BBC Biochemical MATERIAL SAFETY DATA SHEET

Section 1. Chemical Product and Company Information

Common Name:	**Hartman's Fixative**	**Code:**	**MA0102009**
Supplier:	**BBC Biochemical**	**MSDS#:**	**MA0102009**
Synonym:	**None**	**Validation Date:**	**3-4-09**
Trade Name:	**None**	**Print Date:**	**3-4-09**
Material Uses:	**Tissue Fixation**	**Responsible Name:**	**Dr. B**
Manufacturer:	**BBC Biochemical PO Box 1320 409 Eleanor Lane Mount Vernon, WA 98273 1-800-635-4477**	**In Case of Emergency:**	**1-800-424-9300 Chemtrec USA 1-202-483-7616 Chemtrec Intrl 1-800-635-4477**

Section 2. Composition and Information on Ingredients

Name	CAS#	% by Weight	Exposure Limits
1) Water 2) Ethyl Alcohol Denatured 3) Glacial Acidic Acid 4) Formaldehyde 37% 5) Glycerin	 64-17-5 64-19-7 50-00-0 56-81-5	Percentage composition is being withheld as a Trade Secret. The components listed above have been associated with one or more	The components listed above have been associated with one or more immediate and/or delayed (*) health hazards. Risk of damage and effects depends upon duration and level of exposure.

Section 3. Hazards Identification

Physical State and Appearance Clear colorless liquid.

Emergency Overview Not available.

Routes of Entry Harmful if inhaled. Can cause central nervous system depression. Causes chemical burns to eyes. Skin irritant. May be harmful if absorbed through skin. Alcohol exposure enhances toxicity hazards of other materials, such as chlorinated hydrocarbon solvents or drugs.

Potential Acute Health Effects

Eyes Methanol (67-56-1) causes chemical burns. Can cause central nervous system depression. Signs and symptoms may include headache, dizziness, nausea, vomiting, unconsciousness and asphyxiation. Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage.

Skin May be harmful if absorbed through skin.

Inhalation Harmful if inhaled. Can cause irritation of nose, throat and lungs. Can cause central nervous system depression.

Ingestion May be harmful if swallowed. If accidently swallowed, burns to mucous membranes, esophagus or GI tract may result. Ingestion may cause blindness. Can cause central nervous system depression.

Potential Chronic Health Effects Formaldehyde (50-00-0) POTENTIAL CANCER HAZARD
Based on animal data and limited epidemiological evidence, NTP an IARC have listed formaldehyde as a probable human carcinogen. May cause allergic skin reaction. Some reports suggest that formaldehyde may cause respiratory sensitization, such as asthma, and that pre-existing respiratory and skin disorders may be aggravated by exposure. OSHA has identified 0.5ppm as the 'Action Level', 29 CFR 1910.1048. Please refer to the OSHA Standard for guidance applicable to your operations.
Methanol (67-56-1)
Possible reproductive disorders from prolonged exposure. May cause lung damage based on animal data. May cause liver and kidney damage based on animal data. May cause blindness if swallowed. As of the revision date, this material has not been listed by NTP, classified by IARC nor regulated by OSHA as a carcinogen.

Medical Conditions Aggravated by Overexposure Pre-existing respiratory disorders may be aggravated by exposure.

Overexposure/ Signs/Symptoms

Section 4. First Aid Measures

Eye Contact Immediately flush eyes with large amounts of water for at least 15 minutes. Eyelids should be held

	apart during irrigation to allow water to contact entire surface of eyes and lids. Get medical attention immediately.
Skin Contact	Immediately remove all contaminated clothing, including shoes. Wash the affected area of the body with large quantities of water for at least 20 minutes. Contact physician if irritation persists. If there are chemical burns, cover the area with sterile, dry dressings and get medical attention immediately.
Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Get medical attention immediately.
Ingestion	If accidently swallowed, dilute by drinking large amounts of water. Immediately contact poison control center or hospital emergency room for any additional treatment directions.
Notes to Physician	Not available.

Section 5. Fire Fighting Measures

Flammability of the Product	Not available.
Auto-ignition Temperature	Not available.
Flash Points	Not available.
Flammable Limits	Not available.
Products of Combustion	Not available.
Fire Hazards in Presence Of Various Substances	Not available.
Explosion Hazards in Presence of Various Substances	Not available.
Fire Fighting Media and Instructions	Dry-chemical, carbon dioxide, alcohol foam. Use water spray to cool fire-exposed metal containers, to dilute and flush spills, to suppress vapors, and to reduce fire intensity.
Protective Clothing (Fire)	
Special Remarks on Fire Hazards	
Special Remarks on Explosion Hazards	

Section 6. Accidental Release Measures

Small Spill and Leak	Always wear appropriate protective equipment as listed in section VIII. Eliminate all ignition sources and ventilate the area to reduce the potential for exposure, fire and explosion. Recover as much material as possible. Follow all emergency notification and reporting regulations.
Large Spill and Leak	

Section 7, Handling and Storage

Handling	Handle in accordance with good laboratory hygiene and safety practices. Wash thoroughly after handling. Do not breathe vapor. Use with adequate ventilation. Avoid contact with skin and clothing. Do not get in eyes.
Storage	Formaldehyde solutions will precipitate paraformaldehyde if stored below room temperature.

