

SAFETY DATA SHEET



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FORMALIN FIXED SPECIMENS IN PRESERVED HOLDING SOLUTION – EXCLUDING FETAL PIGS, CATS, GRASSFROGS, BULLFROGS, RABBITS, RATS, MINK

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name: Formalin Fixed Specimens In Preserved Holding Solution – Excluding Fetal Pigs, Cats, Grassfrogs, Bullfrogs, Rabbits, Rats, Mink
Recommended Use: Science education applications
Synonyms: None
Manufacturer/Supplier: Ranaco Corporation, 4345 E Irvington Road, Tucson, AZ 85714
General Information: 800-528-7023
Transportation Emergency Number: 800-424-9300 Chemtrec – 24 hours assistance

SECTION 2: HAZARD IDENTIFICATION

DANGER



Targeted organs:

Eyes, Skin, Central Nervous System, Respiratory Tract

GHS Classification:

Acute Toxicity, oral (Category 4)
Acute Toxicity, dermal (Category 4)
Skin Irritation (Category 2)
Eye irritation (Category 2A)
Skin sensitization (Category 1)
Acute toxicity, inhalation (Category 4)
Carcinogenicity (Category 2)

Hazard Statements:

Maybe harmful if swallowed.
Causes skin irritation.
Causes eye irritation.
May cause an allergic skin reaction.
May cause respiratory irritation.
May cause cancer.

⚠ WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov

Precautionary Statements:

Obtain special instructions before use.
Wear protective gloves and eye protection.
Do not eat, drink or smoke when using this product.
Wash hands thoroughly after handling.
IF ON SKIN: Wash with plenty of soap and water.
IF IN EYES: Rinse cautiously for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.
IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF SWALLOWED: Immediately call a POISON CENTER or physician if exposed or concerned: Get medical advice/attention.
Store in a well-ventilated place. Keep container tightly closed.
Dispose of contents/container in accordance with local/regional/national regulations.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS #	%
Formaldehyde	50-00-0	> 0.1% - ≤ 0.6%
Methanol	67-56-1	≤ 0.03%
Propylene Glycol	57-55-6	≤ 9%
Ethylene Glycol Monophenyl Ether	122-99-6	≤ 1%
Water	7732-18-5	Balance

SECTION 4: FIRST AID MEASURES

SKIN CONTACT: Wash affected area with soap and water. Seek medical attention if symptoms develop.

EYE CONTACT: Rinse cautiously for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing. Seek medical attention if irritation persists.

INHALATION: Remove to fresh air. Get medical treatment if symptoms persist.

INGESTION: Immediately call a POISON CENTER or physician. Only induce vomiting at the instruction of medical personnel. Never give anything by mouth to an unconscious person.

SIGNS AND SYMPTOMS OF EXPOSURE: Irritation of skin, eyes, respiratory tract. Repeated exposure may cause dermatitis or other allergic reactions.

SECTION 5: FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use dry chemical, CO₂, water spray (fog) or alcohol foam.

FIRE FIGHTING METHODS AND PROTECTION: Firefighters should wear self-contained breathing apparatus and wear full protective equipment.

FIRE AND/OR EXPLOSION HAZARDS: During a fire, smoke generated can be irritating or toxic.

HAZARDOUS COMBUSTION PRODUCTS: Products of combustion include but are not limited to carbon monoxide and carbon dioxide.

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: Avoid breathing vapors. Use gloves and eye protection to clean up spills.

EMERGENCY PROCEDURES: Ventilate area of spill. Eliminate all sources of ignition. Remove non-essential personnel.

ENVIRONMENTAL PRECAUTIONS: No special hazards. Follow applicable federal, state, provincial and local regulations regarding releases.

METHODS FOR CONTAINMENT AND CLEAN-UP: Absorb with liquid binding material and place in a sealed container. Dispose of waste in accordance with federal, state, provincial and local regulations.

SECTION 7: HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING: Do not eat, drink or smoke when using this product. Avoid breathing vapors. Avoid direct skin or eye contact with liquids. Do not ingest. Wash hands with soap and water after use or handling of product.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES: Store at room temperature in a dry well ventilated area. Keep specimen container tightly closed when not in use.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits:

Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Formaldehyde	C 0.3 ppm / C 0.37 mg/m ³	TWA: 0.75 ppm / STEL: 2ppm	TWA: 0.016 ppm / STEL: 0.1 ppm
Methanol	TWA: 200 ppm / STEL: 250 ppm	TWA: 200 ppm / STEL: 260 ppm	TWA: 200 ppm / STEL: 250 ppm
Ethylene Glycol Monophenyl Ether	Not available	Not available	Not available
	WEEL		
Propylene Glycol	TWA 10 mg/m ³ Aerosol	Not available	Not available

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility, a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles or face shield, apron and appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory Protection: None should be needed in normal handling and room temperatures. If use conditions generate fumes above the OSHA regulations, use of a NIOSH/MSHA approved respirator is required.

