

BBC Biochemical

MATERIAL SAFETY DATA SHEET

Section 1. Chemical Product and Company Information

Common Name:	Grossing Aid™	Code:	0278
Supplier:	BBC Biochemical	MSDS#:	0278
Synonym:	None	Validation Date:	3-4-09
Trade Name:	None	Print Date:	3-4-09
Material Uses:	Lymph Node Detection	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	64-17-5	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.
3) Glacial Acetic Acid	64-19-7		
4) Formaldehyde 37%	50-00-0		

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	<p>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.</p> <p>Skin May be harmful if absorbed through skin.</p> <p>Inhalation Harmful if inhaled. Can cause irritation of nose, throat and lungs. Can cause central nervous system depression.</p> <p>Ingestion May be harmful if swallowed. If accidentally swallowed, burns to mucous membranes, esophagus or GI tract may result. Ingestion may cause blindness. Can cause central nervous system depression.</p>
Potential Chronic Health Effects	<p>Formaldehyde (50-00-0) POTENTIAL CANCER HAZARD</p> <p>Based on animal data and limited epidemiological evidence, NTP and 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.</p> <p>Methanol (67-56-1)</p> <p>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.</p>
Medical Conditions Aggravated by Overexposure/Overexposure/Signs/Symptoms	Pre-existing respiratory disorders may be aggravated by exposure.

Section 4. First Aid Measures

Eye Contact	Immediately flush eyes with large amounts of water for at least 15 minutes. Eyelids should be held
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	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 accidentally 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	Ethanol solutions; Flammable Liquid
Auto-ignition Temperature	The lowest known value is 363° C (685.4° F) (Ethyl alcohol 200 Proof).
Flash Points	Approximately 80° F, based on weighted average.
Flammable Limits	LEL: 3.3% based on ethanol UEL: 19% based on ethanol
Products of Combustion	Products include carbon oxides (CO, CO ₂), nitrogen oxides (NO, NO ₂ ...).
Fire Hazards in Presence Of Various Substances	Highly flammable in presence of open flames and sparks of heat. Slightly flammable to flammable in presence of oxidizing materials. Non-flammable in presence of shocks, of reducing materials, of combustible materials, of organic materials, of metals, of acids, of alkalis.
Explosion Hazards in Presence of Various Substances	Slightly explosive in presence of open flames and sparks, of heat, of oxidizing materials, of acids. Non-explosive in presence of shocks.
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)	Fire protective clothing
Special Remarks on Fire Hazards	Containers should be grounded. CAUTION: MAY BURN WITH NEAR INVISIBLE FLAME. Vapor may travel considerable distance to source of ignition and flash back. May form explosive mixtures with air. Contact with Bromine pentafluoride is likely to cause fire or explosion. Ethanol ignites on contact with chromyl chloride. Ethanol ignites on contact with iodine heptafluoride gas. It ignites then explodes upon contact with nitrosyl perchlorate. Addition of platinum black catalyst caused ignition. (Ethyl Alcohol 200 Proof).
Special Remarks on Explosion Hazards	Ethanol has an explosive reaction with the oxidized coating around potassium metal. Ethanol ignites and then explodes on contact with acetic anhydride + dosium hydrosulfate (ignites and may explode), disulfuric acid + nitric acid, phosphorous (III) oxide platinum, potassium-tert-butoxide + acids. Ethanol forms explosive products in reaction with the following compound: ammonium + silver nitrate (forms silver nitride and silver fulminate), iodine + phosphorus (forms ethane iodide), magnesium perchlorate (forms ethyl perchlorate), mercuric nitrate, nitric acid + silver (forms silver fulminate_ silver nitrate (forms ethyl nitrate) silver (I) oxide + ammonia or hydrazine (forms silver nitride and silver fulminate), sodium (evolves hydrogen gas). Sodium Hydrazide + alcohol can produce an explosion. Alcohols should not be mixed with mercuric nitrate, as explosive mercuric fulminate may be formed. May form explosive mixture with manganese perchlorate + 2,2-dimethoxypropane. Addition of alcohols to highly concentrate hydrogen peroxide forms powerful explosives. Explodes on contact with calcium hypochlorite. Vapor may explode if ignited in an enclosed area. Containers may explode when heated or involved in a fire. (Ethyl Alcohol 200 Proof)

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	Flammable Liquid. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth sand or other non-combustible material. Do not touch spilled material. Prevent entry into sewers, basements or confined areas; dike if need be. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7, Handling and Storage

Handling	Keep away form heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Handle in accordance with good laboratory hygiene and safety practices. Wash thoroughly after handling. Do not breathe vapor. Use with adequate ventilation. Avoid contact
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with skin and clothing. Do not get in eyes. Keep away from incompatibles such as oxidizing agents, acids, alkalis.

