

SECTION I: PRODUCT IDENTIFICATION AND USE**MANUFACTURER/SUPPLIER:**

WARD'S Natural Science Establishment, Inc.
5100 West Henrietta Road
Rochester, New York 14692-9012

PHONE: 716-359-2502 / 1700 EST

MSDS# 42

CONTACT PERSON: Kenneth G Rainis

EMERGENCY PHONE: (US) Chemtrec 1-800-424-9300

(CANADA) Canutec 1-613-996-6666

PRODUCT NAME:

WARD-fix (tissue fixative)

SYNONYMS/TRADE NAMES:

Proprietary fixative for dissection specimens

CHEMICAL FAMILY:

Mixture

CATALOG NUMBER:

39W1695, 39W1696

PRODUCT SIZE:

3.8L, 19L

CERCLA RATINGS:(Scale 0-3)

HEALTH = 2 FIRE = 0 REACTIVITY = 1 PERSISTENCE = 1

NFPA RATINGS: (Scale 0-4)

HEALTH = 2 FIRE = 0 REACTIVITY = 1

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 in 29 CFR 1910.1200 (1).

INGREDIENTS	%	CAS #	HAZARD DATA
Ketone †	3.5-7.0	proprietary	OSHA: 750ppm ACGIH: 750ppm, 1000ppm (STEL) RETEC: Proprietary
Formalin Δ	1.5-4.3	50-00-0	OSHA/ACGIH: 0.75ppm (PEL), 2ppm9STEL) "Action Level" Medical monitoring at 0.5ppm. LP89250001.
1, 2 Propanediol	0-2.5	57-55-6	RTEC: 200ppm (skin) OSHA/ACGIH: 200ppm (skin) RETEC: TY2000000
Other †	0.02-1.28*	-----	
Water	89.15-90.06	7732-185	N/A

NOTE:

* See section X

Δ see SECTION V IRC- listed chemical.

† Surfactants, fungistatic agents, esters, odorants, and conditioners. Proprietary information—see SECTION VI.

SECTION III: PHYSICAL DATA**APPEARANCE AND ODOR:**

Yellow mobile fluid: 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 3.7%

SPECIFIC GRAVITY (H2O = 1):

<1.0

SOLUBILITY IN WATER (By weight):

Complete

ODOR THRESHOLD:

(KETONE) Odor threshold 100 - 150ppm.

(FORMALIN) Odor threshold below PEL of 0.75ppm. OLFACTORY DETECTION ALONE CANNOT BE USED TO ASSURE COMPLIANCE WITH PEL.

SECTION IV: FIRE AND EXPLOSION DATA

FLAMMABLE MATERIAL: YES () NO (XXX)

FIRE AND EXPLOSION HAZARD SUMMARY:

In fire, may release formaldehyde, methyl alcohol and Ketone vapors.

FLASH POINT:

>180 °F/82 °C

AUTO IGNITION TEMPERATURE:

>932 °F/500°C

LOWER EXPLOSION LIMIT:

Not-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 such as: nitrates, perchlorates or concentrated sulfuric, nitric or acetic acids. Materials may be reactive with potassium t-butoxide. **AVOID ANY CONTACT WITH HYDROCHLORIC ACID.** Resultant product may contain BIS-chloromethyl ether, an OSHA-regulated carcinogen.

HAZARDOUS DECOMPOSITION PRODUCTS:

Formaldehyde gas, carbon monoxide and carbon dioxide.

HAZARDOUS POLYMERIZATION:

Non-hazardous polymerization may occur at low temperatures, forming paraformaldehyde, a white solid.

CONDITIONS TO AVOID:

Strong oxidizing agents; excessive heating of material.

SECTION VI: TOXICITY AND HEALTH HAZARD DATA**EXPOSURE LIMITS:**

Ketone:
Formalin

OSHA: (PEL - 750ppm) ACGIH: (TWA 750ppm) (STEL 1000ppm) LD50 (rat, oral): 9.75g/kg.
OSHA: 0.75ppm (PEL)/2ppm (15 min. STEL) LC50 (rat, inhalation): 478ppm/LD50 (rat, oral) 500 mg/kg.
LD50 (rabbit, skin): 270mg/kg.

1,2 Propanediol

OSHA/ACGIH (TLV-TWA): 200ppm (260 mg/m3)skin

† Trace Ingredients

(highest 0.23%) ACGIH/OSHA 200ppm;262mg/m3)STEL 250ppm

EXPOSURE LIMITS:

Repeated Exposure
or
Overexposure

WARD-fix is a fixative, avoid all skin/eye contact! Avoid prolonged breathing of vapors which may cause mucous membrane irritation and other short-term effects. May cause defatting of skin, irritation, dermatitis or allergic reaction as well as mucous membrane irritation and other ill effects. May cause tanning of skin.

SIGNIFICANT DATA RELEVANT TO HUMAN HEALTH HAZARD EVALUATION: Material may be harmful if inhaled or absorbed through skin - excessive and/or prolonged contact may cause defatting and/or tanning of skin. Causes skin, nose, eye, upper respiratory tract irritation. May cause allergic reaction in hypersensitive individuals.

