

MATERIAL SAFETY DATA SHEET

Section 1 - Chemical Product and Company Identification

MSDS Name: 0.0167M Potassium bromate-bromide solution
Catalog Numbers: J/6100/15, J/6100/17, J/6100/24, J/6100C/05, J/6100C/90
Synonyms: None.
Company Identification: Fisher Scientific UK
Bishop Meadow Road, Loughborough
Leics. LE11 5RG
For information in Europe, call: (01509) 231166
Emergency Number, Europe: 01509 231166

Section 2 - Composition, Information on Ingredients

CAS#: 7487-94-7
Chemical Name: Mercuric chloride (4% soln)
%: 0.05
EINECS#: 231-299-8
Hazard Symbols:
Risk Phrases:

CAS#: 7732-18-5
Chemical Name: Water
%: 98.17
EINECS#: 231-791-2
Hazard Symbols:
Risk Phrases:

CAS#: 7758-01-2
Chemical Name: Potassium bromate
%: 0.28
EINECS#: 231-829-8
Hazard Symbols:
Risk Phrases:

CAS#: 7758-02-3
Chemical Name: Potassium bromide
%: 1.5
EINECS#: 231-830-3
Hazard Symbols:
Risk Phrases:

Text for R-phrases: see Section 16

Hazard Symbols: XN



Risk Phrases:

36/37/38

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Warning! May cause central nervous system depression. Harmful if swallowed. Causes eye, skin, and respiratory tract irritation. Target Organs: Respiratory system, eyes, skin.

Potential Health Effects

Eye: Causes eye irritation.

Skin: Causes skin irritation.

Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause central nervous system depression.

Inhalation: Causes respiratory tract irritation.

Chronic: Repeated inhalation may cause chronic bronchitis. Chronic ingestion can cause irritability, confusion, tremors, memory loss, headache, slurred speech and anorexia.

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

Skin: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists.

Ingestion: If victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical aid immediately.

Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Notes to Physician:

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Extinguishing Media: Use foam, dry chemical, or carbon dioxide.

Autoignition: Not applicable.

Temperature:

Flash Point: Not applicable.

Explosion Limits: Not available

Lower:

Explosion Limits: Not available

Upper:

NFPA Rating: Not published

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Wash area with soap and water. Clean up spills immediately, observing

precautions in the Protective Equipment section. Provide ventilation.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Use with adequate ventilation. Avoid contact with eyes, skin, and clothing. Avoid ingestion and inhalation.

Storage: Store in a cool, dry place. Do not store in direct sunlight. Store in a tightly closed container.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls:

Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

Chemical Name Final PELs	ACGIH	NIOSH	OSHA -
Mercuric chloride (4% soln) listed	0.025 mg/m3 TWA (as Hg) (listed under Mercury inorganic compounds).Skin - potential significant contribution to overall exposure by the cutaneous route (listed under Mercury inorganic compounds).	0.05 mg/m3 TWA (vapor, except organo alkyls, as Hg) (listed under Mercury compounds).10 mg/m3 IDLH (as Hg, not including organo(alkyl) compounds). (listed under Mercury compounds).	none
Water listed	none listed	none listed	none
Potassium bromate listed	none listed	none listed	none
Potassium bromide	none listed	none listed	none

listed |

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OSHA Vacated PELs: Mercuric chloride (4% soln): None listed Water: None listed Potassium bromate: None listed Potassium bromide: None listed

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Liquid

Color: colorless

Odor: None reported.

pH: Not available

Vapor Pressure: Not available

Vapor Density: Not available

Evaporation Rate: Not available

Viscosity: Not available

Boiling Point: Not available

Freezing/Melting Point: Not available

Decomposition Temperature: Not available

Solubility in water: Miscible with water.

Specific Gravity/Density: 1.01

Molecular Formula: Mixture

Molecular Weight: 0

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Incompatible materials, light.

Incompatibilities with Other Materials: Not available

Hazardous Decomposition Products: Hydrogen bromide, oxides of potassium.

Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#: CAS# 7487-94-7: OV9100000

CAS# 7732-18-5: ZC0110000

CAS# 7758-01-2: EF8725000

CAS# 7758-02-3: TS7650000

LD50/LC50: RTECS:

CAS# 7487-94-7: Draize test, rabbit, eye: 50 ug/24H Severe;

Draize test, rabbit, skin: 500 mg/24H Severe;

Oral, mouse: LD50 = 6 mg/kg;

Oral, rat: LD50 = 1 mg/kg;

Skin, rat: LD50 = 41 mg/kg;

RTECS:

CAS# 7732-18-5: Oral, rat: LD50 = >90 mL/kg;

RTECS:

CAS# 7758-01-2: Oral, mouse: LD50 = 289 mg/kg;

Oral, rat: LD50 = 157 mg/kg;

RTECS:

CAS# 7758-02-3: Oral, mouse: LD50 = 3120 mg/kg;

Oral, rat: LD50 = 3070 mg/kg;

Carcinogenicity: Mercuric chloride (4% soln) - IARC: Group 3 (not classifiable)
Water - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Potassium bromate - California: carcinogen, initial date 1/1/90 IARC: Group 2B
carcinogen
Potassium bromide - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop
65.

Epidemiology: Not available

Teratogenicity: Not available

Reproductive: Not available

Neurotoxicity: Not available

Mutagenicity: Not available

Other: Not available

Section 12 - Ecological Information

Not available

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification. RCRA P-Series: None listed. RCRA U-Series: None listed.

Section 14 - Transport Information

US DOT

Shipping Name: Not regulated as a hazardous material

Hazard Class:

UN Number:

Packing Group:

Canada TDG

Shipping Name: Not available

Hazard Class:

UN Number:

Packing Group:

Section 15 - Regulatory Information

US Federal

TSCA

CAS# 7487-94-7 is listed on the TSCA
Inventory.

CAS# 7732-18-5 is listed on the TSCA
Inventory.

CAS# 7758-01-2 is listed on the TSCA
Inventory.

CAS# 7758-02-3 is listed on the TSCA
Inventory.

Health & Safety Reporting List None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules None of the chemicals in this product are under a Chemical Test Rule.

Section 12b None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances CAS# 7487-94-7: 500 lb TPQ (lower threshold); 10000 lb TPQ (upper threshold)

SARA Codes CAS # 7487-94-7: acute, chronic. CAS # 7758-01-2: acute, chronic, flammable. CAS # 7758-02-3: acute, chronic.

Section 313 This chemical is not at a high enough concentration to be reportable under Section 313. This material contains Potassium bromate (CAS# 7758-01-2, 0 28%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 372.

Clean Air Act: CAS# 7487-94-7 listed as Mercury compounds is listed as a hazardous air pollutant (HAP). This material does not contain any Class 1 Ozone depletors. This material does not contain any Class 2 Ozone depletors.

Clean Water Act: None of the chemicals in this product are listed as Hazardous Substances under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. CAS# 7487-94-7 is listed as a Toxic Pollutant under the Clean Water Act.

OSHA: STATE Mercuric chloride (4% soln) can be found on the following state right to know lists: California, (listed as Mercury compounds), New Jersey, Pennsylvania, Massachusetts. Water is not present on state lists from CA, PA, MN, MA, FL, or NJ. Potassium bromate can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts. Potassium bromide is not present on state lists from CA, PA, MN, MA, FL, or NJ.

California Prop 65 WARNING: This product contains Potassium bromate, a chemical known to the state of California to cause cancer. WARNING: This product contains Mercuric chloride (4% soln), listed as 'Mercury compounds', a chemical known to the state of California to cause birth defects or other reproductive harm.

California No Significant Risk Level: CAS# 7758-01-2: 1 æg/day NSRL

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: XN

Risk Phrases:

R 36/37/38 Irritating to eyes, respiratory system and skin.

Safety Phrases:

S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

WGK (Water Danger/Protection)

CAS# 7487-94-7: 3

CAS# 7732-18-5: Not available

CAS# 7758-01-2: Not available

CAS# 7758-02-3: 1

Canada

CAS# 7487-94-7 is listed on Canada's DSL List

CAS# 7732-18-5 is listed on Canada's DSL List

CAS# 7758-01-2 is listed on Canada's DSL List

CAS# 7758-02-3 is listed on Canada's DSL List

Canadian WHMIS Classifications: Not available

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

CAS# 7487-94-7 is listed on Canada's Ingredient Disclosure List

CAS# 7732-18-5 is not listed on Canada's Ingredient Disclosure List.

CAS# 7758-01-2 is not listed on Canada's Ingredient Disclosure List.

CAS# 7758-02-3 is listed on Canada's Ingredient Disclosure List

Section 16 - Other Information

MSDS Creation Date: 9/02/1997

Revision #3 Date 2/09/2005

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.