Section 8. Exposure Controls / Personal Protection

Engineering Controls	The following exposure controls may be used to effectively minimize employee exposure: local exhaust ventilation, enclosed system design, process isolation, personal protective equipment and prudent work practices. These may not necessarily address all issues pertaining to your operation. Consult the experts of your choice to determine if your programs are adequate.
Personal Protection	
Eyes	Safety glasses with side shields.
Body	Impervious clothing.
Respiratory	Where air contaminants can exceed acceptable criteria, use NIOSH/MSHA approved full-face respirator or equivalent.
Hands	Latex, Nitrile or equivalent gloves.
Feet	Impervious footwear.
Personal Protection in Case of a Large Spill	Safety glasses with side shields, impervious clothing and shoes, gloves and full-face respirator when necessary.

Product Name	**Exposure Limits**
1)Formaldehyde 50-00-0	ACGIH TLV: 0.3ppm (0.37mg/m^3) Ceiling OSHA PEL: 0.75ppm (0.9mg/m^3) TWA; 2ppm (2.5mg/m^3) 15 min STEL
2)Methanol 67-56-1	ACGIH TLV: Skin 200ppm (262mg/m^3) TWA; 250ppm (328mg/m^3) STEL OSHA PEL: 200ppm (260mg/m^3) TWA REMANDED PEL: Skin 200ppm (260mg/m^3) TWA; 250ppm (310mg/m^3) STEL OSHA 1989 PEL remanded, but in effect in some states.

Consult Local authorities before acceptable exposure limits.

Section 9. Physical and Chemical Properties

Physical State and Appearance	Clear colorless liquid.	**Odor:**	Pungent, alcoholic.
Molecular Weight	Not applicable.	**Taste:**	Not available.
Molecular Formula	Not applicable.	**Color:**	Clear colorless.
pH (1%/Water)	Not applicable.		
Boiling/Condensation Point	Not applicable.		
Melting/Freezing Point	Not applicable.		
Critical Temperature	Not applicable.		
Specific Gravity	Not applicable.		
Vapor Pressure	Not applicable.		
Vapor Density	Not applicable.		
Volatility	Not applicable.		
Odor Threshold	Not applicable.		
Evaporation Rate	Not applicable.		
VOC	Not available.		
Viscosity	Not available.		
Ionicity (in water)	Not available.		
Dispersion Properties	Not available.		
Solubility	Not available.		
Physical Chemical Comments	Not available.		

Section 10. Stability and Reactivity

Stability and Reactivity	Normally stable, but may further react at high temperatures to form methanol, formic acid or methylals. Low temperatures causes polymerization of formaldehyde to paraformaldehyde. Reacts with may compounds.
Conditions of Instability	Not available.
Incompatibility with Various Substances	Reactions with phenol, strong acids or alkalis may be violent. Reaction with hydrochloric acid may form bis-chloromethyl ether, and OSHA regulated carcinogen. Decomposition products may include CO, CO_2. Hazardous polymerization will not occur.
Hazardous Decomposition Products	Not available.
Hazardous Polymerization	Not available.

Section 11. Toxicological Information

Toxicity to Animals	Formaldehyde 50-00-0 LD50: orl-rat=0.8g/kg (Merck) LC50: rat=203mg/m^3 (RTECS) Methanol 67-56-1 LD50: orl-rat=5628mg/kg; skn-rbt=20g/kg (Sax) LC50: rat=64000ppm/4H (Sax)
Chronic Effects on Humans	
Other Toxic Effects on Humans	
Special Remarks on Toxicity to Animals	Not available.
Special Remarks on Chronic Effects on Humans	Not available.
Special Remarks on Other Toxic Effects on Humans	Not available.

Section 12. Ecological Information

Ecotoxicity	Formaldehyde is highly toxic to algae, protozoa and other unicellular organisms and slightly toxic to fish. In the atmosphere the material is rapidly degraded by photolysis and photooxidation. Formaldehyde is mobile in the soil. In water or soil, formaldehyde is biodegraded in a few days. Experiments performed

	on a variety of fish and shrimp show no bioconcentration of formaldehyde.
BODS and COD	Not available.
Biodegradable/OEDC	Not available.
Mobility	Not available.
Toxicity of the Products of Biodegradation	Not available.
Special Remarks on The Products of Biodegradation	Not available.

Section 13. Disposal Considerations

Waste Information	Dispose of according to local, state/provincial, and federal requirements.
Waste Stream	
Consult your local or regional authorities.	

Section 14. Transport Information

DOT Classification	Ethanol solutions; 3; UN 1170; III; Flammable Liquid
Marine Pollutant	Not available.
Hazardous Substances Reportable Quantity	Not available.
Special Provisions for Transport	SARA Title III Section 311/312 Fire Hazard Immediate Health Hazard Delayed Health Hazard SARA Title III Section 313 and 40 CFR Part 372 This product contains the following toxic chemical(s) subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986, and Subpart C-Supplier Notification Requirement of 40 CFR Part 372. Formaldehyde 50-00-0 Methanol 67-56-1
TDG Classification	Ethanol solutions; 3; UN 1170; III; Flammable Liquid
ADR/RID Classification	Not controlled under ADR (Europe).
IMO/IMDG Classification	Not controlled under IMDG.
ICAO/IATA Classification	See IATA Regulations, Ethanol solutions; 3; UN 1170; III; Flammable Liquid

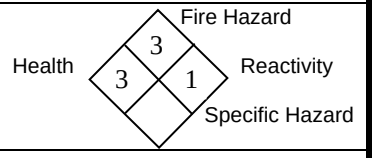
Section 15. Other Information

Label requirements

Hazardous Material Information System (U.S.A.)

Health	3
Fire Hazard	3
Reactivity	1
Personal Protection	

National Fire Protection Association (U.S.A.)



References

Other Special Considerations

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Notice to Reader

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