ACGIH: American Conference of Industrial Hygienists, OSHA: U.S. Occupational Safety and Health Administration, NIOSH: U.S. National Institute for Occupational Safety and Health, PEL: Permissible Exposure Limit, TWA: Time Weighted Average, STEL: Short Term Exposure Limit, REL: Recommended Exposure Limit, WEEL: Workplace Environmental Exposure Limit

SECTION 9: PHYSICAL & CHEMICAL PROPERTIES

Appearance: Specimen with/without clear colorless liquid
Odor: Mild pungent odor
Odor Threshold: Data not available
pH: Data not available
Melting/Freezing Point: Data not available
Boiling Point: Data not available
Flash Point: Data not available
Evaporation Rate (Water = 1) : >1
Flammability (solid/gas): Data not available
Explosion Limits: Lower/Upper: Data not available

Vapor Pressure (mmHg): Data not available
Vapor Density: Data not available
Relative Density (Specific Gravity): >1
Solubility(ies): Complete in water
Partition Coefficient: Data not available
Auto-ignition Temperature: Data not available
Decomposition Temperature: Data not available
Viscosity: Data not available
Molecular Formula: Mixture
Molecular Weight: Mixture

SECTION 10: STABILITY & REACTIVITY

Reactivity: None under normal conditions.

Chemical Stability: Stable

Conditions to Avoid: Excessive temperatures which cause evaporation.

Incompatible Materials: Strong acids, phenol, strong oxidizers, strong bases, hydrochloric acid, ammonia, iodine, alkalies, tannin, iron products, gelatin, bisulfate

Hazardous Polymerization: None under normal conditions.

Hazardous Decomposition Products: May include, but are not limited to carbon monoxide, carbon dioxide, gaseous formaldehyde, aldehydes, ketones, alcohols, ethers and organic acids

SECTION 11: TOXICOLOGICAL INFORMATION

Acute Toxicity: Formalin Fixed Specimens in Preserved Holding Solution have not been tested as a mixture. Information about individual components is supplied.

Formaldehyde – Oral-rat LD50: 100 mg/kg; Inhalation-rat LC50: 250 ppm/4 hours; Dermal-rat: 270 mg/kg

Methanol - Oral-rat LD50: 5,600 mg/kg; Inhalation-rat LC50: 6,400 ppm/4 hours, 145,000 ppm/ 1 hour; Dermal-rat: 15,800 mg/kg

Propylene Glycol – Ingestion-rat LD50: > 20,000 mg/kg; Skin absorption-rabbit LD50: > 20,000 mg/kg

Ethylene Glycol Monophenyl Ether- Oral-rat LD50: 1,840 mg/kg; Dermal-rabbit: >2,214 mg/kg

Chronic Effects: Data not available.

Skin Corrosion/Irritation:

Causes skin irritation. May cause an allergic skin reaction.

Serious Eye Damage/Irritation:

Causes eye irritation or damage.

Respiratory or Skin Sensitization:

May cause sensitization by skin contact

Germ Cell Mutagenicity: Data not available.

Carcinogenicity: Data not available. Information about individual components is supplied.

Formaldehyde – Classified as a carcinogen by the International Agency for Research on Cancer (IARC) and the National Toxicology Program (NTP) and OSHA. CA Prop 65: Formaldehyde is known to the State of California to cause cancer.

Reproductive Toxicity: Data not available. Information about individual components is supplied.

Methanol - CA Prop 65: This chemical is known to the State of California to cause birth defects or other reproductive harm.

Specific Target Organ Toxicity – Single exposure: Data not available.

Specific Target Organ Toxicity– Repeated exposure: Data not available.

Aspiration Hazard: Data not available.

Potential Health Effects:**Inhalation:** May cause respiratory irritation.**Ingestion:** May be harmful if swallowed.**Skin:** May cause skin irritation. May cause an allergic skin reaction.**Eyes:** May cause eye irritation or damage.**Signs and Symptoms of Exposure:**

The chemical, physical and toxicological properties have not been thoroughly investigated for this product/mixture. Specific data is not available. Exercise appropriate procedures to minimize hazards.

SECTION 12: ECOLOGICAL INFORMATION**Toxicity to fish:** No data available.**Toxicity to daphnia and other aquatic invertebrates:** No data available.**Toxicity to algae:** No data available.**Persistence and degradability:** No data available.**Bioaccumulative potential:** No data available.**Mobility in soil:** No data available.**PBT and vPvB assessment:** No data available.**Other adverse effects:** An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.**SECTION 13: DISPOSAL CONSIDERATIONS**

Dispose of contents/container in accordance with local/regional/national regulations.

SECTION 14: TRANSPORTATION INFORMATION (US DOT /CANADA TDG)**UN/NA Number:** Not applicable**Shipping Name:** Not regulated**Hazard Class:** Not applicable**Packing Group:** Not applicable**Reportable Quantity:** No**Marine Pollutant:** No**Exceptions:** Not applicable**2012 ERG Guide#:** Not applicable**SECTION 15: REGULATORY INFORMATION**

Toxic Substances Control Act (TSCA): All components of this product are included on the TSCA inventory.

Component	TSCA	CERLCA (RQ)	RCRA CODE	DSL	NDSL	WHMIS CLASSIFICATION
Formaldehyde	Listed	100 lbs (45.4 kg)	U122	Listed	Not Listed	D1A; D2A; D2B
Methanol	Listed	5,000 lbs (2,270 kg)	U154	Listed	Not Listed	B2; D1B; D2A; D2B
Propylene Glycol	Listed	None	None	Listed	Not Listed	None
Ethylene Glycol Monophenyl Ether	Listed	None	None	Listed	Not Listed	B3

California Proposition 65 Information:

⚠WARNING: This product can expose you to chemicals including formaldehyde, which is known to the State of California to cause cancer, and methanol, which is known to the State of California to cause birth defects or other reproductive harm.

