SAFETY DATA SHEET

Preparation Date: 7/31/2015 **Revision Date:** 7/31/2015 **Revision Number:** G1

1. IDENTIFICATION

Product identifier

Product code: P1278
Product Name: POTASSIUM BROMATE, FCC

Other means of identification

Synonyms: Bromic acid, potassium salt
CAS #: 7758-01-2
RTECS # EF8725000
CI#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: Laboratory reagent. Analytic Chemistry. In permanent wave compounds. Dough conditioner. Maturing agent in flour.
Uses advised against No information available

Supplier:
Spectrum Chemical Mfg. Corp
14422 South San Pedro St.
Gardena, CA 90248
(310) 516-8000
Order Online At: https://www.spectrumchemical.com

Emergency telephone number Chemtrec 1-800-424-9300
Contact Person: Martin LaBenz (West Coast)
Contact Person: Ibad Tirmiz (East Coast)

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 3
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Carcinogenicity	Category 2
Specific target organ toxicity (single exposure)	Category 3
Oxidizing solids	Category 2

Label elements

Danger

Hazard statements
Toxic if swallowed
Causes skin irritation
Causes serious eye irritation
Suspected of causing cancer
May cause respiratory irritation
May intensify fire; oxidizer

Hazards not otherwise classified (HNOC)
Not Applicable

Other hazards
Not available

Precautionary Statements - Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Keep away from heat/sparks/open flames/hot surfaces. — No smoking
Keep/Store away from clothing/ .? /combustible materials
Take any precaution to avoid mixing with combustibles .?
Wear protective gloves/protective clothing/eye protection/face protection
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area

Precautionary Statements - Response
IF exposed or concerned: Get medical advice/attention
IN CASE OF FIRE: Use water to extinguish. Do not use dry chemicals or foams. CO_2or Halon may provide limited control.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
IF ON SKIN: Wash with plenty of soap and water
If skin irritation occurs: Get medical advice/attention
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
Rinse mouth

Precautionary Statements - Storage
Store locked up

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %
Potassium Bromate 7758-01-2	7758-01-2	100

4. FIRST AID MEASURES

First aid measures

General Advice: Poison information centers in each State capital city can provide additional assistance for scheduled poisons (13 1126). Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

Skin Contact: Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention. If skin irritation persists, call a physician.

Eye Contact: Flush eyes with water for 15 minutes. Get medical attention. If symptoms persist, call a physician.

Inhalation: Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. WARNING! It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled or ingested material is toxic, infectious or corrosive. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Get medical attention.

Ingestion: Toxic if swallowed. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Immediate medical attention is required.

Most important symptoms and effects, both acute and delayed

Symptoms Causes serious eye irritation. Causes skin irritation. Irritating to respiratory system. May cause coughing and shortness of breath. May cause digestive (gastrointestinal) tract irritation. May cause abdominal pain, nausea, vomiting, diarrhea. It may affect the kidneys. May cause methemoglobinemia. May cause cyanosis. Respiratory depression. May affect behavior/central nervous system. May affect the blood. May affect the cardiovascular system.

Indication of any immediate medical attention and special treatment needed

Notes to Physician: Treat symptomatically

Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Water. CO2 may be of no value in extinguishing fires involving oxidizers and may only provide limited control.

Unsuitable Extinguishing Media: Dry chemical. Foam. Halons.

Specific hazards arising from the chemical

Hazardous Combustion Products: No information available.

Specific hazards: Oxidizer. Keep away from combustible materials (wood, paper, oil, clothing, etc.)
The product is not flammable, but it may cause fire when in contact with other material
Contact with combustible or organic materials may cause fire
Contact with finely divided (powdered) metals may cause ignition (fire) or explosion
Will accelerate burning when involved in a fire
Container explosion may occur under fire conditions or when heated

Special Protective Actions for Firefighters

Specific Methods: For large fires, flood fire area with water from a distance. Cool affected containers with flooding quantities of water. Do not get water inside containers. DO NOT use combustible materials such as sawdust.

