Fisher Scientific

MATERIAL SAFETY DATA SHEET
Bromcresol green indicator solution

Section 1 - Chemical Product and Company Identification

MSDS Name: Bromcresol green indicator solution

Catalog Numbers: B/4320L/08, B4320L

Synonyms: Bromcresol green is tetrabromo-m-cresolsulfonphthalein.

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#	Chemical Name:	%	EINECS#	Hazard Symbols:	Risk Phrases:
64-17-5	Ethyl alcohol	19.85	200-578-6	F	11
67-56-1	Methyl alcohol	1.045	200-659-6	F T	11 23/24/25 39/23/24/25
67-64-1	Acetone	2	200-662-2	F XI	11 36 66 67
76-60-8	Bromcresol green	0.04	200-972-8		
7732-18-5	Water	77.065	231-791-2		

Text for R-phrases: see Section 16

Hazard Symbols: None listed

Risk Phrases: 10

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Flammable.

Potential Health Effects

Eye: Vapors may cause eye irritation. May cause painful sensitization to light. May cause severe eye irritation and possible injury.

Skin: May cause skin irritation. May be absorbed through the skin.

Ingestion: May be fatal or cause blindness if swallowed. May cause irritation of the digestive tract. May cause systemic toxicity with acidosis. May cause liver and kidney damage. May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure.

Inhalation: May cause respiratory tract irritation. May cause liver and kidney damage. May cause visual impairment and possible permanent blindness. May cause effects similar to those described for ingestion.

Chronic: Prolonged or repeated skin contact may cause dermatitis. Chronic inhalation and ingestion may cause effects similar to those of acute inhalation and ingestion.

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: Get medical aid if irritation develops or persists. Flush skin with plenty of soap and water.

Ingestion: Call a poison control center. If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.

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

Notes to Physician: Effects may be delayed. Ethanol may inhibit methanol metabolism.

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. Vapors can travel to a source of ignition and flash back. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. Flammable liquid and vapor. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas. Vapors may form an explosive mixture with air. Containers may explode when heated.

Extinguishing Media: For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. Use water spray to cool fire-exposed containers. Water may be ineffective. For large fires, use dry chemical, carbon dioxide, alcohol-resistant foam, or water spray. Cool containers with flooding quantities of water until well after fire is out.

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. Remove all sources of ignition. Provide ventilation.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Ground and bond containers when transferring material. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Keep away from heat, sparks and flame. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Avoid breathing vapor or mist.

Storage: Keep away from sources of ignition. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls:

Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Exposure Limits

CAS# 64-17-5:

United Kingdom, WEL - TWA: 1000 ppm TWA; 1920 mg/m3 TWA United Kingdom, WEL - STEL: 3000 ppm STEL; 5760 mg/m3 STEL

United States OSHA: 1000 ppm TWA; 1900 mg/m3 TWA

Belgium - TWA: 1000 ppm TWA; 1907 mg/m3 TWA

France - VME: 1000 ppm VME; 1900 mg/m3 VME France - VLE: 5000 ppm VLCT; 9500 mg/m3 VLCT

Germany: 500 ppm TWA (exposure factor 2); 960 mg/m3 TWA (exposure factor 2)

Malaysia: 1000 ppm TWA; 1880 mg/m3 TWA

Netherlands: 500 ppm MAC; 1000 mg/m3 MAC

Russia: 1000 mg/m3 TWA (vapor) Russia: 2000 mg/m3 STEL (vapor)

Spain: 1000 ppm VLA-ED; 1910 mg/m3 VLA-ED

CAS# 67-56-1:

United Kingdom, WEL - TWA: 200 ppm TWA; 266 mg/m3 TWA United Kingdom, WEL - STEL: 250 ppm STEL; 333 mg/m3 STEL

United States OSHA: 200 ppm TWA; 260 mg/m3 TWA

Belgium - TWA: 200 ppm TWA; 266 mg/m3 TWA Belgium - STEL: 250 ppm STEL; 333 mg/m3 STEL