For more information go to www.P65Warnings.ca.gov.**SECTION 16: OTHER INFORMATION****Date Prepared:** July 23, 2018**Supersedes:** April 24, 2018

RANACO disclaims all expressed or implied warranties of merchantability and fitness for a particular purpose, with respect to the product or information provided herein. All information appearing herein is based upon data obtained from the manufacturer and/or recognized technical sources. While the information is believed to be accurate, **RANACO** makes no representations as to its accuracy or sufficiency. Conditions of use are beyond **RANACO**'s control and therefore users are responsible to verify this data under their own operating conditions to determine whether the product is suitable for their particular purposes and they assume all risks of their use, handling and disposal of the product or from the publication or use of, or reliance upon, information contained herein. This information relates only to the product designated herein, and does not relate to its use in combination with any other material or in any other process.

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Targeted organs:

Eyes, Skin, Central Nervous System, Respiratory Tract

GHS Classification:

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Acute Toxicity, dermal (Category 4)
Skin Irritation (Category 2)
Eye irritation (Category 2A)
Skin sensitization (Category 1)
Acute toxicity, inhalation (Category 4)
Carcinogenicity (Category 2)

Hazard Statements:

Maybe harmful if swallowed.
Causes skin irritation.
Causes eye irritation.
May cause an allergic skin reaction.
May cause respiratory irritation.
May cause cancer.

⚠ WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov

Precautionary Statements:

Obtain special instructions before use.
Wear protective gloves and eye protection.
Do not eat, drink or smoke when using this product.
Wash hands thoroughly after handling.
IF ON SKIN: Wash with plenty of soap and water.
IF IN EYES: Rinse cautiously for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.
IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF SWALLOWED: Immediately call a POISON CENTER or physician if exposed or concerned: Get medical advice/attention.
Store in a well-ventilated place. Keep container tightly closed.
Dispose of contents/container in accordance with local/regional/national regulations.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS #	%
Formaldehyde	50-00-0	> 0.1% - ≤ 0.6%
Methanol	67-56-1	≤ 0.03%
Propylene Glycol	57-55-6	≤ 9%
Ethylene Glycol Monophenyl Ether	122-99-6	≤ 1%
Water	7732-18-5	Balance

SECTION 4: FIRST AID MEASURES

SKIN CONTACT: Wash affected area with soap and water. Seek medical attention if symptoms develop.

EYE CONTACT: Rinse cautiously for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing. Seek medical attention if irritation persists.

INHALATION: Remove to fresh air. Get medical treatment if symptoms persist.

INGESTION: Immediately call a POISON CENTER or physician. Only induce vomiting at the instruction of medical personnel. Never give anything by mouth to an unconscious person.

SIGNS AND SYMPTOMS OF EXPOSURE: Irritation of skin, eyes, respiratory tract. Repeated exposure may cause dermatitis or other allergic reactions.

SECTION 5: FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use dry chemical, CO₂, water spray (fog) or alcohol foam.

FIRE FIGHTING METHODS AND PROTECTION: Firefighters should wear self-contained breathing apparatus and wear full protective equipment.

FIRE AND/OR EXPLOSION HAZARDS: During a fire, smoke generated can be irritating or toxic.

HAZARDOUS COMBUSTION PRODUCTS: Products of combustion include but are not limited to carbon monoxide and carbon dioxide.

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: Avoid breathing vapors. Use gloves and eye protection to clean up spills.

EMERGENCY PROCEDURES: Ventilate area of spill. Eliminate all sources of ignition. Remove non-essential personnel.

ENVIRONMENTAL PRECAUTIONS: No special hazards. Follow applicable federal, state, provincial and local regulations regarding releases.

METHODS FOR CONTAINMENT AND CLEAN-UP: Absorb with liquid binding material and place in a sealed container. Dispose of waste in accordance with federal, state, provincial and local regulations.

SECTION 7: HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING: Do not eat, drink or smoke when using this product. Avoid breathing vapors. Avoid direct skin or eye contact with liquids. Do not ingest. Wash hands with soap and water after use or handling of product.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES: Store at room temperature in a dry well ventilated area. Keep specimen container tightly closed when not in use.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits:

Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Formaldehyde	C 0.3 ppm / C 0.37 mg/m ³	TWA: 0.75 ppm / STEL: 2ppm	TWA: 0.016 ppm / STEL: 0.1 ppm
Methanol	TWA: 200 ppm / STEL: 250 ppm	TWA: 200 ppm / STEL: 260 ppm	TWA: 200 ppm / STEL: 250 ppm
Ethylene Glycol Monophenyl Ether	Not available	Not available	Not available
	WEEL		
Propylene Glycol	TWA 10 mg/m ³ Aerosol	Not available	Not available

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility, a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles or face shield, apron and appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory Protection: None should be needed in normal handling and room temperatures. If use conditions generate fumes above the OSHA regulations, use of a NIOSH/MSHA approved respirator is required.