Special Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions: Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid contact with skin, eyes and clothing. Wear personal protective equipment. Avoid dust formation. Remove all sources of ignition. Keep combustibles (wood, paper, oil, clothing, etc.) away from spilled material.

Environmental precautions Prevent further leakage or spillage if safe to do so. Prevent entry into waterways, sewers, basements or confined areas. Prevent product from entering drains.

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Cover with plastic sheet to prevent spreading.

Methods for cleaning up Sweep up and shovel into suitable containers for disposal. Do not use combustible materials such as paper towels, sawdust, clothing, etc. to clean up spill. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions:
Provide sufficient air exchange and/or exhaust in work rooms. Avoid dust formation. Keep away from open flames, hot surfaces and sources of ignition. Keep away from incompatible materials.

Safe Handling Advice
Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Do not ingest. Do not smoke. Do not breathe vapours/dust. Use only in well-ventilated areas. Protect from moisture. Keep away from open flames, hot surfaces and sources of ignition. Keep away from combustible material. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:
Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Do not store near combustible materials. Store in a segrated and approved area. Store away from incompatible materials.

Incompatible Materials:
Reducing agents. Combustible materials. Organic materials. Sulfur. Acids. Strong bases. Powdered metals. Disulfur dibromide. Phosphorus. Metal sulfides.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

Components	OSHA	NIOSH	ACGIH	AIHA WHEEL
Potassium Bromate 7758-01-2	None	None	None	0.1 mg/m^3 TWA

Canada

Components	Alberta	British Columbia	Ontario	Quebec
Potassium Bromate 7758-01-2	None	None	None	None

Australia and Mexico

Components	Australia	Mexico
Potassium Bromate 7758-01-2	None	None

Appropriate engineering controls

Engineering measures to reduce exposure: Ensure adequate ventilation, especially in confined areas. 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.

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

Eye protection: Goggles

Skin and body protection: Chemical resistant apron. Gloves. Long sleeved clothing.

Respiratory protection: Wear respirator with dust filter.

Hygiene measures: Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

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Physical state:
Solid.

Appearance:
Crystalline granules. Crystalline powder. Crystalline solid.

Color:
White.

Odor:
Odorless.

Taste
No information available

Formula:
KBrO3

Molecular/Formula weight:
167.00 g/mol

Flammability:
No information available

Flash point (°C):
No data available

Flashpoint (°C/°F):
No information available.

Flash Point Tested according to:
Not available

Autoignition Temperature (°C/°F):
No information available

Lower Explosion Limit (%):
No information available

Upper Explosion Limit (%):
No information available

pH:
No information available

Melting point/range(°C/°F):
350°C/662°F
370°C/698°F (dec)

Boiling point/range(°C/°F):
No information available

Decomposition temperature(°C/°F):
No information available

Bulk density:
No information available

Density (g/cm3):
1.37

Specific gravity:
No information available

Vapor pressure @ 20°C (kPa):
No information available

Evaporation rate:
No information available

Vapor density:
5.8

VOC content (g/L):
No information available

Odor threshold (ppm):
No information available

Partition coefficient (n-octanol/water):
No information available

Viscosity:
No information available

Miscibility:
No information available

Solubility:
Slightly soluble in alcohol
Insoluble in Acetone
Solubility in Water: 49.7 g/100 g water @ 100°C; 33.9 g/100 g water @ 80°C; 22 g/100 g water @ 60°C; 13.1 g/100 g water @ 40°C; 7.53 g/100 g water @ 25°C; 6.9 g/100 g water @ 20°C; 3.1 g/100 g water @ 0°C

10. STABILITY AND REACTIVITY

Reactivity
Reacts violently in the presence of water and Disulfur dibromide (3 - 4%).
Seleium reacts violently with aqueous solution of Potassium Bromide.
Violent reaction with aluminum, aluminum + dinitrotoluene at 290 C., arsenic, carbon, copper, metal sulfides, powdered metals, organic matter, combustible materials, acids, phosphorus, sulfur, Pb(C2H3O2)2
Reacts with strong bases

Chemical stability

Stability: Stable under recommended storage conditions

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid: Heat. Ignition sources. Avoid dust formation. Contact with combustible materials (wood, paper, oil, clothing, etc.). Incompatible materials.