FIRST AID/HAZARD:

SKIN CONTACT: PROLONGED SKIN CONTACT MAY CAUSE TANNING AND IRRITATION. Remove any contaminated clothing, wash affected areas with lukewarm water for 20 minutes. Contact physician if irritation or redness develops.

SKIN ABSORPTION: PROLONGED, DIRECT CONTACT MAY RESULT IN ALLERGIC REACTION OR "TANNING" OF SKIN OR SKIN TISSUE DEFATTING. Remove any contaminated clothing or personal articles that have come in contact with this material. Decontaminate or discard as appropriate.

EYE CONTACT: PROLONGED DIRECT EYE CONTACT MAY CAUSE IRRITATION. Immediately flush eye (including under eyelids) for at least 20 minutes. Contact physician immediately.

MOUTH CONTACT: SMALL AMOUNTS MAY CAUSE IRRITATION AND NUMBING OF MUCOSA. Flush mouth with copious amount of water for at least 20 minutes. DO NOT ALLOW VICTIM TO SWALLOW ANY MATERIAL. Contact physician.

INGESTION: TOXIC. If conscious, give large amounts of milk or water. INDUCE VOMITING - having victim lean forward to reduce risk of aspiration. Contact physician immediately.

INHALATION: MAY PRODUCE SHORT-TERM UPPER RESPIRATORY SYSTEM IRRITATION OR POSSIBLE ALLERGIC REACTION. Remove to fresh air; monitor for exposure effects. Contact physician if symptoms persist. If breathing has stopped administer CPR. Contact physician immediately.

NOTES TO PHYSICIAN: Proprietary ingredients have low to moderate toxicity and represent 0.23- 0.02% (v/v) of this formulation. Disclosure as provided in 29 CFR 1910.1200 (1).

SECTION VIII: SPILL, LEAK AND DISPOSAL PROCEDURES

PERSONAL PROTECTION EQUIPMENT: Splash-proof eye goggles, nitrile gloves, apron.

OTHER PROTECTIVE EQUIPMENT: Eyewash station within a 15-second walk from dissection activities.

SMALL SPILLS: Cover spill area with sorbent material. Wipe up. Evaporate saturated sorbent material to dryness in chemical fume hood, or outdoors; discard dry material as inert solid waste.

LARGE SPILLS: Restrict access; provide good ventilation. Cover spill with sorbent material. Place in approved container for later incineration or evaporation outdoors, or in chemical fume hood. Flush spill area with water.

LEAKS: In a well-ventilated location, transfer material to another container. Rinse original container with copious amounts of water. Rinseate may be discharged to sanitary sewer if local regulations permit.

DISPOSAL: Small amounts of this material may be discharged to a sanitary sewer (if local regulations permit). Saturated sorbent material may be evaporated to dryness either outdoors or in a certified chemical fume hood, then discarded as an inert solid waste. Discharge, treatment and disposal may be subject to Federal, State/Provincial and local regulations.

SECTION IX: SPECIAL PROTECTION INFORMATION

VENTILATION: Local exhaust ventilation recommended to assure formaldehyde PEL compliance.

RESPIRATORY PROTECTION: Monitor for STEL/PEL compliance. Use NIOSH approved formaldehyde vapor respirator if PEL or STEL is expected to be exceeded.

SKIN PROTECTION: (EXCELLENT/GOOD): Nitrile or butyl rubber gloves. (GOOD/FAIR): Natural rubber, neoprene rubber when working with this material, or with dissection specimens fixed in this material.

EYE PROTECTION: Splash-proof chemical safety goggles. Wear NO CONTACT LENSES during use of this material, or during dissection activities.

OTHER PROTECTIVE EQUIPMENT: Eye-wash station in close proximity; sleeve protectors recommended during dissection activities.

SECTION X: REGULATORY GUIDELINES

DOT CLASSIFICATION: Non-regulated.

HAZARD CLASSIFICATION: IRRITANT.

OTHER REGULATORY GUIDELINES: CALIFORNIA PROPOSITION #65: WARNING: This product contains a chemical known to the State of California to cause cancer.

RIGHT-TO-KNOW LABELING: WARD-fix

IRRITANT

Hazardous Components (v/v):

Ketone () CAS#067-641

Formalin* () CAS#50-00-0

1,2 Propanediol () CAS#57-55-6

Label according to 'NOTES'—SECTION II.

* IARC-listed chemical.

Safety Equipment:

Nitrile/butyl rubber gloves, splash-proof chemical goggles, sleeve protectors.

SECTION XI: SPECIAL HANDLING PRECAUTIONS/COMMENTS

To promote safe use and handling of this product each customer or recipient 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 activities wear proper personal protection equipment; have eyewash stations in close proximity. The wearing of an apron, smock, or lab coat as well as sleeve protectors is recommended. Monitoring of workplace atmosphere may be required to assure compliance with OSHA PEL formaldehyde levels. Avoid prolonged breathing of vapors.