ACGIH: American Conference of Industrial Hygienists, OSHA: U.S. Occupational Safety and Health Administration, NIOSH: U.S. National Institute for Occupational Safety and Health, PEL: Permissible Exposure Limit, TWA: Time Weighted Average, STEL: Short Term Exposure Limit, REL: Recommended Exposure Limit, WEEL: Workplace Environmental Exposure Limit

SECTION 9: PHYSICAL & CHEMICAL PROPERTIES

Appearance: Specimen with/without clear colorless liquid
Odor: Mild pungent odor
Odor Threshold: Data not available
pH: Data not available
Melting/Freezing Point: Data not available
Boiling Point: Data not available
Flash Point: Data not available
Evaporation Rate (Water = 1) : >1
Flammability (solid/gas): Data not available
Explosion Limits: Lower/Upper: Data not available

Vapor Pressure (mmHg): Data not available
Vapor Density: Data not available
Relative Density (Specific Gravity): >1
Solubility(ies): Complete in water
Partition Coefficient: Data not available
Auto-ignition Temperature: Data not available
Decomposition Temperature: Data not available
Viscosity: Data not available
Molecular Formula: Mixture
Molecular Weight: Mixture

SECTION 10: STABILITY & REACTIVITY

Reactivity: None under normal conditions. **Chemical Stability:** Stable
Conditions to Avoid: Excessive temperatures which cause evaporation.
Incompatible Materials: Strong acids, phenol, strong oxidizers, strong bases, hydrochloric acid, ammonia, iodine, alkalies, tannin, iron products, gelatin, bisulfate **Hazardous Polymerization:** None under normal conditions.
Hazardous Decomposition Products: May include, but are not limited to carbon monoxide, carbon dioxide, gaseous formaldehyde, aldehydes, ketones, alcohols, ethers and organic acids

SECTION 11: TOXICOLOGICAL INFORMATION

Acute Toxicity: Formalin Fixed Specimens in Preserved Holding Solution have not been tested as a mixture. Information about individual components is supplied.
Formaldehyde – Oral-rat LD50: 100 mg/kg; Inhalation-rat LC50: 250 ppm/4 hours; Dermal-rat: 270 mg/kg
Methanol - Oral-rat LD50: 5,600 mg/kg; Inhalation-rat LC50: 6,400 ppm/4 hours, 145,000 ppm/ 1 hour; Dermal-rat: 15,800 mg/kg
Propylene Glycol – Ingestion-rat LD50: > 20,000 mg/kg; Skin absorption-rabbit LD50: > 20,000 mg/kg
Ethylene Glycol Monophenyl Ether- Oral-rat LD50: 1,840 mg/kg; Dermal-rabbit: >2,214 mg/kg
Chronic Effects: Data not available.
Skin Corrosion/Irritation:
Causes skin irritation. May cause an allergic skin reaction.
Serious Eye Damage/Irritation:
Causes eye irritation or damage.
Respiratory or Skin Sensitization:
May cause sensitization by skin contact
Germ Cell Mutagenicity: Data not available.
Carcinogenicity: Data not available. Information about individual components is supplied.
Formaldehyde – Classified as a carcinogen by the International Agency for Research on Cancer (IARC) and the National Toxicology Program (NTP) and OSHA. CA Prop 65: Formaldehyde is known to the State of California to cause cancer.
Reproductive Toxicity: Data not available. Information about individual components is supplied.
Methanol - CA Prop 65: This chemical is known to the State of California to cause birth defects or other reproductive harm.
Specific Target Organ Toxicity – Single exposure: Data not available.
Specific Target Organ Toxicity– Repeated exposure: Data not available.
Aspiration Hazard: Data not available.

Potential Health Effects:**Inhalation:** May cause respiratory irritation.**Ingestion:** May be harmful if swallowed.**Skin:** May cause skin irritation. May cause an allergic skin reaction.**Eyes:** May cause eye irritation or damage.**Signs and Symptoms of Exposure:**

The chemical, physical and toxicological properties have not been thoroughly investigated for this product/mixture. Specific data is not available. Exercise appropriate procedures to minimize hazards.

SECTION 12: ECOLOGICAL INFORMATION**Toxicity to fish:** No data available.**Toxicity to daphnia and other aquatic invertebrates:** No data available.**Toxicity to algae:** No data available.**Persistence and degradability:** No data available.**Bioaccumulative potential:** No data available.**Mobility in soil:** No data available.**PBT and vPvB assessment:** No data available.**Other adverse effects:** An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.**SECTION 13: DISPOSAL CONSIDERATIONS**

Dispose of contents/container in accordance with local/regional/national regulations.

SECTION 14: TRANSPORTATION INFORMATION (US DOT /CANADA TDG)**UN/NA Number:** Not applicable**Shipping Name:** Not regulated**Hazard Class:** Not applicable**Packing Group:** Not applicable**Reportable Quantity:** No**Marine Pollutant:** No**Exceptions:** Not applicable**2012 ERG Guide#:** Not applicable**SECTION 15: REGULATORY INFORMATION**

Toxic Substances Control Act (TSCA): All components of this product are included on the TSCA inventory.

Component	TSCA	CERLCA (RQ)	RCRA CODE	DSL	NDSL	WHMIS CLASSIFICATION
Formaldehyde	Listed	100 lbs (45.4 kg)	U122	Listed	Not Listed	D1A; D2A; D2B
Methanol	Listed	5,000 lbs (2,270 kg)	U154	Listed	Not Listed	B2; D1B; D2A; D2B
Propylene Glycol	Listed	None	None	Listed	Not Listed	None
Ethylene Glycol Monophenyl Ether	Listed	None	None	Listed	Not Listed	B3

California Proposition 65 Information:

⚠WARNING: This product can expose you to chemicals including formaldehyde, which is known to the State of California to cause cancer, and methanol, which is known to the State of California to cause birth defects or other reproductive harm.