Incompatible Materials: Reducing agents. Combustible materials. Organic materials. Sulfur. Acids. Strong bases. Powdered metals. Disulfur dibromide. Phosphorus. Metal sulfides.

Hazardous decomposition products: Potassium oxides. Hydrogen Bromide.

Other Information
Corrosivity: No information available

Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:
Ingestion. Inhalation. Eyes. Skin.

Acute Toxicity

Component Information

Potassium Bromate - 7758-01-2

LD50/oral/rat = = 157 mg/kg Oral LD50 Rat
LD50/oral/mouse = 289 mg/kg oral LD50 mouse
LD50/dermal/rat = No information available
LD50/dermal/rabbit = No information available
LC50/inhalation/rat = No information available
LC50/inhalation/mouse = No infomation available
Other LD50 or LC50information = 388 mg/kg oral LD50 hamster
50 mg/kg intraperitoneal LD50 rat
177 mg/kg intraperitoneal LD50 mouse

Product Information

LD50/oral/rat =
VALUE- Acute Tox Oral = 157mg/kg

LD50/oral/mouse =
Value - Acute Tox Oral = 289mg/kg

LD50/dermal/rabbit
VALUE-Acute Tox Dermal = No information available

LD50/dermal/rat
VALUE -Acute Tox Dermal = No information available

LC50/inhalation/rat
VALUE-Vapor = No information available
VALUE-Gas = No information available
VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse
VALUE-Vapor = No information available
VALUE - Gas = No information available
VALUE - Dust/Mist = No information available

Symptoms

Skin Contact: Causes skin irritation.

Eye Contact: Causes serious eye irritation.

Inhalation May cause irritation of the respiratory tract and mucous membranes irritation.

Ingestion Toxic 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, irritabililty, nervousness, restlessness, seizures, impaired thinking, personality changes, coma), blood (hemolysis, thrombocytopenia, anemia), cardiovascular system (hypotension)..

Aspiration hazard No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic Toxicity 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
Prolonged or repeated inhalation can irritate the lungs
Repeated exposure may cause bronchitis to develop with cough, phlegm, and /or shortness of breath

Sensitization: No information available

Mutagenic Effects: Experiments with bacteria have shown mutagenic effects
Cytogenic Analysis: human lymphocyte
Cytogenic analysis (hamster lung)
Mutations in microorganisms
DNA damage - hamster ovary

Carcinogenic effects: Suspected of causing cancer.

Components	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Notifiable Carcinogenic Substances	Australia - Prohibited Carcinogenic Substances
Potassium Bromate	Group 2B - Possibly Carcinogenic to Humans - Monograph 73 [1999] Supplement 7 [1987]	Not listed	Not listed	Present	Not listed	Not listed

Reproductive toxicity No data is available

Reproductive Effects: No information available
Developmental Effects: No information available
Teratogenic Effects: No information available

Specific Target Organ Toxicity

STOT - single exposure central nervous system. Liver, kidney, and respiratory system.
STOT - repeated exposure No information available
Target Organs: Central nervous system. Liver, kidney, and respiratory system. Lungs.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: No data available.

Persistence and degradability: No information available

Bioaccumulative potential: No information available

Mobility: No information available

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products:
Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:
Empty containers should be taken for local recycling, recovery or waste disposal Dispose of as unused product.