PRODUCT USE: Use without dilution for immersion and/or pressure embalming fixation of zoological specimens.

PRODUCT STORAGE: Store in original container, in a cool, dry place away from heat and oxidizing agents. Do not allow hydrochloric acid to come in contact with this product -- resultant mixture can form BIS-Chloromethyl ether, an OSHA-regulated carcinogen.

THE ABOVE INFORMATION IS BELIEVED TO BE ACCURATE AND REPRESENTS THE BEST INFORMATION CURRENTLY AVAILABLE TO US. HOWEVER, WE MAKE NO WARRANTY OR MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, WITH RESPECT TO SUCH INFORMATION, AND WE ASSUME NO LIABILITY RESULTING FROM SUCH USE. USERS SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE SUITABILITY OF THIS INFORMATION FOR THEIR PARTICULAR PURPOSES.

WARDS NATURAL SCIENCE ESTABLISHMENT - MATERIAL SAFETY DATA SHEET

SECTION I: PRODUCT IDENTIFICATION AND USE

MANUFACTURER/SUPPLIER:

MSDS #694.5

WARD'S Natural Science Establishment
5100 West Henrietta Road
P. O. Box 92912
Rochester, New York 14692-9012

PHONE: 716-359-2502 - 0800-1700 EST
EMERGENCY* PHONE: In U.S. (Chemtrec) 1-800-424-9300
In Canada (Canutec) 1-613-996-6666

PRODUCT NAME:
SYNONYMS/TRADE NAMES:
CHEMICAL FAMILY:
PRODUCT SIZE:
CERCLA RATINGS (Scale 0-3):
NFPA RATINGS (Scale 0-4):
CAS NUMBER:

WARD-SAFE Packing Fluid and holding solution
Proprietary holding fluid for preserved materials
Mixture
Variable: fluid-pack, damp-pack. | 39W1693 3.8 liters; 39W1694 19 liters; 55-gallon (bulk)
HEALTH = 1, FIRE = 0, REACTIVITY = 0, PERSISTENCE = 0
HEALTH = 1, FIRE = 0, REACTIVITY = 0
(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 (f).)

INGREDIENTS	%	CAS #	HAZARD DATA
Methyl Alcohol	2.87	67-56-1	OSHA: 200ppm (skin) ACGIH: 200ppm RETEC: PC1400000
1,2 Propanediol	1.44	57-55-6	OSHA/ACGIH: Skin (human) 10%/2d IRT RETEC: TY2000000
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 ^Δ	<1.00%	50-00-0	OSHA/ACGIH 0.75ppm RETEC LP8925000
Phenol	<1.00%	108-95-2	OSHA/ACGIH 5ppm (skin) RETEC SJ3325000
Deep specimen tissues are saturated with the original fixative which may contain the following components (refer to product label for constituent):			
Formalin ^Δ	<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 K06300000
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.

^Δ see SECTION VI.

[†] Surfactants, fungistatic agents, esters, odorants, and conditioners present in concentrations <0.9%

SECTION III: PHYSICAL DATA

APPEARANCE AND ODOR:
SINGLE SUBSTANCE: () **MIXTURE:** (XXX)
MELTING POINT (C):
BOILING POINT (C):
VAPOR PRESSURE (mm Hg):
EVAPORATION RATE: (n-butyl acetate = 1):
VOLATILE FRACTION BY WEIGHT:
SPECIFIC GRAVITY(H₂O=1):
SOLUBILITY IN WATER (By weight):
ODOR THRESHOLD:

Clear to slightly yellowish, mobile fluid; slightly alcoholic/banana-almond odor.
Not applicable
>100 (210 F)
<1.0
<1.0
Approximately 3%
<1.0
Complete
This fluid may contain variable trace amounts of formalin—off-gasing below PEL (0.75ppm).

SECTION IV: FIRE AND EXPLOSION DATA

FLAMMABLE MATERIAL:
FIRE AND EXPLOSION HAZARD SUMMARY:
FLASH POINT:
AUTO IGNITION TEMPERATURE:
LOWER EXPLOSION LIMIT:
UPPER EXPLOSION LIMIT:
EXTINGUISHING MEDIA:
FIREFIGHTING:

YES () NO (XXX)
Not a hazard when exposed to heat or flame.
Non-combustible material
Non-combustible material
Non-combustible material
Non-combustible material
Use best for surrounding fire conditions.
Use best for surrounding fire-fighting conditions.

SECTION V: REACTIVITY DATA

STABILITY:
INCOMPATIBILITY:
CORROSIVITY:
HAZARDOUS DECOMPOSITION PRODUCTS:
HAZARDOUS POLYMERIZATION:
CONDITIONS TO AVOID:

Normally stable to air, water and light.
Avoid strong oxidizing agents.
Not corrosive.
Upon thermal decomposition: carbon dioxide; carbon monoxide; water vapor.
Will not occur.
Strong oxidizing materials.