For more information go to www.P65Warnings.ca.gov.**SECTION 16: OTHER INFORMATION****Date Prepared:** July 23, 2018**Supersedes:** April 24, 2018

RANACO disclaims all expressed or implied warranties of merchantability and fitness for a particular purpose, with respect to the product or information provided herein. All information appearing herein is based upon data obtained from the manufacturer and/or recognized technical sources. While the information is believed to be accurate, **RANACO** makes no representations as to its accuracy or sufficiency. Conditions of use are beyond **RANACO**'s control and therefore users are responsible to verify this data under their own operating conditions to determine whether the product is suitable for their particular purposes and they assume all risks of their use, handling and disposal of the product or from the publication or use of, or reliance upon, information contained herein. This information relates only to the product designated herein, and does not relate to its use in combination with any other material or in any other process.

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Synonyms: None
Manufacturer/Supplier: Ranaco Corporation, 4345 E Irvington Road, Tucson, AZ 85714
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Targeted organs:

Eyes, Skin, Central Nervous System, Respiratory Tract

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Eye irritation (Category 2A)
Skin sensitization (Category 1)
Acute toxicity, inhalation (Category 4)
Carcinogenicity (Category 2)

Hazard Statements:

Maybe harmful if swallowed.
Causes skin irritation.
Causes eye irritation.
May cause an allergic skin reaction.
May cause respiratory irritation.
May cause cancer.

⚠ WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov

Precautionary Statements:

Obtain special instructions before use.
Wear protective gloves and eye protection.
Do not eat, drink or smoke when using this product.
Wash hands thoroughly after handling.
IF ON SKIN: Wash with plenty of soap and water.
IF IN EYES: Rinse cautiously for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.
IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF SWALLOWED: Immediately call a POISON CENTER or physician if exposed or concerned: Get medical advice/attention.
Store in a well-ventilated place. Keep container tightly closed.
Dispose of contents/container in accordance with local/regional/national regulations.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS #	%
Formaldehyde	50-00-0	> 0.1% - ≤ 0.6%
Methanol	67-56-1	≤ 0.03%
Propylene Glycol	57-55-6	≤ 9%
Ethylene Glycol Monophenyl Ether	122-99-6	≤ 1%
Water	7732-18-5	Balance

SECTION 4: FIRST AID MEASURES

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EYE CONTACT: Rinse cautiously for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing. Seek medical attention if irritation persists.

INHALATION: Remove to fresh air. Get medical treatment if symptoms persist.

INGESTION: Immediately call a POISON CENTER or physician. Only induce vomiting at the instruction of medical personnel. Never give anything by mouth to an unconscious person.

SIGNS AND SYMPTOMS OF EXPOSURE: Irritation of skin, eyes, respiratory tract. Repeated exposure may cause dermatitis or other allergic reactions.

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EXTINGUISHING MEDIA: Use dry chemical, CO₂, water spray (fog) or alcohol foam.

FIRE FIGHTING METHODS AND PROTECTION: Firefighters should wear self-contained breathing apparatus and wear full protective equipment.

FIRE AND/OR EXPLOSION HAZARDS: During a fire, smoke generated can be irritating or toxic.

HAZARDOUS COMBUSTION PRODUCTS: Products of combustion include but are not limited to carbon monoxide and carbon dioxide.

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: Avoid breathing vapors. Use gloves and eye protection to clean up spills.

EMERGENCY PROCEDURES: Ventilate area of spill. Eliminate all sources of ignition. Remove non-essential personnel.

ENVIRONMENTAL PRECAUTIONS: No special hazards. Follow applicable federal, state, provincial and local regulations regarding releases.

METHODS FOR CONTAINMENT AND CLEAN-UP: Absorb with liquid binding material and place in a sealed container. Dispose of waste in accordance with federal, state, provincial and local regulations.

SECTION 7: HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING: Do not eat, drink or smoke when using this product. Avoid breathing vapors. Avoid direct skin or eye contact with liquids. Do not ingest. Wash hands with soap and water after use or handling of product.

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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits:

Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Formaldehyde	C 0.3 ppm / C 0.37 mg/m ³	TWA: 0.75 ppm / STEL: 2ppm	TWA: 0.016 ppm / STEL: 0.1 ppm
Methanol	TWA: 200 ppm / STEL: 250 ppm	TWA: 200 ppm / STEL: 260 ppm	TWA: 200 ppm / STEL: 250 ppm
Ethylene Glycol Monophenyl Ether	Not available	Not available	Not available
	WEEL		
Propylene Glycol	TWA 10 mg/m ³ Aerosol	Not available	Not available

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility, a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles or face shield, apron and appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory Protection: None should be needed in normal handling and room temperatures. If use conditions generate fumes above the OSHA regulations, use of a NIOSH/MSHA approved respirator is required.