France - VME: 200 ppm VME; 260 mg/m3 VME France - VLE: 1000 ppm VLCT; 1300 mg/m3 VLCT

Germany: 200 ppm TWA (exposure factor 4); 270 mg/m3 TWA (exposure factor 4) Germany: skin notation

Japan: 200 ppm OEL; 260 mg/m3 OEL

Malaysia: 200 ppm TWA; 262 mg/m3 TWA

Netherlands: 400 ppm STEL; 520 mg/m3 STEL Netherlands: 200 ppm MAC; 260 mg/m3 MAC

Russia: 5 mg/m3 TWA (vapor) Russia: 15 mg/m3 STEL (vapor)

Spain: 200 ppm VLA-ED; 266 mg/m3 VLA-ED

CAS# 67-64-1:

United Kingdom, WEL - TWA: 500 ppm TWA; 1210 mg/m3 TWA United Kingdom, WEL - STEL: 1500 ppm STEL; 3620 mg/m3 STEL

United States OSHA: 1000 ppm TWA; 2400 mg/m3 TWA

Belgium - TWA: 500 ppm TWA; 1210 mg/m3 TWA Belgium - STEL: 1000 ppm STEL; 2420 mg/m3 STEL

France - VME: 500 ppm VME; 1210 mg/m3 VME

Germany: 500 ppm TWA (exposure factor 2); 1200 mg/m3 TWA (exposure factor 2)

Japan: 200 ppm OEL; 470 mg/m3 OEL

Malaysia: 500 ppm TWA; 1187 mg/m3 TWA

Netherlands: 1004 ppm STEL; 2420 mg/m3 STEL Netherlands: 502 ppm MAC; 1210 mg/m3 MAC

Russia: 200 mg/m3 TWA (vapor) Russia: 800 mg/m3 STEL (vapor)

Spain: 500 ppm VLA-ED; 1210 mg/m3 VLA-ED

CAS# 76-60-8:

CAS# 7732-18-5:

Personal Protective Equipment

Eyes: Wear chemical splash goggles.

Skin: Wear appropriate protective 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: not available

Odor: Alcohol-like.

pH: Neutral

Vapor Pressure:	29 mm Hg
Viscosity:	0.006 P @ 20 deg C
Boiling Point:	63.9 deg C (147.02°F)
Freezing/Melting Point:	-97.8 deg C
Autoignition Temperature:	463.9 deg C (867.02 deg F)
Flash Point:	11.1 deg C (51.98 deg F)
Explosion Limits: Lower:	6.0
Explosion Limits: Upper:	36.0
Decomposition Temperature:	Not available
Solubility in water:	Soluble
Specific Gravity/Density:	0.8 (water=1)
Molecular Formula:	Mixture
Molecular Weight:	Not applicable

Section 10 - Stability and Reactivity

Chemical Stability:	Stable under normal temperatures and pressures.
Conditions to Avoid:	High temperatures, ignition sources.
Incompatibilities with Other Materials	Strong oxidizing agents.
Hazardous Decomposition Products	Carbon monoxide, oxides of sulfur, carbon dioxide, hydrogen bromide, formaldehyde.
Hazardous Polymerization	Has not been reported.

Section 11 - Toxicological Information

RTECS#:

CAS# 64-17-5: KQ6300000
CAS# 67-56-1: PC1400000
CAS# 67-64-1: AL3150000
CAS# 76-60-8: SJ7456000
CAS# 7732-18-5: ZC0110000

LD50/LC50:

