

Section I: Product Identification and Use

Manufacturer/Supplier: WARD'S Natural Science Establishment  
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 P. O. Box 92912  
 Rochester, New York 14692-9012

MSDS #694.5  
 Phone: 585-359-2502 - 0800-1700 EST  
 Emergency Phone: In U.S. (Chemtrec) 1-800-424-9300

product Name: WARD-SAFE Packing Fluid and holding solution  
 Synonyms/Trade Names: Proprietary holding fluid for preserved materials  
 Chemical Family: Mixture  
 Product Size: Variable: fluid-pack, damp-pack. | 39W1693 3.8 liters; 39W1694 19 liters; 55-gallon (bulk)  
 CERCLA RATINGS (Scale 0-3): HEALTH = 1, FIRE = 0, REACTIVITY = 0, PERSISTENCE = 0  
 NFPA RATINGS (Scale 0-4): HEALTH = 1, FIRE = 0, REACTIVITY = 0  
 CAS NUMBER: (Mixture)

SECTION II: INGREDIENTS AND HAZARDS

Substances listed are those identified as present at a concentration of 1% or greater, or 0.1% if the substance is a potential carcinogen cited in OSHA Hazard Communication standard. Where proprietary ingredient shows, the identity of this substance may be made available as provided by Provincial or Federal regulation (as provided in 29CFR 1910.1200 (l). )

INGREDIENTS	%	CAS #	HAZARD DATA
Methyl Alcohol RETEC:PC1400000	2.87	67-56-1	OSHA:200ppm (skin)ACGIH :200ppm
1,2 Propanediol RTEC :TY2000000	1.44	57-55-6	OSHA/ACGIH :Skin (human) 10%/2d IRT
Other (proprietary ingredient)	0.68	-----	N/A
Water	95.01	7732-18-5	N/A

NOTE:

Variable traces of original specimen fixatives may have leached from the specimen(s) into this holding fluid and may be present in this holding fluid

Formalin@	<1.00%	50-00-0	OSHA/ACGIH 0.75ppm RETEC LP8925000
Phenol	<1.00%	108-95-2	OSHA/ACGIH 5ppm (skin) RETEC SJ332500
Deep specimen tissues are saturated with the original fixative which may contain the following components (refer to product label for constituent):			
Formalin@	<3.00%	50-00-0	OSHA/ACGIH 0.75ppm RETEC LP8925000
Phenol	<3.00%	108-95-2	OSHA/ACGIH 5ppm (skin) RETEC SJ3325000
PC1400000			
1,2 Ethanediol	<5.00%	107-21-1	Not assigned
Methyl Alcohol	<1.00%	67-56-1	OSHA/ACGIH 200ppm RETEC PC1400000
Ketone	<7.00%	Proprietary	Proprietary Information
Denat. Ethyl Alc.	<5.00%	64-17-5	OSHA/ACGIH 1000ppm RETEC KQ6300000
Acetic Acid	<2.00%	64-19-7	OSHA/ACGIH 10ppm RETEC AF1225000

Traces of the above fixative constituents may be present in holding fluid-usually in 'de minimus' amounts.see SECTION VI. Surfactants, fungistatic agents, esters, odorants, and conditioners present in concentrations <0.9%

SECTION III: PHYSICAL DATA

APPEARANCE AND ODOR: Clear to slightly yellowish, mobile fluid; slightly alcoholic/banana-almond odor.  
 SINGLE SUBSTANCE: ( ) MIXTURE: (XXX)  
 MELTING POINT (C): Not applicable  
 BOILING POINT (C): >100 (210 F)  
 VAPOR PRESSURE (mm Hg): <1.0  
 EVAPORATION RATE: (n-butyl acetate = 1): <1.0  
 VOLATILE FRACTION BY WEIGHT: Approximately 3%  
 SPECIFIC GRAVITY (H2O=1): <1.0  
 SOLUBILITY IN WATER (By weight): Complete  
 ODOR THRESHOLD: This fluid may contain variable trace amounts of formalin-off-gasing below PEL (0.75ppm).

SECTION IV: FIRE AND EXPLOSION DATA

FLAMMABLE MATERIAL: YES ( ) NO (XXX)  
 FIRE AND EXPLOSION HAZARD SUMMARY: Not a hazard when exposed to heat or flame.  
 FLASH POINT: Non-combustible material  
 AUTO IGNITION TEMPERATURE: Non-combustible material  
 LOWER EXPLOSION LIMIT: Non-combustible material  
 UPPER EXPLOSION LIMIT: Non-combustible material  
 EXTINGUISHING MEDIA: Use best for surrounding fire conditions.  
 FIREFIGHTING: Use best for surrounding fire-fighting conditions.