ACGIH: American Conference of Industrial Hygienists, OSHA: U.S. Occupational Safety and Health Administration, NIOSH: U.S. National Institute for Occupational Safety and Health, PEL: Permissible Exposure Limit, TWA: Time Weighted Average, STEL: Short Term Exposure Limit, REL: Recommended Exposure Limit, WEEL: Workplace Environmental Exposure Limit

SECTION 9: PHYSICAL & CHEMICAL PROPERTIES

Appearance: Specimen with/without clear colorless liquid
Odor: Mild pungent odor
Odor Threshold: Data not available
pH: Data not available
Melting/Freezing Point: Data not available
Boiling Point: Data not available
Flash Point: Data not available
Evaporation Rate (Water = 1) : >1
Flammability (solid/gas): Data not available
Explosion Limits: Lower/Upper: Data not available

Vapor Pressure (mmHg): Data not available
Vapor Density: Data not available
Relative Density (Specific Gravity): >1
Solubility(ies): Complete in water
Partition Coefficient: Data not available
Auto-ignition Temperature: Data not available
Decomposition Temperature: Data not available
Viscosity: Data not available
Molecular Formula: Mixture
Molecular Weight: Mixture

SECTION 10: STABILITY & REACTIVITY

Reactivity: None under normal conditions.

Chemical Stability: Stable

Conditions to Avoid: Excessive temperatures which cause evaporation.

Incompatible Materials: Strong acids, phenol, strong oxidizers, strong bases, hydrochloric acid, ammonia, iodine, alkalies, tannin, iron products, gelatin, bisulfate

Hazardous Polymerization: None under normal conditions.

Hazardous Decomposition Products: May include, but are not limited to carbon monoxide, carbon dioxide, gaseous formaldehyde, aldehydes, ketones, alcohols, ethers and organic acids

SECTION 11: TOXICOLOGICAL INFORMATION

Acute Toxicity: Formalin Fixed Specimens in Preserved Holding Solution have not been tested as a mixture. Information about individual components is supplied.

Formaldehyde – Oral-rat LD50: 100 mg/kg; Inhalation-rat LC50: 250 ppm/4 hours; Dermal-rat: 270 mg/kg

Methanol - Oral-rat LD50: 5,600 mg/kg; Inhalation-rat LC50: 6,400 ppm/4 hours, 145,000 ppm/ 1 hour; Dermal-rat: 15,800 mg/kg

Propylene Glycol – Ingestion-rat LD50: > 20,000 mg/kg; Skin absorption-rabbit LD50: > 20,000 mg/kg

Ethylene Glycol Monophenyl Ether- Oral-rat LD50: 1,840 mg/kg; Dermal-rabbit: >2,214 mg/kg

Chronic Effects: Data not available.

Skin Corrosion/Irritation:

Causes skin irritation. May cause an allergic skin reaction.

Serious Eye Damage/Irritation:

Causes eye irritation or damage.

Respiratory or Skin Sensitization:

May cause sensitization by skin contact

Germ Cell Mutagenicity: Data not available.

Carcinogenicity: Data not available. Information about individual components is supplied.

Formaldehyde – Classified as a carcinogen by the International Agency for Research on Cancer (IARC) and the National Toxicology Program (NTP) and OSHA. CA Prop 65: Formaldehyde is known to the State of California to cause cancer.

Reproductive Toxicity: Data not available. Information about individual components is supplied.

Methanol - CA Prop 65: This chemical is known to the State of California to cause birth defects or other reproductive harm.

Specific Target Organ Toxicity – Single exposure: Data not available.

Specific Target Organ Toxicity– Repeated exposure: Data not available.

Aspiration Hazard: Data not available.

Potential Health Effects:**Inhalation:** May cause respiratory irritation.**Ingestion:** May be harmful if swallowed.**Skin:** May cause skin irritation. May cause an allergic skin reaction.**Eyes:** May cause eye irritation or damage.**Signs and Symptoms of Exposure:**

The chemical, physical and toxicological properties have not been thoroughly investigated for this product/mixture. Specific data is not available. Exercise appropriate procedures to minimize hazards.

SECTION 12: ECOLOGICAL INFORMATION**Toxicity to fish:** No data available.**Toxicity to daphnia and other aquatic invertebrates:** No data available.**Toxicity to algae:** No data available.**Persistence and degradability:** No data available.**Bioaccumulative potential:** No data available.**Mobility in soil:** No data available.**PBT and vPvB assessment:** No data available.**Other adverse effects:** An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.**SECTION 13: DISPOSAL CONSIDERATIONS**

Dispose of contents/container in accordance with local/regional/national regulations.

SECTION 14: TRANSPORTATION INFORMATION (US DOT /CANADA TDG)**UN/NA Number:** Not applicable**Shipping Name:** Not regulated**Hazard Class:** Not applicable**Packing Group:** Not applicable**Reportable Quantity:** No**Marine Pollutant:** No**Exceptions:** Not applicable**2012 ERG Guide#:** Not applicable**SECTION 15: REGULATORY INFORMATION**

Toxic Substances Control Act (TSCA): All components of this product are included on the TSCA inventory.

Component	TSCA	CERLCA (RQ)	RCRA CODE	DSL	NDSL	WHMIS CLASSIFICATION
Formaldehyde	Listed	100 lbs (45.4 kg)	U122	Listed	Not Listed	D1A; D2A; D2B
Methanol	Listed	5,000 lbs (2,270 kg)	U154	Listed	Not Listed	B2; D1B; D2A; D2B
Propylene Glycol	Listed	None	None	Listed	Not Listed	None
Ethylene Glycol Monophenyl Ether	Listed	None	None	Listed	Not Listed	B3

California Proposition 65 Information:

⚠WARNING: This product can expose you to chemicals including formaldehyde, which is known to the State of California to cause cancer, and methanol, which is known to the State of California to cause birth defects or other reproductive harm.

