



MATERIAL SAFETY DATA SHEET
Universal Indicator

Section 1 - Chemical Product and Company Identification

MSDS Name: Universal Indicator

Catalog Numbers: U/0020/05, U/0020/07, U/0020/08, U/0020/17, U/0020/PB05, U/0020/PB07, U/0020/PB08, U/0020/PB17, U/0025/05, U/0025/08, U/0025/17, U/0025/PB05, U/0025/PB08

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# | Chemical Name: | % | EINECS# | Hazard Symbols: | Risk Phrases: |
|------------|-------------------------|-------|-----------|-----------------|-------------------------|
| 64-17-5 | Ethyl alcohol | ~90 | 200-578-6 | F | 11 |
| 67-56-1 | Methyl alcohol | 5 | 200-659-6 | F T | 11 23/24/25 39/23/24/25 |
| 518-51-4 | Phenolphthalein | 0.045 | 208-254-6 | | |
| 845-10-3 | Methyl Red, sodium salt | 0.017 | 212-682-9 | | |
| 7732-18-5 | Water | 5.0 | 231-791-2 | | |
| 34722-90-2 | Bromothymol blue | 0.056 | 252-169-7 | | |

Text for R-phrases: see Section 16

Hazard Symbols: XN F



Risk Phrases: 11 20/21/22 68/20/21/22

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Highly flammable. Harmful by inhalation, in contact with skin and if swallowed. Harmful : possible risk of irreversible effects through inhalation, in contact with skin and if swallowed.

Potential Health Effects

Eye: Causes severe eye irritation. May cause painful sensitization to light. May cause chemical conjunctivitis and corneal damage.

Skin: Causes moderate skin irritation. May be absorbed through the skin. May cause cyanosis of the extremities.

Ingestion: May be fatal or cause blindness if swallowed. May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause systemic toxicity with acidosis. 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: Causes respiratory tract irritation. May cause visual impairment and possible permanent blindness. May cause narcotic effects in high concentration. Vapors may cause dizziness or suffocation.

Chronic: May cause reproductive and fetal effects. Laboratory experiments have resulted in mutagenic effects. Animal studies have reported the development of tumors. Prolonged exposure may cause liver, kidney, and heart damage.

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.

Skin: Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

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: Treat symptomatically and supportively. Persons with skin or eye disorders or liver, kidney, chronic respiratory diseases, or central and peripheral nervous system diseases may be at increased risk from exposure to this substance.

Antidote: Ethanol may inhibit methanol metabolism.

Section 5 - Fire Fighting Measures

General Information: Containers can build up pressure if exposed to heat and/or fire. As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors may form an explosive mixture with air. Vapors can travel to a source of ignition and flash back. Will burn if involved in a fire. Flammable Liquid. Can release vapors that form explosive mixtures at temperatures above the flashpoint. Use water spray to keep fire-exposed containers cool. Containers may explode in the heat of a fire. May be ignited by heat, sparks, and flame.

Extinguishing Media: For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. For large fires, use water spray, fog, or alcohol-resistant foam. Use water spray to cool fire-exposed containers. Water may be ineffective. Do NOT use straight streams of water. 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. Use a spark-proof tool. Provide ventilation. A vapor suppressing foam may be used to reduce vapors. Water spray may reduce vapor but may not prevent ignition in closed spaces.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use only in a well-ventilated area. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. 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 ingest or inhale. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.

Storage: Keep away from heat, sparks, and flame. Keep away from sources of ignition. Store in a tightly closed container. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area. Do not store near perchlorates, peroxides, chromic acid or nitric acid.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls:

Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

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 VLE; 1907 mg/m³ VLE

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

Germany: 500 ppm TWA; 960 mg/m³ TWA

Malaysia: 1000 ppm TWA; 1880 mg/m³ TWA

Netherlands: 500 ppm MAC; 1000 mg/m³ MAC

Russia: 1000 mg/m³ TWA

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

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

Germany: 200 ppm TWA; 270 mg/m³ TWA Germany: Skin absorber

Japan: 200 ppm OEL; 260 mg/m³ OEL

Malaysia: 200 ppm TWA; 262 mg/m³ TWA

Netherlands: 200 ppm MAC; 260 mg/m³ MAC

Russia: 5 mg/m³ TWA

Spain: 200 ppm VLA-ED; 266 mg/m³ VLA-ED Spain: 250 ppm VLA-EC; 333 mg/m³ VLA-EC

CAS# 518-51-4:

