BBC Biochemical MATERIAL SAFETY DATA SHEET

Section 1. Chemical Product and Company Information

Common Name:	**F.S. Fix™**	**Code:**	**6500**
Supplier:	**BBC Biochemical**	**MSDS#:**	**6500**
Synonym:	**None.**	**Validation Date:**	**3-4-09**
Trade Name:	**None.**	**Print Date:**	**3-4-09**
Material Uses:	**Fixation of Tissue.**	**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#	OSHA PEL/TWA	OSHA STEL
1) Water	1737-87-1		
2) Denatured Ethanol Mixture			
Ethyl Alcohol	64-17-5	1000 ppm	None established
Methyl Alcohol	67-56-1	200 ppm	250 ppm
Isopropyl Alcohol	67-63-0	400 ppm	500 ppm
3) Formaldehyde 37%	50-00-0	.75 ppm	2 ppm
4) Glacial Acetic Acid	64-19-7	10 ppm	15 ppm
5) Selected Buffers	N/A	N/A	N/A

Section 3. Hazards Identification

Physical State and Appearance	Clear, blue liquid with a pungent odor.
Emergency Overview	Not available.
Routes of Entry	Eye contact, inhalation, ingestion, skin contact.
Potential Acute Health Effects	
Eyes	Irritation, may cause permanent damage.
Skin	Irritation, sensitizer.
Inhalation	Irritation to nose, throat and respiratory system.
Ingestion	May cause allergic reaction or blindness.
Potential Chronic Health Effects	Formaldehyde is a strong sensitizer. It has the potential to cause cancer in humans. Various animal experiments have shown it to cause cancer in rats.
Medical Conditions Aggravated by Overexposure	Respiratory conditions.
Overexposure/ Signs/Symptoms	

Section 4. First Aid Measures

Eye Contact	Immediately flush thoroughly with water for at least 15 minutes.
Skin Contact	Wash thoroughly with water. Remove contaminated clothing at once (launder before reuse); discard contaminated shoes.
Inhalation	Remove to fresh air; give artificial respiration if breathing has stopped.
Ingestion	If conscious, dilute, inactivate, or absorb the ingested formaldehyde by giving milk, activated charcoal, or water.
Notes to Physician	GET IMMEDIATE MEDICAL ASSISTANCE IN ALL CASES OF OVEREXPOSURE.

Section 5. Fire Fighting Measures

Flammability of the	Not available.

Product	
Auto-ignition Temperature	Not available.
Flash Points	About 55° F
Flammable Limits	LEL (%) 3.3; UEL (%) 19.0
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 containers and disperse vapors.
Protective Clothing (Fire)	Fire fighters should use self-contained breathing apparatus and protective clothing.
Special Remarks on Fire Hazards	Vapors can travel distances to ignition source and flash back.
Special Remarks on Explosion Hazards	

Section 6. Accidental Release Measures

Small Spill and Leak	Evacuate the area of all unnecessary personnel. Wear suitable protective equipment. Eliminate all sources of ignition until the area is determined to be free from explosion or fire hazards. Contain the release and eliminate it's source, if this can be done without risk. Take up and containerize for proper disposal. Comply with Federal, State, and local regulations on reporting releases.
Large Spill and Leak	Same as above.

Section 7, Handling and Storage

Handling	Do not breathe vapor or mist. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. Do not take internally. Have eye wash and safety equipment available.
Storage	Store and use in areas away from heat, sparks, and open flame. Store in tightly closed containers.

Section 8. Exposure Controls / Personal Protection

Engineering Controls	
Personal Protection	
Eyes	Safety glasses with approved side shields should be worn at all times. Eye wash station should be available.
Body	Protective clothing should be worn to minimize skin contact. Safety shower should be available.
Respiratory	If workplace exposure limit(s) of product or any component is exceeded (see TLV/PEL), a NIOSH or MSHA approved air supplied respirator is advised in absence of proper environmental control. Engineering and/or administrative controls should be implemented to reduce exposure. Material must be handled or transferred in an approved fume hood or with adequate ventilation.
Hands	Neoprene, Nitrile or equivalent gloves should be worn.
Feet	Impervious footwear should be worn to prevent skin contact.
Personal Protection in Case of a Large Spill	See above.

Product Name	**Exposure Limits**
1)Methyl Alcohol CAS 67-56-1	OSHA PEL 200ppm TWA
2)Isopropyl Alcohol CAS 67-63-0	OSHA PEL 400ppm TWA
3)Ethyl Alcohol CAS 64-17-5	OSHA PEL 1000ppm TWA
4)Formaldehyde 37% CAS 50-00-0	OSHA PEL 0.75ppm TWA
5)Glacial Acetic Acid CAS 64-19-7	OSHA PEL 10ppm TWA

Consult Local authorities before acceptable exposure limits.