For more information go to www.P65Warnings.ca.gov.**SECTION 16: OTHER INFORMATION****Date Prepared:** July 23, 2018**Supersedes:** April 24, 2018

RANACO disclaims all expressed or implied warranties of merchantability and fitness for a particular purpose, with respect to the product or information provided herein. All information appearing herein is based upon data obtained from the manufacturer and/or recognized technical sources. While the information is believed to be accurate, **RANACO** makes no representations as to its accuracy or sufficiency. Conditions of use are beyond **RANACO**'s control and therefore users are responsible to verify this data under their own operating conditions to determine whether the product is suitable for their particular purposes and they assume all risks of their use, handling and disposal of the product or from the publication or use of, or reliance upon, information contained herein. This information relates only to the product designated herein, and does not relate to its use in combination with any other material or in any other process.

SAFETY DATA SHEET



www.ranaco.com

FORMALIN FIXED SPECIMENS IN PRESERVED HOLDING SOLUTION – EXCLUDING FETAL PIGS, CATS, GRASSFROGS, BULLFROGS, RABBITS, RATS, MINK

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name: Formalin Fixed Specimens In Preserved Holding Solution – Excluding Fetal Pigs, Cats, Grassfrogs, Bullfrogs, Rabbits, Rats, Mink
Recommended Use: Science education applications
Synonyms: None
Manufacturer/Supplier: Ranaco Corporation, 4345 E Irvington Road, Tucson, AZ 85714
General Information: 800-528-7023
Transportation Emergency Number: 800-424-9300 Chemtrec – 24 hours assistance

SECTION 2: HAZARD IDENTIFICATION

DANGER



Targeted organs:

Eyes, Skin, Central Nervous System, Respiratory Tract

GHS Classification:

Acute Toxicity, oral (Category 4)
Acute Toxicity, dermal (Category 4)
Skin Irritation (Category 2)
Eye irritation (Category 2A)
Skin sensitization (Category 1)
Acute toxicity, inhalation (Category 4)
Carcinogenicity (Category 2)

Hazard Statements:

Maybe harmful if swallowed.
Causes skin irritation.
Causes eye irritation.
May cause an allergic skin reaction.
May cause respiratory irritation.
May cause cancer.

⚠ WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov

Precautionary Statements:

Obtain special instructions before use.
Wear protective gloves and eye protection.
Do not eat, drink or smoke when using this product.
Wash hands thoroughly after handling.
IF ON SKIN: Wash with plenty of soap and water.
IF IN EYES: Rinse cautiously for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.
IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF SWALLOWED: Immediately call a POISON CENTER or physician if exposed or concerned: Get medical advice/attention.
Store in a well-ventilated place. Keep container tightly closed.
Dispose of contents/container in accordance with local/regional/national regulations.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS #	%
Formaldehyde	50-00-0	> 0.1% - ≤ 0.6%
Methanol	67-56-1	≤ 0.03%
Propylene Glycol	57-55-6	≤ 9%
Ethylene Glycol Monophenyl Ether	122-99-6	≤ 1%
Water	7732-18-5	Balance

SECTION 4: FIRST AID MEASURES

SKIN CONTACT: Wash affected area with soap and water. Seek medical attention if symptoms develop.

EYE CONTACT: Rinse cautiously for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing. Seek medical attention if irritation persists.

INHALATION: Remove to fresh air. Get medical treatment if symptoms persist.

INGESTION: Immediately call a POISON CENTER or physician. Only induce vomiting at the instruction of medical personnel. Never give anything by mouth to an unconscious person.

SIGNS AND SYMPTOMS OF EXPOSURE: Irritation of skin, eyes, respiratory tract. Repeated exposure may cause dermatitis or other allergic reactions.

SECTION 5: FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use dry chemical, CO₂, water spray (fog) or alcohol foam.

FIRE FIGHTING METHODS AND PROTECTION: Firefighters should wear self-contained breathing apparatus and wear full protective equipment.

FIRE AND/OR EXPLOSION HAZARDS: During a fire, smoke generated can be irritating or toxic.

HAZARDOUS COMBUSTION PRODUCTS: Products of combustion include but are not limited to carbon monoxide and carbon dioxide.

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: Avoid breathing vapors. Use gloves and eye protection to clean up spills.

EMERGENCY PROCEDURES: Ventilate area of spill. Eliminate all sources of ignition. Remove non-essential personnel.

ENVIRONMENTAL PRECAUTIONS: No special hazards. Follow applicable federal, state, provincial and local regulations regarding releases.

METHODS FOR CONTAINMENT AND CLEAN-UP: Absorb with liquid binding material and place in a sealed container. Dispose of waste in accordance with federal, state, provincial and local regulations.

SECTION 7: HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING: Do not eat, drink or smoke when using this product. Avoid breathing vapors. Avoid direct skin or eye contact with liquids. Do not ingest. Wash hands with soap and water after use or handling of product.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES: Store at room temperature in a dry well ventilated area. Keep specimen container tightly closed when not in use.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits:

Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Formaldehyde	C 0.3 ppm / C 0.37 mg/m ³	TWA: 0.75 ppm / STEL: 2ppm	TWA: 0.016 ppm / STEL: 0.1 ppm
Methanol	TWA: 200 ppm / STEL: 250 ppm	TWA: 200 ppm / STEL: 260 ppm	TWA: 200 ppm / STEL: 250 ppm
Ethylene Glycol Monophenyl Ether	Not available	Not available	Not available
	WEEL		
Propylene Glycol	TWA 10 mg/m ³ Aerosol	Not available	Not available

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility, a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles or face shield, apron and appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory Protection: None should be needed in normal handling and room temperatures. If use conditions generate fumes above the OSHA regulations, use of a NIOSH/MSHA approved respirator is required.