Storage Formaldehyde solutions will precipitate paraformaldehyde if stored below room temperature. Keep container in a cool, well ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).

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/m³) Ceiling

OSHA PEL: 0.75ppm (0.9mg/m³) TWA; 2ppm (2.5mg/m³) 15 min STEL

2) Methanol 67-56-1

ACGIH TLV: Skin 200ppm (262mg/m³) TWA; 250ppm (328mg/m³) STEL

OSHA PEL: 200ppm (260mg/m³) TWA

REMANDED PEL: Skin 200ppm (260mg/m³) TWA; 250ppm (310mg/m³) 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	Lowest known value is 78.5° C (173.3° F) (Ethyl Alcohol 200 Proof). Weighted average: 87.76° C (189.9° F)		
Melting/Freezing Point	May start to solidify at -114.1° C (-173.4° F) (Ethyl Alcohol 200 Proof).		
Critical Temperature	Lowest known value is 243° C (469.4° F) (Ethyl Alcohol 200 Proof).		
Specific Gravity	Not applicable.		
Vapor Pressure	Highest known value is 5.7 kPa at 20° C (Ethyl Alcohol 200 Proof). Weighted average: 4.24 kPa at 20° C		
Vapor Density	Highest known value is 1.59 (Air=1) (Ethyl Alcohol 200 Proof). Weighted average: 1.17 (Air=1)		
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 many 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, CO₂. 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	CARCINOGENIC EFFECTS: Classified PROVEN by State of California Proposition 65 [Ethyl alcohol 200 Proof]. Classified A4 (Not classifiable for human or animal.) by ACGIH [Ethyl alcohol 200 Proof]. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. [Ethyl alcohol 200 Proof]. Mutagenic for bacteria and/or yeast. [Ethyl alcohol 200 Proof]. TERATOGENIC EFFECTS: Classified PROVEN for human [Ethyl alcohol 200 Proof]. DEVELOPMENTAL TOXICITY: Classified Development toxin [PROVEN] [Ethyl alcohol 200 Proof]. Classified Reproductive system/toxin/female, Reproductive system/toxin/male [POSSIBLE] [Ethyl alcohol 200 Proof].
Other Toxic Effects on Humans	Hazardous in case of skin contact (irritant), of ingestion, of Slightly hazardous in case of skin contact (permeator).
Special Remarks on Toxicity to Animals	Not available.
Special Remarks on Chronic Effects on Humans	May affect genetic material (mutagenic) Causes adverse reproductive effects and birth defects (teratogenic) , based on moderate to heavy consumption. May cause cancer based on animal data. Human: passes through the placenta, excreted in maternal milk. (Ethyl alcohol 200 Proof)
Special Remarks on Other Toxic Effects on Humans	Acute potential health effects: Skin: causes skin irritation Eyes: causes eye irritation Ingestion: May cause gastrointestinal tract irritation with nausea, vomiting, diarrhea, and alterations in gastric secretions. May affect behavior/central nervous system (central nervous system depression - amnesia, headache, muscular incoordination, excitation, mild euphoria, slurred speech, drowsiness, staggering gait, fatigue, changes in mood/personality, excessive talking, dizziness, ataxia, somnolence, coma/narcosis, hallucinations, distorted perceptions, general anesthetic), peripheral nervous system (spastic paralysis)vision (diplopia). Moderately toxic and narcotic in high concentrations. May also affect metabolism, blood, liver, respiration (dyspnea), and endocrine system. May affect respiratory tract, cardiovascular(cardiac arrhythmias, hypotension), and urinary systems. Inhalation: May cause irritation of the respiratory tract and affect behavior/central nervous system with symptoms similar to ingestion. Chronic Potential Health Effects: Skin: Prolonged or repeated skin contact may cause dermatitis, an allergic reaction. Ingestion: Prolonged or repeated ingestion will have similiar effects as acute ingestion. It may also affect the brain. (Ethyl alcohol 200 Proof)

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

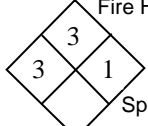
Consult your local or regional authorities.

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	National Fire Protection Association (U.S.A.)	
	Fire Hazard	3		
	Reactivity	1		
	Personal Protection			

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.