SECTION V: REACTIVITY DATA

STABILITY: Normally stable to air, water and light.  
 INCOMPATIBILITY: Avoid strong oxidizing agents.  
 CORROSIVITY: Not corrosive.  
 HAZARDOUS DECOMPOSITION PRODUCTS: Upon thermal decomposition: carbon dioxide; carbon monoxide; water vapor.  
 HAZARDOUS POLYMERIZATION: Will not occur.  
 CONDITIONS TO AVOID: Strong oxidizing materials.

SECTION VI: TOXICITY AND HEALTH HAZARD DATA

EXPOSURE LIMITS: Methyl Alcohol: ACGIH (TLV-TWA): 200ppm (260 mg/m3) - skin MACGIH (TLV-STEL): 250ppm (310 mg/m3)-- skin

1,2 Propanediol: LD50 (rat oral) 20mg/kg; I (skin H) 500mg/kg  
EXPOSURE LIMITS: Repeated Exposure: WARD-SAFE is not a primary skin/eye irritant and not a skin sensitizer in accordance with guidelines of the Consumer Products Safety Commission.

Overexposure: Repeated overexposure may cause transient irritation and/or dermatitis in hypersensitive individuals. If this occurs discontinue use. Contact physician.

NOTE: Variable trace amounts of original fixatives: may be present Formalin ---> OSHA (PEL): 0.75ppm STEL);; 2ppm (15 min.) Phenol ---> OSHA/ACGIH 5ppm (skin)

Highest trace ingredients (0.44%) ingestion: LD50 >2000mg/kg and TC10 428mg/kg (human); total percent 'other' = 0.7% (v/v)

#### SIGNIFICANT DATA RELEVANT TO HUMAN HEALTH HAZARD EVALUATION:

WARD-SAFE contains 2.87% METHYL ALCOHOL. Acute ingestion exposure may have symptoms delayed 12 - 18 hours and may include: coughing, headache, dullness, vertigo, anorexia, weakness, fatigue, followed by violent pain in the back, abdomen, or extremities, sweating, loss of muscular coordination. Blurred or dimmed vision with optic neuritis may result. Fatal dose (100% MA) is 100-250ml. Chronic ingestive exposure may cause visual impairment or blindness.

© Hazard Communication Standard: As required by 29 CFR 1910.1200(F), formalin present in body tissues as the primary fixative is identified by OSHA as "a potential human carcinogen". The specific hazards that the user should be aware are: irritation and sensitization of skin and respiratory system, eye and throat irritation, and acute toxicity. Use of dissection materials containing formalin (formaldehyde) as the primary fixative are not expected to off-gas formaldehyde in excess of PEL.

#### SECTION VII: FIRST AID MEASURES

SKIN CONTACT: PROLONGED DIRECT SKIN CONTACT MAY CAUSE IRRITATION IN HYPERSENSITIVE INDIVIDUALS. Remove any contaminated clothing. Wash affected area with soap and water. Contact physician if irritation or redness develops.

SKIN ABSORPTION: PROLONGED DIRECT EXPOSURE MAY RESULT IN ABSORPTION OF TRACE AMOUNTS OF ORIGINAL FIXATIVE (Phenol).- if present. Refer to product label for constituent. Wash affected area w/ soap & water. Contact physician if irritation or redness persists.

EYE CONTACT: DIRECT EYE CONTACT MAY CAUSE IRRITATION due to possible presence of trace amounts of original fixative agents. Rinse for 15 minutes (including under eye lids) with running water. Contact physician if irritation persists.

MOUTH CONTACT: MAY BE TOXIC IF SWALLOWED. MAY CAUSE IRRITATION. Flush mouth with copious amounts of water for at least 15 minutes. VICTIM SHOULD NOT SWALLOW ANY FLUSH MATERIAL. Contact physician for monitoring of toxic ingestion effects.

INGESTION: INDUCE VOMITING! If conscious, give 8-10 oz (240-300ml) water to dilute material in stomach. Induce vomiting by gastric lavage at once. Repeat. Have victim lean forward to minimize aspiration. Contact physician immediately.

INHALATION: REMOVE TO OUTSIDE AIR if signs or symptoms of overexposure are noted. Contact physician if symptoms do not subside within 30 minutes. Over-exposure symptoms may include: respiratory and/or mucous membrane irritation.