RTECS:
CAS# 64-17-5: Draize test, rabbit, eye: 500 mg Severe;
Draize test, rabbit, eye: 500 mg/24H Mild;
Draize test, rabbit, skin: 20 mg/24H Moderate;
Inhalation, mouse: LC50 = 39 gm/m3/4H;
Inhalation, rat: LC50 = 20000 ppm/10H;
Oral, mouse: LD50 = 3450 mg/kg;
Oral, rabbit: LD50 = 6300 mg/kg;
Oral, rat: LD50 = 7060 mg/kg;
Oral, rat: LD50 = 9000 mg/kg;
.
RTECS:
CAS# 67-56-1: Draize test, rabbit, eye: 40 mg Moderate;
Draize test, rabbit, eye: 100 mg/24H Moderate;
Draize test, rabbit, skin: 20 mg/24H Moderate;
Inhalation, rabbit: LC50 = 81000 mg/m3/14H;
Inhalation, rat: LC50 = 64000 ppm/4H;
Oral, mouse: LD50 = 7300 mg/kg;
Oral, rabbit: LD50 = 14200 mg/kg;
Oral, rat: LD50 = 5600 mg/kg;
Skin, rabbit: LD50 = 15800 mg/kg;
.
RTECS:
CAS# 67-64-1: Dermal, guinea pig: LD50 = >9400 uL/kg;
Draize test, rabbit, eye: 20 mg Severe;
Draize test, rabbit, eye: 20 mg/24H Moderate;

Draize test, rabbit, eye: 10 uL Mild;
Draize test, rabbit, skin: 500 mg/24H Mild;
Inhalation, mouse: LC50 = 44 gm/m3/4H;
Inhalation, rat: LC50 = 50100 mg/m3/8H;
Oral, mouse: LD50 = 3 gm/kg;
Oral, rabbit: LD50 = 5340 mg/kg;
Oral, rat: LD50 = 5800 mg/kg;
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RTECS:
CAS# 76-60-8:.
RTECS:
CAS# 7732-18-5: Oral, rat: LD50 = >90 mL/kg;
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Carcinogenicity: Ethyl alcohol - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Methyl alcohol - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Acetone - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Bromcresol green - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Water - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

Other: See actual entry in RTECS for complete information.

Section 12 - Ecological Information

Not available

Section 13 - Disposal Considerations

Products considered hazardous for supply are classified as Special Waste and the disposal of such chemicals is covered by regulations which may vary according to location. Contact a specialist disposal company or the local authority or advice. Empty containers must be decontaminated before returning for recycling.

Section 14 - Transport Information

	IATA	IMO	RID/ADR
Shipping Name:	ETHANOL SOLUTION	ETHANOL SOLUTION	ETHANOL SOLUTION
Hazard Class:	3	3	3
UN Number:	1170	1170	1170
Packing Group:	II	II	II

USA RQ: CAS# 67-56-1: 5000 lb final RQ; 2270 kg final RQ

USA RQ: CAS# 67-64-1: 5000 lb final RQ; 2270 kg final RQ

Section 15 - Regulatory Information

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:Not available

Risk Phrases:

R 10 Flammable.

Safety Phrases:

S 16 Keep away from sources of ignition - No smoking.
S 24/25 Avoid contact with skin and eyes.

WGK (Water Danger/Protection)

CAS# 64-17-5: 0
CAS# 67-56-1: 1
CAS# 67-64-1: 0
CAS# 76-60-8: Not available
CAS# 7732-18-5: Not available

Canada

CAS# 64-17-5 is listed on Canada's DSL List
CAS# 67-56-1 is listed on Canada's DSL List
CAS# 67-64-1 is listed on Canada's DSL List
CAS# 76-60-8 is listed on Canada's DSL List
CAS# 7732-18-5 is listed on Canada's DSL List

US Federal

TSCA

CAS# 64-17-5 is listed on the TSCA Inventory.
CAS# 67-56-1 is listed on the TSCA Inventory.
CAS# 67-64-1 is listed on the TSCA Inventory.
CAS# 76-60-8 is listed on the TSCA Inventory.
CAS# 7732-18-5 is listed on the TSCA Inventory.

Section 16 - Other Information

Text for R-phrases from Section 2

R 11 Highly flammable.
R 23/24/25 Toxic by inhalation, in contact with skin and if swallowed.
R 36 Irritating to eyes.
R 39/23/24/25 Toxic : danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.
R 66 Repeated exposure may cause skin dryness or cracking.
R 67 Vapours may cause drowsiness and dizziness.

MSDS Creation Date: 4/17/1998
Revision #5 Date 10/31/2007
Revisions were made in Sections: 5, 9