SECTION VI: TOXICITY AND HEALTH HAZARD DATA

EXPOSURE LIMITS:	Methyl Alcohol:	ACGIH (TLV-TWA): 200ppm (260 mg/m ³) -- skin ACGIH (TLV-STEL): 250ppm (310 mg/m ³)-- skin
	1,2 Propanediol:	LD50 (rat oral) 20mg/kg; 1 (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. Repeated overexposure may cause transient irritation and/or dermatitis in hypersensitive individuals. If this occurs discontinue use. Contact physician.
	Overexposure:	Formalin --> OSHA (PEL): 0.75ppm STEL: 2ppm (15 min.) Phenol --> OSHA/ACGIH 5ppm (skin)

NOTE: Variable trace amounts of original fixatives may be present

[†] 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.

Δ 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 of 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

FIRST AID:

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.

NOTE TO PHYSICIAN: Variable trace amounts of original fixative may be present - off gassing of trace formaldehyde gas possible. 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: Neither the specimens nor this holding fluid are considered a hazardous waste by the EPA. 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. Inc.

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 fluid
Hazardous components: Methyl alcohol 2.87% v/v, CAS# 67-56-1
Safety Equipment: Nitrile/butyl rubber gloves, splash-proof eye goggles, apron.
5000 pounds methyl alcohol RO.

CERCLA SECTION 103: 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.

OSHA FORMALDEHYDE STANDARD:

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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REV # 4.5

DATE: REVISED: 11-6-98

WARD'S NATURAL SCIENCE ESTABLISHMENT - MATERIAL SAFETY DATA SHEET**SECTION I: PRODUCT IDENTIFICATION AND USE****MANUFACTURER/SUPPLIER:**

WARD'S Natural Science Establishment
5100 West Henrietta Road
Rochester, New York 14692-9012

PHONE: 716-359-2502- 0800 / 1700 EST
CONTACT PERSON: Kenneth G. Rainis
EMERGENCY PHONE: In U.S. (Chemtrec) 1-800-424-9300
In Canada (Canutec) 1-613-996-6666

MSDS # 153.5

PRODUCT NAME:**Dilute Formalin Fixative****SYNONYMS/TRADE NAMES:**

General-purpose fixative for zoological specimens.

CHEMICAL FAMILY:

Mixture

CATALOG NUMBER:

68 & 69W Series PM specimen products

PRODUCT SIZE:

Internal Use only—not for resale

CERCLA RATINGS (Scale 0-3):**HEALTH = 2 FIRE = 0 REACTIVITY = 1 PERSISTENCE = 1****NFPA RATINGS (Scale 0-4)****HEALTH = 2 FIRE = 0 REACTIVITY = 1****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 in 29 CFR 1910.1200 (1).

INGREDIENTS	%	CAS #	HAZARD DATA
Formalin ^Δ	1.0 - 4.00	50-00-0	OSHA/ACGIH: 0.75ppm (PEL), 2PPM (STEL) "Action Level" at 0.5ppm; Medical monitoring required. LP8925000
Water	99 - 96.0	7732-185	RTEC: N/A

NOTE:

^Δ Range of formalin as a fixative in body tissues is 1-4% (vv) and differs by specimen type; see SECTION VI for additional information.

SECTION III: PHYSICAL DATA**APPEARANCE AND ODOR:**

Clear solution; pungent odor.

SINGLE SUBSTANCE: () **MIXTURE:** (XXX)**MELTING POINT (C):**

Not applicable.

BOILING POINT (C):

>100 (210F)

VAPOR PRESSURE (mm Hg):

>1.0

EVAPORATION RATE (n-butyl acetate = 1):

<1.0

VOLATILE FRACTION BY WEIGHT:

Variable: 1-4% b(w/v)%

SPECIFIC GRAVITY (H₂O = 1):

<1.0

SOLUBILITY IN WATER (By weight):

Complete

ODOR THRESHOLD:

(FORMALIN) Odor threshold below PEL of 0.75ppm.
OLFACTORY DETECTION ALONE CANNOT BE USED TO ASSURE
COMPLIANCE WITH PEL.

SECTION IV: FIRE AND EXPLOSION DATA**FLAMMABLE MATERIAL:** YES () NO (XXX)**FIRE AND EXPLOSION HAZARD SUMMARY:**

Not a fire hazard when exposed to heat or flame.

FLASH POINT:

>180F/82C

AUTO IGNITION TEMPERATURE:

>932F/500C

LOWER EXPLOSION LIMIT:

Not-combustible material

UPPER EXPLOSION LIMIT:

Non-combustible material

EXTINGUISHING MEDIA:

Use best for surrounding fire conditions.

FIRE FIGHTING:

Use best for surrounding fire-fighting conditions.

SECTION V: REACTIVITY DATA**STABILITY:**

Normally stable to air, water and light.