Variable trace amounts of original fixative may be present - off gasing of trace formaldehyde gas possible. NOTE TO PHYSICIAN: This packing fluid may contain variable trace amounts of original fixative agents: formalin and/or phenol.

#### SECTION VIII: SPILL, LEAK AND DISPOSAL PROCEDURES

PERSONAL PROTECTION EQUIPMENT: Eye goggles, nitrile gloves, apron, sleeve protector.

OTHER SAFETY EQUIPMENT: Eyewash station within 15-second walking distance of dissection activities.

SMALL SPILLS: Cover spill area with sorbent material. Wipe up; dispose as inert solid waste. Flush area with water.

LARGE SPILLS: Cover spill area with sorbent material. Wipe up; dispose as inert solid waste. Flush area with water.

LEAKS: Transfer fluid (along with any dissection specimens) to another container. Rinse container with water.

DISPOSAL: WARD-SAFE fluid may be discharged to a sanitary sewer (if local regulations permit). Specimens in WARD-SAFE may be disposed of as inert solid waste if they are damp (not wet) Discharge treatment and disposal may be subject to Federal, State/Provincial and local regulations-SEE SECTION X.

#### SECTION IX: SPECIAL PROTECTION INFORMATION

VENTILATION: Local exhaust ventilation is recommended when working with dissection material in this preservation solution due to the presence of variable trace amounts of formalin which may be present

RESPIRATORY PROTECTION: Not generally required. Monitoring of non-ventilated work areas for PEL recommended. (For formaldehyde -- use passive badge dosimeters available from WARD'S Natural Science Est. I

SKIN PROTECTION: (EXCELLENT/GOOD): Butyl rubber, nitrile rubber. (GOOD/FAIR): natural rubber, neoprene rubber used by dissectors or users of this solution. Apron/lab coat advised.

EYE PROTECTION: Splash-proof chemical safety goggles worn by dissectors or users of this solution. DO NOT wear contact lenses during use of this material or during dissection activities.

OTHER PROTECTIVE EQUIPMENT: Eye wash stations in close proximity., within 15-second walk.

#### SECTION X: REGULATORY GUIDELINES

DOT CLASSIFICATION: Non-regulated

HAZARD CLASSIFICATION: General Storage

RIGHT-TO-KNOW LABELING: WARD-SAFE Holding F luid Hazardous components: Methyl alcohol 2.87% v/v, CAS# 67-56-1

Safety Equipment: Nitrile/butyl rubber gloves, splash-proof eye goggles, apron.

CERCLA SECTION 103: 5000 pounds methyl alcohol RO.

OSHA FORMALDEHYDE STANDARD: WARD-SAFE contains no formalin or phenol. Leaching of variable trace amounts of formalin and/or phenol is possible. These amounts are not expected to exceed 1.0% (formalin) and/or 0.9% (phenol)-see SECTION VI.

SECTION XI: SPECIAL HANDLING PRECAUTIONS/COMMENTS

To promote safe use and handling of this product (both dissection specimens and this preserving fluid), each user of this product should read this MSDS and observe the following: • Use in well-ventilated area(s), under proper supervision of a qualified individual knowledgeable in all aspects of dissection laboratory safety. • Avoid eye and skin contact. • Do not ingest. • During dissection activities wear proper personal protection equipment (nitrile gloves; ANSI-approved chemical safety goggles; apron or smock), have eyewash stations in close proximity (within a 15-second walk). • Provide for adequate ventilation to assure PEL. ( See Specimen Use & Storage, below). • The wearing of protective outer clothing (apron, smock, or lab coat, sleeve protectors) is recommended.

SPECIMEN USE AND STORAGE:

- Avoid freezing; freezing promotes the formation of paraformaldehyde.
- Flush all internal body cavities in running water to remove any accumulated fixative prior to dissection.
- Apply Humectant Spray to surfaces of dissection specimens to reduce mold and to keep body tissues moist.
- Return dissected specimens to WARD-SAFE (immersion) or to sealed plastic bags with specimens wrapped in cloth or paper toweling moistened in WARD-SAFE.

DISSECTION HINTS:

- NEVER make an initial body cavity incision without wearing protective eye wear. A stream of fixative may be ejected into the eye.
- Desiccated specimen tissues can be restored by spraying with Humectant spray.
- In case of mold, apply WARD'S Preserved Specimen Conditioner or 70% isopropyl alcohol to affected area.

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