Ecological Laboratories INC.
Providing Aquatic Solutions Since 1976

MATERIAL SAFETY DATA SHEET
PRODUCT: MICROBE-LIFT Defend

SECTION I: IDENTIFICATION

Manufactures Name:	Ecological Laboratories, Inc.
Address:	2525 N.E. 9th Avenue Cape Coral, FL 33909
Emergency Telephone:	(800)424-9300 (outside the U.S.A. (202) 483-7616 collect)
Information Telephone:	(800) 645-2976
Date Prepared:	12/01/08

SECTION II: COMPOSITIONS/ INGREDIENTS

Ingredient	CAS No	Percent	Hazardous
Formaldehyde	50-00-0	<3%	Yes
Methyl Alcohol	67-56-1	<2%	Yes
Water	7732-18-5	>95%	No

SECTION III: PHYSICAL/CHEMICAL CHARACTERISTICS

Appearance and Odor:	Clear colorless liquid with typical formaldehyde odor
Boiling Range:	~100°C (=~212°F)
Specific Gravity:	~ 1.01
Vapor Pressure at 20 C (in mm of Hg):	N/D
Vapor Density (air =1):	N/D
Viscosity:	<500 cps
Solubility in Water:	100%
Evaporation Rate (n-butanol = 1):	N/D
% Volatiles:	100 %

SECTION IV: FIRE AND EXPLOSION HAZARD DATA

Lower Flammability Limits (% in air):	N/D
Flash Point and methods:	>60°C (140°F) closed cup
Flammability Classification:	Non-flammable
Recommended Extinguishing Media:	Water spray, dry chemical, alcohol foam, or carbon dioxide.
Special Fire Fighting Procedures:	Wear NIOSH/MSHA approved self-contained breathing apparatus and protective clothing. Cool fire-exposed containers with water spray.
Usual Fire/ Explosive Hazards:	Products of combustion are toxic

SECTION V: REACTIVITY DATA

Stability:	Stable.
Conditions to Avoid:	Store in a tightly closed container. Protect against physical damage. Store in a cool, dry well-ventilated location, away from any area where the fire hazard may be acute. Separate from

	incompatibles. Wear special protective equipment (Sec. XIII) for maintenance break-in or where exposures may exceed established exposure levels.
Incompatibility (materials to avoid):	Strong oxidizing or reducing agents
Hazardous Decomposition or byproducts:	Thermal decomposition may produce toxic vapors/fumes of hydrogen chloride and other organic materials, and oxide of carbon and nitrogen.
Hazardous Polymerization:	Will not occur.

SECTION VI: HEALTH HAZARD DATA

Threshold Limit Value:

Airborne Exposure Limits:

-OSHA Permissible Exposure Limit (PEL):
0.75 ppm (TWA), 2 ppm (STEL), 0.5 ppm (TWA) action level for formaldehyde
200 ppm (TWA) for methanol

-ACGIH Threshold Limit Value (TLV):
0.3 ppm Ceiling formaldehyde, Sensitizer, A2 Suspected Human Carcinogen
200 ppm (TWA) 250 ppm (STEL) skin for methanol

Effects of Overexposure:

The perception of formaldehyde by odor and eye irritation becomes less sensitive with time as one adapts to formaldehyde. This can lead to overexposure if a worker is relying on formaldehyde's warning properties to alert him or her to the potential for exposure.

Inhalation: May cause sore throat, coughing, and shortness of breath. Causes irritation and sensitization of the respiratory tract. Concentrations of 25 to 30 ppm cause severe respiratory tract injury leading to pulmonary edema and pneumonitis. May be fatal in high concentrations.

Ingestion: Can cause severe abdominal pain, violent vomiting, headache, and diarrhea. Larger doses may produce decreased body temperature, pain in the digestive tract, shallow respiration, weak irregular pulse, unconsciousness and death. Methanol component affects the optic nerve and may cause blindness.

Skin Contact: Toxic. May cause irritation to skin with redness, pain, and possibly burns. Skin absorption may occur with symptoms paralleling those from ingestion. Formaldehyde is a severe skin irritant and sensitizer. Contact may cause white discoloration, smarting, cracking and scaling.

Eye Contact: Vapors cause irritation to the eyes with redness, pain, and blurred vision. Higher concentrations or splashes may cause irreversible eye damage.

Chronic Exposure: Frequent or prolonged exposure to formaldehyde may cause hypersensitivity leading to contact dermatitis. Repeated or prolonged skin contact with formaldehyde may cause an allergic reaction in some people. Vision impairment and enlargement of liver may occur from methanol component. Formaldehyde is a suspected carcinogen (positive animal inhalation studies).