INCOMPATIBILITY:

Avoid strong oxidizing agents such as: nitrates, perchlorates or concentrated sulfuric, nitric or acetic acids. Materials may be reactive with potassium t-butoxide. **AVOID ANY CONTACT WITH HYDROCHLORIC ACID.** Resultant product may contain BIS-chloromethyl ether, an OSHA-regulated carcinogen.

HAZARDOUS DECOMPOSITION PRODUCTS:

Formaldehyde gas, carbon monoxide and carbon dioxide.

HAZARDOUS POLYMERIZATION:

Non-hazardous polymerization may occur at low temperatures, forming paraformaldehyde, a white solid.

CONDITIONS TO AVOID:

Strong oxidizing agents; excessive heating of material.

SECTION VI: TOXICITY AND HEALTH HAZARD DATA**EXPOSURE LIMITS:** Formalin

OSHA: 0.75ppm (PEL)/2ppm (15 min. STEL) LC50 (rat, inhalation): 478ppm/LD50 (rat, oral) 500 mg/kg LD50 (rabbit, skin): 270mg/kg.

EXPOSURE LIMITS: Repeated Exposure:

Dilute Formalin is a fixative, avoid all skin/eye contact! Avoid prolonged breathing of vapors which may cause mucous membrane irritation and other short-term effects. Skin contact may cause irritation and/or a transient dermatitis or other allergic type reactions in hyper-sensitive individuals. Off-gassing of vapors may cause transient irritation (watering) to eyes and irritation to mucous membrane surfaces. CHRONIC EXPOSURE: (Skin) may cause irritation and accompanying contact dermatitis in addition to absorptive irritation of the eyes and mucous membranes or other allergic reaction in hypersensitive individuals.

Overexposure:

May cause defatting of skin, irritation, dermatitis as well as mucous membrane irritation, ill effects or allergic reaction in hypersensitive individuals. May cause tanning of skin.

SIGNIFICANT DATA RELEVANT TO HUMAN HEALTH HAZARD EVALUATION: Material is harmful if inhaled or ingested. Avoid prolonged skin contact. Prolonged contact causes defatting and/or tanning of skin. Causes skin, nose, eye, upper respiratory tract irritation.

^Δ 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

FIRST AID/HAZARD:

SKIN CONTACT:

PROLONGED SKIN CONTACT MAY CAUSE TANNING, DERMITIS, IRRITATION AND/OR ALLERGIC REACTION IN HYPERSENSITIVE INDIVIDUALS. Remove any contaminated clothing, wash affected areas with lukewarm water for 20 minutes. Contact physician if irritation or redness develops.

SKIN ABSORPTION:

PROLONGED, DIRECT CONTACT MAY RESULT IN TANNING, DERMATITIS OR SKIN IRRITATION IN HYPERSENSITIVE INDIVIDUALS. Avoid skin contact. Remove any contaminated clothing or personal articles that have come in contact with this material. Decontaminate or discard as appropriate.

EYE CONTACT:

PROLONGED DIRECT EYE CONTACT MAY CAUSE IRRITATION. Immediately flush eye (including under eyelids) for at least 20 minutes. Contact physician immediately.

MOUTH CONTACT:

SMALL AMOUNTS MAY CAUSE IRRITATION AND NUMBING OF MUCOSA. Flush mouth with copious amounts of water for at least 20 minutes. **DO NOT ALLOW VICTIM TO SWALLOW ANY MATERIAL.** Contact physician.

INGESTION:

TOXIC. INDUCE VOMITING If conscious, give up to three glasses of milk or water (8-10oz (240-300mL)). Induce vomiting by gastric lavage at once! Contact physician immediately.

INHALATION:

MAY PRODUCE SHORT-TERM UPPER RESPIRATORY SYSTEM IRRITATION AND/OR ALLERGIC REACTION IN HYPERSENSITIVE INDIVIDUALS. Remove to fresh air. If breathing has stopped, administer CPR. Contact physician immediately. off-gassing of small amounts of formaldehyde gas possible. Sensory threshold below PEL. If irritating effects are noticed: remove to fresh air. If symptoms persist (>30 minutes); contact physician.

SECTION VIII: SPILL, LEAK AND DISPOSAL PROCEDURES

PERSONAL PROTECTION EQUIPMENT:

OTHER PROTECTIVE EQUIPMENT

SMALL SPILLS:

Splash-proof eye goggles, nitrile gloves, apron; sleeve protectors. Eyewash station within a 15-second walk from dissection activities. Cover spill area with sorbent material. Wipe up. Evaporate saturated sorbent material to dryness in chemical fume hood, or outdoors; discard dry material as inert solid waste.

DISPOSAL:

Small amounts of this material may be discharged to a sanitary sewer (if local regulations permit). Saturated sorbent material may be evaporated to dryness either outdoors or in a certified chemical fume hood, then discarded as an inert solid waste. Discharge, treatment and disposal may be subject to Federal, State/Provincial and local regulations.

Overall fixative volume in saturated tissues is small. Tissues saturated with this material are not considered to be hazardous waste by EPA. Saturated tissues (specimens damp not wet) may be disposed of as inert solid waste—follow local regulations.