Components	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Potassium Bromate	None	None	None	None

14. TRANSPORT INFORMATION

DOT

UN-No: UN1484
Proper Shipping Name: Potassium bromate
Hazard Class: 5.1
Subsidiary Risk: No information available
Packing Group: II
ERG No: 140
Marine Pollutant No data available
DOT RQ (lbs): No information available
Special Provisions No Information available
Symbol(s):

TDG (Canada)

UN-No: UN1484
Proper Shipping Name: Potassium bromate
Hazard Class: 5.1
Subsidiary Risk: No information available
Packing Group: II
Description: No information available

14. TRANSPORT INFORMATION

ADR

UN-No:	UN1484
Proper Shipping Name:	Potassium bromate
Hazard Class:	5.1
Packing Group:	II
Subsidiary Risk:	No information available
Classification Code:	No information available
Description:	No information available
CEFIC Tremcard No:	No information available

IMO / IMDG

UN-No:	UN1484
Proper Shipping Name:	Potassium bromate
Hazard Class:	5.1
Subsidiary Risk:	No information available
Packing Group:	II
Description:	No information available
IMDG Page:	No information available
Marine Pollutant	No information available
EMS:	F-H
MFAG:	No information available
Maximum Quantity:	No information available

RID

UN-No:	UN1484
Proper Shipping Name:	Potassium bromate
Hazard Class:	5.1
Subsidiary Risk:	No information available
Packing Group:	II
Classification Code:	No information available
Description:	No information available

ICAO

UN-No:	UN1484
Proper Shipping Name:	Potassium bromate
Hazard Class:	5.1
Subsidiary Risk:	No information available
Packing Group:	II
Description:	No information available

IATA

UN-No:	UN1484
Proper Shipping Name:	Potassium bromate
Hazard Class:	5.1
Subsidiary Risk:	No information available
Packing Group:	II
ERG Code:	5L
Special Provisions	No information available
Description:	No information available

15. REGULATORY INFORMATION

International Inventories

Components	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
Potassium Bromate	Present	Present KE-29078	Present	Present (1)-109	Present	Present	Present 231-829-8

U.S. Regulations

Potassium Bromate

Massachusetts RTK: Present
New Jersey RTK Hazardous Substance List: 1559
New Jersey (EHS) List: 1559 500 lb TPQ
New Jersey - Discharge Prevention - List of Hazardous Substances: Present
Pennsylvania RTK: Present
Minnesota - Hazardous Substance List: Present
California Directors List of Hazardous Substances: Present

FDA - Direct Food Additives 21 CFR 172.730
FDA - 21 CFR - Total Food Additives 136.110 136.180 137.155 137.160 137.205 172.730

California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

Chemicals Known to the State of California to Cause Cancer:
WARNING: This product contains a chemical known to the State of California to cause cancer. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
Potassium Bromate	carcinogen	Not Listed	Not Listed	Not Listed

CERCLA/SARA

Components	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting *de minimis*
Potassium Bromate	None	None	None	None	0.1 % de minimis concentration

U.S. TSCA

Components	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
Potassium Bromate	Not Applicable	Not Applicable

Canada

WHMIS hazard class:
C Oxidizing materials
D1B Toxic materials
D2A Very toxic materials
D2B Toxic materials

Potassium Bromate
C D1B D2A D2B

Canada Controlled Products Regulation:
This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

Inventory

Potassium Bromate

Components	Canada (DSL)	Canada (NDSL)
Potassium Bromate	Present	Not Listed

Components	CEPA Schedule I - Toxic Substances	CEPA - 2010 Greenhouse Gases Subject to Manditory Reporting
Potassium Bromate	Present	Not listed

EU Classification

R-phrase(s)
R25 - Toxic if swallowed.
R45 - May cause cancer.
R 9 - Explosive when mixed with combustible material.

S -phrase(s)
S53 - Avoid exposure - obtain special instructions before use.
S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Components	Classification	Concentration Limits:	Safety Phrases
Potassium Bromate	T; R25 Carc.Cat.2; R45 O; R9	No information	S53 S45

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:
T - Toxic
O - Oxidising.

16. OTHER INFORMATION

16. OTHER INFORMATION

Preparation Date: 7/31/2015
Revision Date: 7/31/2015
Prepared by: Sonia Owen

Disclaimer: All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) 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 SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. 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 SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

End of Safety Data Sheet