITY

Materials to Avoid: Strong reducing agents, Finely powdered metals.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Hydrogen bromide gas, Oxygen.

Section 11 - Toxicological Information

ROUTE OF EXPOSURE

Skin Absorption: May be harmful if absorbed through the skin.
 Inhalation: Material is irritating to mucous membranes and upper respiratory tract. May be harmful if inhaled.
 Ingestion: Toxic if swallowed. Ingestion can cause nausea, vomiting, diarrhea, abdominal pain, and hemolysis.
 Multiple Routes: Causes eye and skin irritation.

TARGET ORGAN(S) OR SYSTEM(S)

Kidneys. Ears. Liver. Central nervous system.

SIGNS AND SYMPTOMS OF EXPOSURE

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.

TOXICITY DATA

Oral Oral
 Rat Rat
 157 mg/kg 321 mg/kg
 LD50 LD50
 Remarks: Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Olfaction:Other changes. Gastrointestinal:Hypermotility, diarrhea. Behavioral:Change in motor activity (specific assay). Lungs, Thorax, or Respiration:Respiratory stimulation. Nutritional and Gross Metabolic:Changes in:Body temperature decrease.

Intraperitoneal Intraperitoneal
 Rat Rat

50 MG/KG 50 MG/KG
LD50 LD50

Oral Oral
Mouse Mouse
289 mg/kg 289 mg/kg
LD50 LD50

Intraperitoneal Intraperitoneal
Mouse Mouse
177 MG/KG 177 MG/KG
LD50 LD50

Oral
Hamster
388 mg/kg
LD50

Remarks: Behavioral:Altered sleep time (including change in righting reflex). Lungs, Thorax, or Respiration:Respiratory stimulation. Gastrointestinal:Hypermotility, diarrhea.

CHRONIC EXPOSURE - CARCINOGEN

Result: This product is or contains a component that has been reported to be probably carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification.

Species: Rat Rat
Route of Application: Oral Oral
Dose: 4200 MG/KG 4200 MG/KG
Exposure Time: 13W 13W
Frequency: C C

Result: Tumorigenic:Carcinogenic by RTECS criteria.
Gastrointestinal:Tumors. Tumorigenic:Carcinogenic by RTECS criteria. Gastrointestinal:Tumors.

Species: Rat Rat
Route of Application: Oral Oral
Dose: 38500 MG/KG 38500 MG/KG
Exposure Time: 2Y 2Y
Frequency: C C
Result: Tumorigenic:Carcinogenic by RTECS criteria. Kidney, Ureter, Bladder:Kidney tumors. Tumorigenic:Carcinogenic by RTECS criteria. Kidney, Ureter, Bladder:Kidney tumors.

Species: Rat Rat
Route of Application: Oral Oral
Dose: 19635 MG/KG 19635 MG/KG
Exposure Time: 2Y 2Y
Frequency: C C
Result: Tumorigenic:Carcinogenic by RTECS criteria. Kidney, Ureter, Bladder:Kidney tumors. Endocrine:Thyroid tumors. Tumorigenic:Carcinogenic by RTECS criteria. Kidney, Ureter, Bladder:Kidney tumors. Endocrine:Thyroid tumors.

Species: Rat Rat
Route of Application: Oral Oral
Dose: 19250 MG/KG 19250 MG/KG
Exposure Time: 2Y 2Y
Frequency: C C
Result: Tumorigenic:Carcinogenic by RTECS criteria. Kidney, Ureter, Bladder:Kidney tumors. Tumorigenic:Carcinogenic by RTECS criteria. Kidney, Ureter, Bladder:Kidney tumors.

Species: Rat Rat
Route of Application: Oral Oral
Dose: 10500 MG/KG 10500 MG/KG
Exposure Time: 39W 39W
Frequency: C C
Result: Tumorigenic: Carcinogenic by RTECS criteria.
Gastrointestinal: Tumors. Kidney, Ureter, Bladder: Kidney tumors.
Tumorigenic: Carcinogenic by RTECS criteria.
Gastrointestinal: Tumors. Kidney, Ureter, Bladder: Kidney tumors.

Species: Rat Rat
Route of Application: Oral Oral
Dose: 9625 MG/KG 9625 MG/KG
Exposure Time: 2Y 2Y
Frequency: C C
Result: Tumorigenic: Carcinogenic by RTECS criteria. Kidney,
Ureter, Bladder: Kidney tumors. Endocrine: Thyroid tumors.
Tumorigenic: Carcinogenic by RTECS criteria. Kidney, Ureter,
Bladder: Kidney tumors. Endocrine: Thyroid tumors.