SECTION IX: SPECIAL PROTECTION INFORMATION

VENTILATION:

Local exhaust ventilation recommended to assure formaldehyde PEL compliance. Monitor effectiveness using Bacharach passive dosimeter badge (available through **WARD'S Natural Science**).

RESPIRATORY PROTECTION:

Monitor for STEL/PEL compliance. Use NIOSH approved formaldehyde vapor respirator if PEL or STEL is expected to be exceeded.

SKIN PROTECTION:

(EXCELLENT/GOOD): Nitrile or butyl rubber gloves. **(GOOD/FAIR):** Natural rubber, neoprene rubber when working with this material, or with dissection specimens fixed in this material.

EYE PROTECTION:

Splash-proof chemical safety goggles. Wear **NO CONTACT LENSES** during use of this material, or during dissection activities.

OTHER PROTECTIVE EQUIPMENT:

Eye-wash station in close proximity; sleeve protectors recommended during dissection activities.

SECTION X: REGULATORY GUIDELINES

DOT CLASSIFICATION:

Not classified

HAZARD CLASSIFICATION:

IRRITANT.

OTHER REGULATORY GUIDELINES:

CALIFORNIA PROPOSITION #65: WARNING: This product contains a chemical known to the State of California to cause cancer.

RIGHT-TO-KNOW LABELING:

Dilute Formalin Solution
IRRITANT

Hazardous Components (v/v): Formalin (1-4%) CAS#50-00-0 \ IARC-listed.

Safety Equipment: Nitrile/butyl rubber gloves, splash-proof chemical goggles
Apron, sleeve protectors. Eyewash station in close proximity.

SECTION XI: SPECIAL HANDLING PRECAUTIONS/COMMENTS

To promote safe use and handling of this product each customer or recipient 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 activities wear proper personal protection equipment; have eyewash stations in close proximity. The wearing of an apron, smock, or lab coat is recommended. Monitoring of workplace atmosphere may be required to assure compliance with OSHA PEL formaldehyde levels. Avoid prolonged breathing of vapors. Discontinue use if allergic reaction or prolonged periods of irritation is observed. Contact physician.

PRODUCT USE:

Use without dilution for immersion and/or pressure embalming fixation of zoological specimens. Refer to other technical information available from **WARD'S Natural Science** for specific use procedures.

PRODUCT STORAGE:

Store in original container, in a cool, dry place away from heat and oxidizing agents. Do not allow hydrochloric acid to come in contact with this product — resultant mixture can form BIS-Chloromethyl ether, an OSHA-regulated carcinogen.

THE ABOVE INFORMATION IS BELIEVED TO BE ACCURATE AND REPRESENTS THE BEST INFORMATION CURRENTLY AVAILABLE TO US. HOWEVER, WE MAKE NO WARRANTY OR MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, WITH RESPECT TO SUCH INFORMATION, AND WE ASSUME NO LIABILITY RESULTING FROM SUCH USE. USERS SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE SUITABILITY OF THIS INFORMATION FOR THEIR PARTICULAR PURPOSES.

WARD'S NATURAL SCIENCE ESTABLISHMENT - MATERIAL SAFETY DATA SHEET

SECTION I: PRODUCT IDENTIFICATION AND USE

MANUFACTURER/SUPPLIER:

WARD'S Natural Science Establishment
5100 West Henrietta Road
Rochester, New York 14692-9012

PHONE: 716-359-2502 0800 / 1700 EST
CONTACT PERSON: Kenneth G. Rainis
EMERGENCY PHONE: CHEMTREC (US) 1-800-424-9300
CANUTEC (Canada) 1-613-996-6666

MSDS # 154.5

PRODUCT NAME:

Embalming Fluid (in vertebrate tissues)

SYNONYMS/TRADE NAMES:

Fixative for processing dry-embalmed specimen products

CHEMICAL FAMILY:

Mixture

CATALOG NUMBER:

In selected vertebrate specimens

PRODUCT SIZE:

Present in small quantities in body tissues and cavities | Internal use only—not for resale

CERCLA RATINGS (Scale 0-3):

HEALTH = 2 FIRE = 0 REACTIVITY = 1 PERSISTENCE = 1

NFPA RATINGS (Scale 0-4):

HEALTH = 2 FIRE = 0 REACTIVITY = 1

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 in 29 CFR 1910.1200 (f).

INGREDIENTS	%	CAS #	HAZARD DATA
Formalin ^Δ	<4.0	50-00-0	OSHA/ACGIH: 0.75ppm (PEL), 2PPM (STEL) "Action Level" at 0.5ppm requires Medical monitoring LP8925000 RTEC: at 0.5ppm
Phenol	2.75	108-95-2	OSHA/ACGIH: 5ppm (skin) RETEC: SJ3325000
Ethylene glycol	5.5	107-21-1	ACGIH: 50ppm (vapor & mist) RETEC: KW2975000
Other [†]	0.09		
Water	87.66 - 89.91	7732-185	N/A

NOTE:

Traces of the above fixative may be present in holding fluids—usually in variable 'de minimus' amounts.