Section 9. Physical and Chemical Properties

Physical State and Appearance	Clear blue/green liquid.	**Odor:**	Pungent.
Molecular Weight	Not applicable.	**Taste:**	Not available.
Molecular Formula	Not applicable.	**Color:**	Clear blue/green.
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	Soluble in water.
Physical Chemical Comments	Not available.

Section 10. Stability and Reactivity

Stability and Reactivity	Stable.
Conditions of Instability	Heat, sparks, open flame.
Incompatibility with Various Substances	Not available.
Hazardous Decomposition Products	CO_x, thermal decomposition produces toxic fumes.
Hazardous Polymerization	Data not available.

Section 11. Toxicological Information

Toxicity to Animals

Formaldehyde 37% CAS 50-00-0
LD50 (orl-mus): 42 mg/kg.

Ethyl Alcohol CAS 64-17-5
oral rat LD50: 7060 mg/kg; inhalation rat LC50: 20,000 ppm/10H; Irritation data, eye, rabbit: 500 mg/24H moderate; Investigated as a tumorigen, mutagen, reproductive effector. Methyl alcohol: oral rat LD50: 5628 mg/kg; inhalation rat LC50: 64000 ppm/4H; skin rabbit LD50: 15800 mg/kg; Irritation data,skin,rabbit: 20 mg/24H, Moderate; Investigated as a tumorigen, mutagen, reproductive effector. Isopropyl alcohol: oral rat LD50: 5045 mg/kg; skin rabbit LD50: 12.8 gm/kg; inhalation, rat: 16,000 ppm 8 hr.

Isopropyl Alcohol CAS 67-63-0
Oral rat LD50: 5045 mg/kg; skin rabbit LD50: 12.8 gm/kg; inhalation rat LC50: 16,000 ppm/8-hour;

Methyl Alcohol CAS 67-56-1
Oral rat LD50: 5628 mg/kg; inhalation rat LC50: 64000 ppm/4H; skin rabbit LD50: 15800 mg/kg; Irritation data-standard Draize test: skin, rabbit: 20mg/24 hr. Moderate; eye, rabbit: 100 mg/24 hr.

Glacial Acetic Acid CAS 64-19-7
Oral rat LD50: 3310 mg/kg; skin rabbit LD50: 1.06 g/kg; inhalation mouse LC50: 5620ppm/1-hr

Chronic Effects on Humans

This product contains the following toxic chemical subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and of 40 CFR 372:

CAS #	Chemical Name	Percent by Weight
67-56-1	Methanol	1.0
50-00-0	Formaldehyde	0.1
64-19-7	Glacial Acetic Acid	<1%

Other Toxic Effects on Humans

Special Remarks on Toxicity to Animals	Tests on laboratory animals indicate formaldehyde may cause tumors and may produce adverse mutagenic and reproductive effects.
Special Remarks on Chronic Effects on Humans	Not available.
Special Remarks on Other Toxic Effects on Humans	Not available.

Section 12. Ecological Information

Ecotoxicity	Not available.
BODS and COD	Not available.
Biodegradable/OEDC	Not available.
Mobility	Not available.
Toxicity of the Products of	Not available.

Biodegradation	
Special Remarks on The Products of Biodegradation	Not available.

Section 13. Disposal Considerations

Waste Information	Not available.
Waste Stream	Not available.
Consult your local or regional authorities.	

Section 14. Transport Information

DOT Classification	UN1993, Flammable Liquids, n.o.s., (Ethanol), 3, II
Marine Pollutant	Not available.
Hazardous Substances Reportable Quantity	Not available.
Special Provisions for Transport	Not applicable.
TDG Classification	UN1993, Flammable Liquids, n.o.s., (Ethanol), 3, II
ADR/RID Classification	ADR (Europe) Information not available.
IMO/IMDG Classification	IMDG Information not available.
ICAO/IATA Classification	See IATA Regulations, UN1993, Flammable Liquids, n.o.s., (Ethanol), 3, II

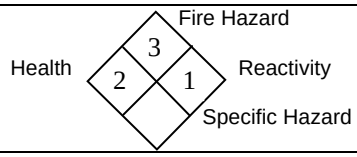
Section 15. Other Information

Label requirements

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

Health	2
Fire Hazard	3
Reactivity	1
Personal Protection	

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



References

Other Special Considerations

Notice to Reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein.