

BBC Biochemical

MATERIAL SAFETY DATA SHEET

Section 1. Chemical Product and Company Information

Common Name:	Formic Acid	Code:	RW0038, 9958, 9959, 9960
Supplier:	BBC Biochemical	MSDS#:	RW0038
Synonym:	Formylic Acid, Aminic acid, Hydrogen carboxylic acid	Validation Date:	3-27-09
Trade Name:	Not available	Print Date:	3-27-09
Material Uses:	Acid	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	OSHA PEL	ACGIH TWA
1) Formic Acid	64-18-6	95-97%	5 ppm	5ppm

Section 3. Hazards Identification

Physical State and Appearance	Colorless liquid.
Emergency Overview	Harmful by inhalation. Harmful if swallowed. Causes severe burns. Possible sensitizer. Target organs: Liver, Kidneys.
Routes of Entry	Not available.
Potential Acute Health Effects	
Eyes	Corrosive liquid is will cause severe damage to the eyes. High vapor concentrations may also be irritating.
Skin	Corrosive liquid will cause irritation with itching and local redness. Blisters may occur.
Inhalation	Corrosive liquid will cause irritation and inflammation to mucous membranes. Dizziness may occur.
Ingestion	Corrosive liquid is toxic. May cause headaches, dizziness, nausea and general weakness. Corrosive liquids will cause internal chemical burns in mouth, esophagus and stomach.
Potential Chronic Health Effects	
Medical Conditions Aggravated by Overexposure	Preexisting eye, skin and respiratory disorders may be aggravated by exposure to this product. Impaired function from preexisting disorders may be aggravated by exposure to this product.
Overexposure/Signs/Symptoms	Aspiration pneumontis may be evidenced by coughing, labored breathing and cyanosis (bluish skin). In severe cases death may result.

Section 4. First Aid Measures

Eye Contact	Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Get medical attention.
Skin Contact	Remove contaminated clothing/shoes. Flush skin with water. If irritation occurs, get medical attention. Do not reuse clothing until cleaned.
Inhalation	Remove victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, oxygen should be administered by qualified personnel. Get medical attention.
Ingestion	Do not induce vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs. Get medical attention.
Notes to Physician	Not available.

Section 5. Fire Fighting Measures

Flammability of the Product	Not available.
Auto-ignition Temperature	540 deg C
Flash Points	118.4 deg F
Flammable Limits	LEL:18 UEL:57
Products of Combustion	Not available.
Fire Hazards in Presence Of Various Substances	Not available.
Explosion Hazards in	Not available.

Presence of Various Substances

Fire Fighting Media and Instructions Use water fog, "alcohol" foam, dry chemical, or CO2. Clear fire area of unprotected personnel. Do not enter confined fire space without full bunker gear, including positive pressure NIOSH approved SCBA. Cool fire exposed containers with water.

Protective Clothing (Fire)

Special Remarks on Fire Hazards Fine mist or spray may be flammable at temperatures below the flash point. Carbon monoxide and unidentified organic compounds may be formed during combustion.

Special Remarks on Explosion Hazards When heated above the flash point this material emits flammable vapors which, when mixed with air, can burn or be explosive.

Section 6. Accidental Release Measures

Small Spill and Leak Ventilate area of leak or spill. Remove all sources of ignition. Clean-up personnel require protective clothing and respiratory protection from vapors. Only specially trained or qualified personnel should handle the emergency.

Large Spill and Leak Same as above.

Section 7, Handling and Storage

Handling Empty containers retain product residue and can be dangerous. Do not pressurize, cut weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition.

Storage Keep away from heat, sparks, and flame. Surfaces that are hot may ignite liquid product even in the absence of sparks or flame. Extinguish pilot lights, cigarettes and turn off other sources of ignition prior to use and until all vapors are gone.

Section 8. Exposure Controls / Personal Protection

Engineering Controls Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Provide exhaust ventilation sufficient to keep the airborne concentration of this product below its exposure limits. Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination.

Personal Protection

Eyes Use chemical safety goggles and/or full face shield where splashing is possible. Contact lenses should not be worn when working with this material. Maintain eye wash fountain and quick-drench facilities in work areas.

Body Where splashing is possible, full chemically resistant protective clothing (e.g., acid suit) and boots are required.

Respiratory If exposure may or does exceed occupational exposure limits (Sec. 2) use a NIOSH approved respirator to prevent overexposure. In accord with 29 CFR 1910.134 use either an atmosphere-supplying respirator or an air-purifying respirator for organic vapors.

Hands Test data indicate the best protection is provided by neoprene, nitrile, and natural rubber gloves.

Feet Impervious footwear is required in areas where splashing is possible.

Personal Protection in Case of a Large Spill See above.

Product Name	Exposure Limits
1) Formic Acid CAS64-18-6	OSHA PEL 5ppm TWA
2)	
3)	

Consult Local authorities before acceptable exposure limits.

Section 9. Physical and Chemical Properties

Physical State and Appearance	Clear, colorless liquid.	Odor:	Pungent
Molecular Weight	46.03	Taste:	Not available
Molecular Formula	Not applicable.	Color:	Colorless.
pH (1%/Water)	Not available		
Boiling/Condensation Point	100.8 C		
Melting/Freezing Point	8.5 C		
Critical Temperature	Not applicable.		
Specific Gravity	1.2		
Vapor Pressure	44.8 mmHg		
Vapor Density	1.6 g/L		
Volatility	Not available		
Odor Threshold	Not applicable.		
Evaporation Rate	Not available		
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	Stable.
Conditions of Instability	Stable under normal conditions. Avoid heat, flame, and other sources of ignition. Protect from moisture, hygroscopic.
Incompatibility with Various Substances	Avoid strong oxidizing agents, strong bases, finely powdered metals..
Hazardous Decomposition Products	Carbon monoxide and unidentified organic compounds may be formed during combustion.
Hazardous Polymerization	Will not occur.

Section 11. Toxicological Information

Toxicity to Animals	LD50: oral, rat: 1100 mg/kg; oral, mouse: 700 mg/kg LC50: inhalation, rat: 15,000 mg/m3; inhalation mouse: 6200 mg/m3
Chronic Effects on Humans	Mutagen. Human dose: 10 mmol/L, Lymphocyte cell experienced sister chromatid exchange. Hamster dose: 10 mmol/L, ovary experienced cytogenetic analysis.
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	EC50 Algea, 72 hours 26.9 mg/L. EC50 Daphnia Diaphnia magna, 48 Hours 34.2 mg/L; LC50 Fishe Leusiscus idus 96 hours, 46-100 mg/L
BODS and COD	COD: 34.8% BOD after 5 days: 8.6%
Biodegradable/OEDC Mobility	Bioconcentration : 1716 ug/L 6 hour(s) BCF (Residue) Water flea (Daphnia magna) 1.5 ug/L. 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	Not available.
Waste Stream	Not available.
Consult your local or regional authorities.	

Section 14. Transport Information

DOT Classification	Formic Acid, UN# 1779 Class 8, Packing Group II, Corrosive
Marine Pollutant	Not available.
Hazardous Substances Reportable Quantity	Not available.
Special Provisions for Transport	Not applicable.
TDG Classification	Formic Acid, UN# 1779 Class 8, Packing Group II, Corrosive
ADR/RID Classification	ADR (Europe) information not available.
IMO/IMDG Classification	IMDG Information not available.
ICAO/IATA Classification	Formic Acid, IATA Un Number 1779, Hazard class 8, packing group II.

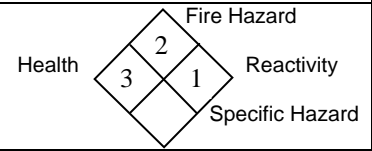
Section 15. Other Information

Label requirements

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

Health	3
Fire Hazard	2
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.