[†] Surfactants, fungistatic agents, esters, odorants, and conditioners. Proprietary information—see SECTION VI.

^Δ Range of formalin in fixative will vary from 1.8-4% (v/v), depending upon specimen source; see SECTION VI for additional information.

SECTION III: PHYSICAL DATA

APPEARANCE AND ODOR:

Clear, mobile fluid; phenolic (medicinal) odor.

SINGLE SUBSTANCE: () MIXTURE: (XXX)

MELTING POINT (C):

Not applicable.

BOILING POINT (C):

>100 (210F)

VAPOR PRESSURE (mm Hg):

>1.0

EVAPORATION RATE (n-butyl acetate = 1):

<1.0

VOLATILE FRACTION BY WEIGHT:

Approximately 9%

SPECIFIC GRAVITY (H₂O = 1):

<1.0

SOLUBILITY IN WATER (By weight):

Complete

ODOR THRESHOLD:

(FORMALIN) Odor threshold below PEL of 0.75ppm.

OLFACTORY DETECTION ALONE CANNOT BE USED TO ASSURE COMPLIANCE WITH PEL.

SECTION IV: FIRE AND EXPLOSION DATA

FLAMMABLE MATERIAL: YES () NO (XXX)

FIRE AND EXPLOSION HAZARD SUMMARY:

Not a fire hazard when exposed to heat or flame.

FLASH POINT:

>180F/82C

AUTO IGNITION TEMPERATURE:

>932F/500C

LOWER EXPLOSION LIMIT:

Not-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 such as: nitrates, perchlorates or concentrated sulfuric, nitric or acetic acids. Materials may be reactive with potassium t-butoxide. **AVOID ANY CONTACT WITH HYDROCHLORIC ACID.** Resultant product may contain BIS-chloromethyl ether, an OSHA-regulated carcinogen.

HAZARDOUS DECOMPOSITION PRODUCTS:

Formaldehyde gas, carbon monoxide and carbon dioxide.

HAZARDOUS POLYMERIZATION:

Non-hazardous polymerization may occur at low temperatures, forming paraformaldehyde, a white solid.

CONDITIONS TO AVOID:

Strong oxidizing agents; excessive heating of material.

SECTION VI: TOXICITY AND HEALTH HAZARD DATA

EXPOSURE LIMITS:

Formalin

OSHA: 0.75ppm (PEL)/2ppm (15 min. STEL) LC50 (rat, inhalation): 478ppm/LD50 (rat, oral) 500 mg/kg LD50 (rabbit, skin): 270mg/kg.

Phenol

OSHA/ACGIH 5ppm (skin)

[†]Trace Ingredients

Not listed

EXPOSURE LIMITS:

Repeated Exposure:

Embalming Fluid is a fixative, avoid all skin/eye contact with tissues saturated with this fixative or with residual fixative contained in body cavities of vertebrate animals prepared using this fixative. Avoid prolonged breathing of vapors of tissues saturated with this fixative. This fixative may cause mucous membrane irritation and other short-term effects. Acute ingestion (of saturated tissues and/or cavity fluids) may cause vomiting. Chronic skin exposure to saturated tissues and/or cavity fluids containing this fixative may lead to phenol absorption. Skin contact may cause allergic reaction, irritation and/or a transient dermatitis in hyper-sensitive individuals. Off-gassing of vapors from exposed tissues saturated with this fixative may cause transient allergic reaction, irritation (watering) to eyes and irritation to mucous membrane surfaces.

Overexposure:

May cause defatting of skin, allergic reaction, irritation, dermatitis as well as mucous membrane irritation and other ill effects. May cause tanning of skin.

SIGNIFICANT DATA RELEVANT TO HUMAN HEALTH HAZARD EVALUATION: Material is harmful if inhaled or absorbed through skin - excessive and/or prolonged contact causes defatting and/or tanning of skin. Causes skin, nose, eye, upper respiratory tract irritation. May cause allergic reaction in hypersensitive individuals.

^Δ **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". It is also an IARC-listed chemical. 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

FIRST AID/HAZARD:

SKIN CONTACT:

PROLONGED SKIN CONTACT MAY CAUSE TANNING AND IRRITATION. Remove any contaminated clothing, wash affected areas with lukewarm water for 20 minutes. Contact physician if irritation, redness, or allergic reaction develops.

SKIN ABSORPTION:

PROLONGED, DIRECT CONTACT MAY RESULT IN ABSORPTION OF TRACE AMOUNTS OF PHENOL. Avoid skin contact. Remove any contaminated clothing or personal articles that have come in contact with this material. Decontaminate or discard as appropriate.

EYE CONTACT:

PROLONGED DIRECT EYE CONTACT MAY CAUSE IRRITATION. Immediately flush eye (including under eyelids) for at least 20 minutes. Contact physician immediately.