ACGIH: American Conference of Industrial Hygienists, OSHA: U.S. Occupational Safety and Health Administration, NIOSH: U.S. National Institute for Occupational Safety and Health, PEL: Permissible Exposure Limit, TWA: Time Weighted Average, STEL: Short Term Exposure Limit, REL: Recommended Exposure Limit, WEEL: Workplace Environmental Exposure Limit

SECTION 9: PHYSICAL & CHEMICAL PROPERTIES

Appearance: Specimen with/without clear colorless liquid
Odor: Mild pungent odor
Odor Threshold: Data not available
pH: Data not available
Melting/Freezing Point: Data not available
Boiling Point: Data not available
Flash Point: Data not available
Evaporation Rate (Water = 1) : >1
Flammability (solid/gas): Data not available
Explosion Limits: Lower/Upper: Data not available

Vapor Pressure (mmHg): Data not available
Vapor Density: Data not available
Relative Density (Specific Gravity): >1
Solubility(ies): Complete in water
Partition Coefficient: Data not available
Auto-ignition Temperature: Data not available
Decomposition Temperature: Data not available
Viscosity: Data not available
Molecular Formula: Mixture
Molecular Weight: Mixture

SECTION 10: STABILITY & REACTIVITY

Reactivity: None under normal conditions. **Chemical Stability:** Stable
Conditions to Avoid: Excessive temperatures which cause evaporation.
Incompatible Materials: Strong acids, phenol, strong oxidizers, strong bases, hydrochloric acid, ammonia, iodine, alkalies, tannin, iron products, gelatin, bisulfate **Hazardous Polymerization:** None under normal conditions.
Hazardous Decomposition Products: May include, but are not limited to carbon monoxide, carbon dioxide, gaseous formaldehyde, aldehydes, ketones, alcohols, ethers and organic acids

SECTION 11: TOXICOLOGICAL INFORMATION

Acute Toxicity: Formalin Fixed Specimens in Preserved Holding Solution have not been tested as a mixture. Information about individual components is supplied.
Formaldehyde – Oral-rat LD50: 100 mg/kg; Inhalation-rat LC50: 250 ppm/4 hours; Dermal-rat: 270 mg/kg
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Ethylene Glycol Monophenyl Ether- Oral-rat LD50: 1,840 mg/kg; Dermal-rabbit: >2,214 mg/kg
Chronic Effects: Data not available.
Skin Corrosion/Irritation:
Causes skin irritation. May cause an allergic skin reaction.
Serious Eye Damage/Irritation:
Causes eye irritation or damage.
Respiratory or Skin Sensitization:
May cause sensitization by skin contact
Germ Cell Mutagenicity: Data not available.
Carcinogenicity: Data not available. Information about individual components is supplied.
Formaldehyde – Classified as a carcinogen by the International Agency for Research on Cancer (IARC) and the National Toxicology Program (NTP) and OSHA. CA Prop 65: Formaldehyde is known to the State of California to cause cancer.
Reproductive Toxicity: Data not available. Information about individual components is supplied.
Methanol - CA Prop 65: This chemical is known to the State of California to cause birth defects or other reproductive harm.
Specific Target Organ Toxicity – Single exposure: Data not available.
Specific Target Organ Toxicity– Repeated exposure: Data not available.
Aspiration Hazard: Data not available.

Potential Health Effects:**Inhalation:** May cause respiratory irritation.**Ingestion:** May be harmful if swallowed.**Skin:** May cause skin irritation. May cause an allergic skin reaction.**Eyes:** May cause eye irritation or damage.**Signs and Symptoms of Exposure:**

The chemical, physical and toxicological properties have not been thoroughly investigated for this product/mixture. Specific data is not available. Exercise appropriate procedures to minimize hazards.

SECTION 12: ECOLOGICAL INFORMATION**Toxicity to fish:** No data available.**Toxicity to daphnia and other aquatic invertebrates:** No data available.**Toxicity to algae:** No data available.**Persistence and degradability:** No data available.**Bioaccumulative potential:** No data available.**Mobility in soil:** No data available.**PBT and vPvB assessment:** No data available.**Other adverse effects:** An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.**SECTION 13: DISPOSAL CONSIDERATIONS**

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Toxic Substances Control Act (TSCA): All components of this product are included on the TSCA inventory.

Component	TSCA	CERLCA (RQ)	RCRA CODE	DSL	NDSL	WHMIS CLASSIFICATION
Formaldehyde	Listed	100 lbs (45.4 kg)	U122	Listed	Not Listed	D1A; D2A; D2B
Methanol	Listed	5,000 lbs (2,270 kg)	U154	Listed	Not Listed	B2; D1B; D2A; D2B
Propylene Glycol	Listed	None	None	Listed	Not Listed	None
Ethylene Glycol Monophenyl Ether	Listed	None	None	Listed	Not Listed	B3

California Proposition 65 Information:

⚠WARNING: This product can expose you to chemicals including formaldehyde, which is known to the State of California to cause cancer, and methanol, which is known to the State of California to cause birth defects or other reproductive harm.

For more information go to www.P65Warnings.ca.gov.**SECTION 16: OTHER INFORMATION****Date Prepared:** July 23, 2018**Supersedes:** April 24, 2018

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