Species: Rat Rat
Route of Application: Oral Oral
Dose: 9625 MG/KG 9625 MG/KG
Exposure Time: 2Y 2Y
Frequency: C C
Result: Tumorigenic: Carcinogenic by RTECS criteria. Kidney,
Ureter, Bladder: Kidney tumors. Tumorigenic: Carcinogenic by RTECS
criteria. Kidney, Ureter, Bladder: Kidney tumors.

Species: Rat Rat
Route of Application: Oral Oral
Dose: 5460 MG/KG 5460 MG/KG
Exposure Time: 2Y 2Y
Frequency: C C
Result: Tumorigenic: Neoplastic by RTECS criteria. Kidney,
Ureter, Bladder: Kidney tumors. Tumorigenic: Neoplastic by RTECS
criteria. Kidney, Ureter, Bladder: Kidney tumors.

IARC CARCINOGEN LIST

Rating: Group 2B

CHRONIC EXPOSURE - MUTAGEN

Species: Rat Rat
Route: Intraperitoneal Intraperitoneal
Dose: 60 MG/KG 60 MG/KG
Mutation test: Micronucleus test Micronucleus test

Species: Rat Rat
Route: Intraperitoneal Intraperitoneal
Dose: 80 MG/KG 80 MG/KG
Mutation test: DNA damage DNA damage

Species: Rat Rat
Route: Intraperitoneal Intraperitoneal
Dose: 251 MG/KG 251 MG/KG
Mutation test: Cytogenetic analysis Cytogenetic analysis

Species: Rat Rat
Route: Oral Oral

Dose: 3 MMOL/KG 3 MMOL/KG
Mutation test: Cytogenetic analysis Cytogenetic analysis

Species: Rat Rat
Dose: 20 UMOL/L 20 UMOL/L
Cell Type: leukocyte leukocyte
Mutation test: Sister chromatid exchange Sister chromatid exchange

Species: Mouse Mouse
Route: Intraperitoneal Intraperitoneal
Dose: 25 MG/KG 25 MG/KG
Mutation test: Micronucleus test Micronucleus test

Species: Mouse Mouse
Route: Oral Oral
Dose: 200 MG/KG 200 MG/KG
Exposure Time: 24H 24H
Mutation test: Micronucleus test Micronucleus test

Species: Mouse Mouse
Dose: 7500 UMOL/L 7500 UMOL/L
Cell Type: leukocyte leukocyte
Mutation test: DNA damage DNA damage

Species: Hamster Hamster
Dose: 125 MG/L 125 MG/L
Cell Type: lung lung
Mutation test: Micronucleus test Micronucleus test

Species: Hamster Hamster
Dose: 85 MG/L 85 MG/L
Cell Type: lung lung
Mutation test: Cytogenetic analysis Cytogenetic analysis

Species: Pig Pig
Dose: 7500 UMOL/L 7500 UMOL/L
Cell Type: kidney kidney
Mutation test: DNA damage DNA damage

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Contact a licensed professional waste disposal service to dispose of this material. Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT

Proper Shipping Name: Potassium bromate
UN#: 1484
Class: 5.1
Packing Group: Packing Group II
Hazard Label: Oxidizer
PIH: Not PIH

IATA

Proper Shipping Name: Potassium bromate
IATA UN Number: 1484
Hazard Class: 5.1
Packing Group: II

Section 15 - Regulatory Information

EU DIRECTIVES CLASSIFICATION

Symbol of Danger: O T
Indication of Danger: Oxidizing. Toxic.
R: 45 9 25
Risk Statements: May cause cancer. Explosive when mixed with combustible material. Also toxic if swallowed.
S: 53 45
Safety Statements: Restricted to professional users. Attention - Avoid exposure - obtain special instructions before use. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Oxidizing. Toxic.
Risk Statements: May cause cancer. Explosive when mixed with combustible material. Toxic if swallowed. Irritating to eyes, respiratory system and skin.
Safety Statements: Keep away from combustible material. Avoid exposure - obtain special instructions before use. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Wear suitable protective clothing, gloves, and eye/face protection.
US Statements: Target organ(s): Kidneys. Ears.

UNITED STATES REGULATORY INFORMATION

SARA LISTED: Yes
DEMINIMIS: 0.1 %
NOTES: This product is subject to SARA section 313 reporting requirements.
TSCA INVENTORY ITEM: Yes Yes

UNITED STATES - STATE REGULATORY INFORMATION

CALIFORNIA PROP - 65

California Prop - 65: California Proposition 65: This product is or contains chemical(s) known to the state of California to cause cancer. California Proposition 65: This product is or contains chemical(s) known to the state of California to cause cancer.

CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.
DSL: Yes
NDSL: No

Section 16 - Other Information

DISCLAIMER

For R&D use only. Not for drug, household or other uses.

WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide.

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