



Material Safety Data Sheet

NFPA	HMIS	Personal Protective Equipment						
	<table><tr><td>Health Hazard</td><td>2</td></tr><tr><td>Fire Hazard</td><td>0</td></tr><tr><td>Reactivity</td><td>2</td></tr></table>	Health Hazard	2	Fire Hazard	0	Reactivity	2	 See Section 15.
Health Hazard	2							
Fire Hazard	0							
Reactivity	2							

Section 1. Chemical Product and Company Identification

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Common Name/ Trade Name	Potassium bromate	Catalog Number(s).	P1278, P1214, P1215
Manufacturer	SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248	CAS#	7758-01-2
Commercial Name(s)	Not available.	RTECS	EF8725000
Synonym	Not available.	TSCA	TSCA 8(b) inventory: Potassium bromate
Chemical Name	Bromic acid, potassium salt	CI#	Not available.
Chemical Family	Not available.	IN CASE OF EMERGENCY CHEMTREC (24hr) 800-424-9300 CALL (310) 516-8000	
Chemical Formula	KBrO ₃		
Supplier	SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248		

Section 2. Composition and Information on Ingredients

		<i>Exposure Limits</i>			
Name	CAS #	TWA (mg/m ³)	STEL (mg/m ³)	CEIL (mg/m ³)	% by Weight
1) Potassium bromate	7758-01-2				100

Toxicological Data on Ingredients	Potassium bromate: ORAL (LD50): Acute: 157 mg/kg [Rat] (Registry of Toxic Effects of Chemical Substances). 289 mg/kg [Mouse]. 388 mg/kg [Hamster].
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Section 3. Hazards Identification

Potential Acute Health Effects	Hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation. Prolonged exposure may result in skin burns and ulcerations. Over-exposure by inhalation may cause respiratory irritation. Severe over-exposure can result in death.
Potential Chronic Health Effects	CARCINOGENIC EFFECTS: Classified 2B (Possible for human.) by IARC. MUTAGENIC EFFECTS: Mutagenic for bacteria and/or yeast. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to kidneys, lungs, liver, central nervous system (CNS). 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.

Section 4. First Aid Measures

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.
Skin Contact	In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.
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.

Section 5. Fire and Explosion Data

Flammability of the Product	Non-flammable.
Auto-Ignition Temperature	Not available.
Flash Points	Not available.
Flammable Limits	Not available.
Products of Combustion	Some metallic oxides.
Fire Hazards in Presence of Various Substances	Slightly flammable to flammable in presence of combustible materials, of organic materials.
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. Slightly explosive in presence of heat, of combustible materials.
Fire Fighting Media and Instructions	Oxidizing material. Use water but, do not use water jet or water spray. Use flooding quantities of water. Flood fire area from a distance. Avoid contact with organic, and combustible materials. Do not use dry chemicals or foams. Carbon Dioxide or Halon should not be used because they may only provide limited control.
Special Remarks on Fire Hazards	Dangerous in contact with organic materials. Contact with combustible (wood, paper, oil, clothing, etc.), or organic materials may cause fire.
Special Remarks on Explosion Hazards	Potassium Bromate forms very flammable mixtures with combustible materials and may be explosive if the combustible materials is finely divided.

Section 6. Accidental Release Measures

Small Spill	Use appropriate tools to put the spilled solid in a convenient waste disposal container. Move container from spill area.
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 use metal tools or equipment. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Call for assistance on disposal.

Section 7. Handling and Storage

Precautions	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.
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.

Section 8. Exposure Controls/Personal Protection

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: 0.1 (mg/m ³) from AIHA [United States] Consult local authorities for acceptable exposure limits.

Section 9. Physical and Chemical Properties

Physical state and appearance	Solid. (Crystalline powder. Crystals solid. Granular solid.)	Odor	Odorless.
Molecular Weight	167 g/mole	Taste	Not available.
pH (1% soln/water)	Not available.	Color	White.
Boiling Point	Not available.		
Melting Point	350°C (662°F) Decomposition Temperature: 370 deg. C		
Critical Temperature	Not available.		
Specific Gravity	3.34 (Water = 1)		
Vapor Pressure	Not applicable.		
Vapor Density	Not available.		
Volatility	Not available.		
Odor Threshold	Not available.		
Water/Oil Dist. Coeff.	Not available.		
Ionicity (in Water)	Not available.		
Dispersion Properties	See solubility in water.		
Solubility	Partially soluble in cold water, hot water. Insoluble in acetone. Slightly soluble in alcohol. Solubility in Water: 49.7 g/100 g water @ 100 deg. C; 13.1 g/100 g water @ 40 deg. C; 7.53 g/100 g water @ 25 deg. C; 33.9 g/100 g water @ 80 deg. C; 22 g/100 g water @ 60 deg. C; 6.9 g/100 g water @ 20 deg. C; 3.1 g/100 g water @ 0 deg. C		

Section 10. Stability and Reactivity Data

Stability	The product is stable.
Instability Temperature	Not available.
Conditions of Instability	Incompatible materials
Incompatibility with various substances	Reactive with reducing agents, combustible materials, organic materials, metals, acids.
Corrosivity	Non-corrosive in presence of glass.
Special Remarks on Reactivity	Incompatible with Disulfur dibromide, Selenium. Reacts violently in the presence of water and Disulfur dibromide (3 - 4%). Selenium reacts violently with aqueous solution of Potassium Bromide. Violent reaction with aluminum, aluminum + dinitrotoluene at 290 C., arsenic, carbon, copper, metal sulfides, organic matter, phosphorus, sulfur, Pb(C ₂ H ₃ O ₂) ₂ .
Special Remarks on Corrosivity	Not available.
Polymerization	Will not occur.