MOUTH CONTACT:

SMALL AMOUNTS MAY CAUSE IRRITATION AND NUMBING OF MUCOSA. Flush mouth with copious amounts of water for at least 20 minutes. **DO NOT ALLOW VICTIM TO SWALLOW ANY MATERIAL.** Contact physician.

INGESTION:

TOXIC. INDUCE VOMITING If conscious, give 8-10oz (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:

MAY PRODUCE SHORT-TERM UPPER RESPIRATORY SYSTEM IRRITATION OR ALLERGIC REACTION. Remove to fresh air. If breathing has stopped, administer CPR. Contact physician immediately. Off-gassing of small amounts of formaldehyde gas possible. Sensory threshold below PEL. If irritating effects are noticed remove to fresh air. If symptoms persist (>30 minutes); contact physician.

NOTES TO PHYSICIAN:

Proprietary ingredients have low to moderate toxicity and represent <0.1% (v/v) of this formulation. Disclosure as provided in 29 CFR 1910.1200 (1).

SECTION VIII: SPILL, LEAK AND DISPOSAL PROCEDURES

PERSONAL PROTECTION EQUIPMENT:

OTHER PROTECTIVE EQUIPMENT

SMALL SPILLS:

Splash-proof eye goggles, nitrile gloves, apron, sleeve protector.

Eyewash station within a 15-second walk from dissection activities.

Cover spill area with sorbent material. Wipe up. Evaporate saturated sorbent material to dryness in chemical fume hood, or outdoors; discard dry material as inert solid waste.

DISPOSAL:

Small amounts of this material may be discharged to a sanitary sewer (if local regulations permit). Saturated sorbent material may be evaporated to dryness either outdoors or in a certified chemical fume hood, then discarded as an inert solid waste. Discharge, treatment and disposal may be subject to Federal, State/Provincial and local regulations.

Overall fixative volume in saturated tissues is small. Tissues saturated with this material are not considered to be hazardous waste by EPA. Saturated tissues (specimens damp, not wet with excess fixative) may be disposed of as inert solid waste—follow local regulations.

SECTION IX: SPECIAL PROTECTION INFORMATION

VENTILATION:

Local exhaust ventilation recommended to assure formaldehyde PEL compliance. Monitor effectiveness using Bacharach passive dosimeter badge (available through **WARD'S Natural Science**).

RESPIRATORY PROTECTION:

Monitor for STEL/PEL compliance. Use NIOSH approved formaldehyde vapor respirator if PEL or STEL is expected to be exceeded.

SKIN PROTECTION:

(EXCELLENT/GOOD): Nitrile or butyl rubber gloves. **(GOOD/FAIR):** Natural rubber, neoprene rubber when working with this material, or with dissection specimens fixed in this material.

EYE PROTECTION:

Splash-proof chemical safety goggles. Wear **NO CONTACT LENSES** during use of this material, or during dissection activities.

OTHER PROTECTIVE EQUIPMENT:

Eye-wash station in close proximity. Sleeve protectors recommended during dissection activities.

SECTION X: REGULATORY GUIDELINES

DOT CLASSIFICATION:

Class 6.1 Poison (contains 2.7% phenol)

HAZARD CLASSIFICATION:

IRRITANT.

OTHER REGULATORY GUIDELINES:

CALIFORNIA PROPOSITION #65: WARNING: This product contains a chemical known to the State of California to cause cancer.

RIGHT-TO-KNOW LABELING:

Embalming Fluid

IRRITANT

Hazardous Components (v/v):

Formalin (<4.0%) CAS#50-00-0 | IARC-listed chemical.

Phenol (2.75%) CAS# 108-95-2

Ethylene Glycol (5.5%) CAS# 107-21-1

Safety Equipment:

Nitrile/butyl rubber gloves, splash-proof chemical goggles

Apron, sleeve protectors. Eyewash station in close proximity.

SECTION XI: SPECIAL HANDLING PRECAUTIONS/COMMENTS

To promote safe use and handling of this product each customer or recipient 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 activities wear proper personal protection equipment; have eyewash stations in close proximity. The wearing of an apron, smock, or lab coat as well as sleeve protectors is recommended. Monitoring of workplace atmosphere may be required to assure compliance with OSHA PEL formaldehyde levels. Avoid prolonged breathing of vapors.

PRODUCT USE:

Use without dilution for immersion and/or pressure embalming fixation of zoological specimens. Refer to other technical information available from **WARD'S Natural Science** for specific use procedures.

THE ABOVE INFORMATION IS BELIEVED TO BE ACCURATE AND REPRESENTS THE BEST INFORMATION CURRENTLY AVAILABLE TO US. HOWEVER, WE MAKE NO WARRANTY OR MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, WITH RESPECT TO SUCH INFORMATION, AND WE ASSUME NO LIABILITY RESULTING FROM SUCH USE. USERS SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE SUITABILITY OF THIS INFORMATION FOR THEIR PARTICULAR PURPOSE.

REV #: 2.6

DATE: Revised 7/21/95

x 
Signed: Safety Officer - 716-359-2502