CAS# 845-10-3:

CAS# 7732-18-5:

CAS# 34722-90-2:

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 protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9 - Physical and Chemical Properties

Physical State: Liquid
Color: dark green to brown
Odor: Not available
pH: Not available
Vapor Pressure: Not available
Viscosity: Not available
Boiling Point: Not available
Freezing/Melting Point: Not available
Autoignition Temperature: Not available.
Flash Point: 12 deg C (53.60 deg F)
Explosion Limits: Lower: 3.3 vol %
Explosion Limits: Upper: 19 vol %
Decomposition Temperature: Not available
Solubility in water: Miscible
Specific Gravity/Density: 0.8
Molecular Formula: Mixture
Molecular Weight: 0

Section 10 - Stability and Reactivity

Chemical Stability: Stable. Stable under normal temperatures and pressures.

Conditions to Avoid: Stable under normal temperatures and pressures., incompatible materials, ignition sources, excess heat, oxidizers.

Incompatibilities with Other Materials Strong oxidizing agents, acids, alkali metals, ammonia, hydrazine, peroxides, sodium, acid anhydrides, calcium hypochlorite, chromyl chloride, nitrosyl perchlorate, bromine pentafluoride, perchloric acid, silver nitrate, mercuric nitrate, potassium tert-butoxide, magnesium perchlorate, acid chlorides, platinum, uranium hexafluoride, silver oxide, iodine heptafluoride, acetyl bromide, disulfuryl difluoride, tetrachlorosilane + water, acetyl chloride, permanganic acid, ruthenium (VIII) oxide, uranyl perchlorate, potassium dioxide.

Hazardous Decomposition Products Carbon monoxide, irritating and toxic fumes and gases, carbon dioxide, formaldehyde.

Hazardous Polymerization Will not occur.

Section 11 - Toxicological Information

RTECS#: CAS# 64-17-5: KQ6300000
CAS# 67-56-1: PC1400000
CAS# 518-51-4: None listed
CAS# 845-10-3: None listed
CAS# 7732-18-5: ZC0110000
CAS# 34722-90-2: None listed

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# 518-51-4:

RTECS:

CAS# 845-10-3:

RTECS:

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

RTECS:

CAS# 34722-90-2:

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.
Phenolphthalein - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Methyl Red, sodium salt - 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.
Bromothymol blue - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

Other: Standard Draize Test(Skin, rabbit) = 20 mg/24H (Moderate) Standard Draize Test:
Administration into the eye (rabbit) = 500 mg (Severe).

Section 12 - Ecological Information

Ecotoxicity: Fish: Rainbow trout: LC50 = 12900-15300 mg/L; 96 Hr; Flow-through @ 24-24.3°C
Fish: Rainbow trout: LC50 = 11200 mg/L; 24 Hr; Fingerling (Unspecified)
Bacteria: Phytobacterium phosphoreum: EC50 = 34900 mg/L; 5-30 min; Microtox test

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

Section 15 - Regulatory Information

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: XN F

Risk Phrases:

R 11 Highly flammable.

R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.

R 68/20/21/22 Harmful : possible risk of irreversible effects through inhalation, in contact with skin and if swallowed.

Safety Phrases:

- S 7 Keep container tightly closed.
- S 9 Keep container in a well-ventilated place.
- S 16 Keep away from sources of ignition - No smoking.
- S 33 Take precautionary measures against static discharges.

WGK (Water Danger/Protection)

- CAS# 64-17-5: 0
- CAS# 67-56-1: 1
- CAS# 518-51-4: 1
- CAS# 845-10-3: Not available
- CAS# 7732-18-5: Not available
- CAS# 34722-90-2: 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# 518-51-4 is listed on Canada's DSL List
- CAS# 845-10-3 is listed on Canada's DSL List
- CAS# 7732-18-5 is listed on Canada's DSL List
- CAS# 34722-90-2 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# 518-51-4 is listed on the TSCA Inventory.
- CAS# 845-10-3 is listed on the TSCA Inventory.
- CAS# 7732-18-5 is listed on the TSCA Inventory.
- CAS# 34722-90-2 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 39/23/24/25 Toxic : danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.

MSDS Creation Date: 7/30/1999

Revision #4 Date 10/03/2005

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