Section 11. Toxicological Information

Routes of Entry	Inhalation. Ingestion.
Toxicity to Animals	Acute oral toxicity (LD50): 157 mg/kg [Rat (Registry of Toxic Effects of Chemical Substances)].
Chronic Effects on Humans	CARCINOGENIC EFFECTS: Classified 2B (Possible for human.) by IARC. MUTAGENIC EFFECTS: Mutagenic for bacteria and/or yeast. May cause damage to the following organs: kidneys, lungs, liver, central nervous system (CNS).
Other Toxic Effects on Humans	Hazardous in case of skin contact (irritant), of ingestion, of inhalation.
Special Remarks on Toxicity to Animals	Lethal Dose/Conc 50% Kill: LD50[Rat] - Route: Oral; Dose: 321 mg/kg (Sax's Dangerous Properties of Industrial Materials, 10th ed.)
Special Remarks on Chronic Effects on Humans	May affect genetic material (mutagenic). May cause cancer
Special Remarks on other Toxic Effects on Humans	Acute Potential Health Effects: Skin: Causes skin irritation. In the presence of moisture, this material may be absorbed through the skin. Eyes: Causes moderate eye irritation. May cause transient corneal injury. Inhalation: It causes respiratory tract (nose, throat, lungs) with sneezing, coughing, shortness of breath. Ingestion: Harmful if swallowed. It can cause gastrointestinal tract irritation with abdominal/epigastric pain, hiccups, nausea, vomiting, diarrhea, reduced urinary output, kidney damage, (oliguria, hematuria, albuminuria, acetonuria, proteinuria, acute renal failure, acute renal tubular necrosis), respiratory depression, tachypnea, hyperventilation, tinnitus and subsequent hearing loss. It may also cause methemoglobinemia which is the formation of methemoglobin in the blood. Methemoglobin in sufficient concentration causes cyanosis, a bluish discoloration of the skin, due to deficient oxygenation of the blood. May also affect behavior/central nervous system (headache, dizziness, irritability, nervousness, restlessness, seizures, impaired thinking, personality changes, coma), blood (hemolysis, thrombocytopenia, anemia), cardiovascular system (hypotension). Chronic Potential Health Effects: Ingestion: Prolonged or repeated ingestion may affect behavior/central nervous system (symptoms similar to acute ingestion), metabolism (weight loss), and may cause kidney and liver damage. Metabolic acidosis/electrolyte abnormality in conjunction with acute renal failure may also occur. Inhalation: Prolonged or repeated inhalation can irritate the lungs. It may cause bronchitis to develop with phlegm, cough, and /or shortness of breath.


Section 12. Ecological Information

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.

Section 13. Disposal Considerations

Waste Disposal	Waste must be disposed of in accordance with federal, state and local environmental control regulations.
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Section 14. Transport Information

DOT Classification	CLASS 5.1: Oxidizing material.
Identification	: Potassium bromate UNNA: 1484 PG: II
Special Provisions for Transport	Not available.
DOT (Pictograms)	

Section 15. Other Regulatory Information and Pictograms

Federal and State Regulations	<p>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 bromate</p> <p>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 bromate</p> <p>Connecticut carcinogen reporting list.: Potassium bromate</p> <p>Rhode Island RTK hazardous substances: Potassium bromate</p> <p>Pennsylvania RTK: Potassium bromate</p> <p>Minnesota: Potassium bromate</p> <p>Massachusetts RTK: Potassium bromate</p> <p>Massachusetts spill list: Potassium bromate</p> <p>New Jersey: Potassium bromate</p> <p>New Jersey spill list: Potassium bromate</p> <p>California Director's List of Hazardous Substances: Potassium bromate</p> <p>TSCA 8(b) inventory: Potassium bromate</p> <p>SARA 313 toxic chemical notification and release reporting: Potassium bromate</p>	
California Proposition 65 Warnings	<p>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 bromate</p> <p>California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: No products were found.</p>	
Other Regulations	<p>OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).</p> <p>EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.</p>	
Other Classifications	WHMIS (Canada)	<p>CLASS C: Oxidizing material.</p> <p>CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC).</p> <p>CLASS D-2A: Material causing other toxic effects (VERY TOXIC).</p>
	DSCL (EEC)	

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R9- Explosive when mixed with combustible material.
 R25- Toxic if swallowed.
 R45- May cause cancer.

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.

HMIS (U.S.A.)

Health Hazard	2
Fire Hazard	0
Reactivity	2
Personal Protection	E

National Fire Protection Association (U.S.A.)

Health



Flammability

Reactivity

Specific hazard

WHMIS (Canada)
(Pictograms)DSCL (Europe)
(Pictograms)TDG (Canada)
(Pictograms)ADR (Europe)
(Pictograms)

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 goggles.

Section 16. Other Information**MSDS Code** P4180**References** Not available.**Other Special Considerations** Not available.

Validated by Sonia Owen on 12/14/2012.

Verified by Sonia Owen.

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CALL (310) 516-8000

Notice to Reader

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum Quality Products, Inc. assumes no responsibility for the completeness or accuracy of the information contained herein.