Aggravation of Pre-existing Conditions: Persons with pre-existing skin disorders or eye problems, or impaired liver, kidney or respiratory function may be more susceptible to the effects of the substance. Previously exposed persons may have an allergic reaction to future exposures.

Emergency First Aid Procedures:

Eye contact: Immediately flush eyes with plenty of water for several minutes. Get immediate medical attention if irritation develops.

Skin contact: Wash with plenty of running water, and soap if available, for several minutes. Get immediate medical attention if irritation develop.

Ingestion: Immediately give 3-4 glasses of milk (if unavailable, give water). DO NOT induce vomiting. If vomiting does occur, give fluids again. Get immediate medical attention. Have physician determine if patient's condition allows for induction of vomiting or evacuation of the stomach. Do not give anything by mouth to a convulsing or unconscious person.

Inhalation: Remove from area to fresh air. Get immediate medical attention. If not breathing, clear airway and start artificial respiration. If victim is having trouble breathing, give supplemental oxygen, if available.

State Warning:

California Proposition 65: Components present in this material which the State of California has found to cause cancer, birth defects or other reproductive harm are as follows:
Chemical Name(s): Formaldehyde; methanol
CAS Number: 50-00-0; 67-56-1
Typical Maximum Concentration: Not known

Massachusetts Right-to-Know: The following components of this material are included in the Massachusetts Substance List and are present at or above reportable levels:
Chemical Name(s): Formaldehyde; methanol
CAS Number: 50-00-0; 67-56-1
Typical Maximum Concentration: Not known

Michigan Critical Materials: - The following components of this material are included in the Michigan Critical Materials List:
Chemical Name(s): Formaldehyde; methanol
CAS Number: 50-00-0; 67-56-1
Typical Maximum Concentration: Not known

New Jersey Right-to-Know : The following components of this material are included in the New Jersey Hazardous Substance List and are present at or above reportable levels:
Chemical Name(s): Formaldehyde; methanol
CAS Number: 50-00-0; 67-56-1
Typical Maximum Concentration: Not known

Pennsylvania Right-to-Know: The following components of this material are included in the Pennsylvania Hazardous Substance List and are present at or above reportable levels:
Chemical Name(s): Formaldehyde; methanol
CAS Number: 50-00-0; 67-56-1
Typical Maximum Concentration: Not known

SECTION VII: PRECAUTIONS FOR SAFE HANDLING, USE AND DISPOSAL

In Case of Fire:	CAUTION! Wear appropriate protective equipment and NIOSH/MSHA approved respirator where mists or vapors of unknown concentrations may be generated (selfcontained breathing apparatus preferred).
In Case of Spill or Accidental Release:	Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. May be flushed to sewer. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802. If a leak or spill has not ignited, use water spray to disperse the vapors, to protect

	personnel attempting to stop leak, and to flush spills away from exposures.
Waste Disposal Procedures:	Dispose of in compliance with all Federal, state and local laws and regulations. Incineration is the preferred method.
Container Disposal:	Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

SECTION VIII: CONTROL MEASURES

Respiratory Protection:	In processes where mists or vapors may be generated, a NIOSH/MSHA jointly approved respirator is advised in the absence of proper environmental controls.
Local Exhaust:	Recommended where mists may be generated.
Protective Gloves:	Use good industrial hygiene practices.
Eye Protection:	Use good industrial hygiene practices.
Other Protective Equipment:	Use good industrial hygiene practices.

SECTION IX: ADDITIONAL PRECAUTIONS:

Keep containers closed when not in use. Do not contaminate drinking water, food or feed by storage or disposal. If the exposure limit is exceeded and engineering controls are not feasible, a full facepiece respirator with a formaldehyde cartridge may be worn up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. WARNING: Air purifying respirators do not protect workers in oxygen deficient atmospheres. Irritation also provides warning. For Methanol: If the exposure limit is exceeded and engineering controls are not feasible, wear a supplied air, full facepiece respirator, airlined hood, or full-facepiece self-contained breathing apparatus. Breathing air quality must meet the requirements of the OSHA respiratory protection standard (29CFR1910.134). Where respirators are required, you must have a written program covering the basic requirements in the OSHA respirator standard. These include training, fit testing, medical approval, cleaning, maintenance, cartridge change schedules, etc. See 29CFR1910.134 for details.

SECTION X: TOXICOLOGY INFORMATION

Formaldehyde: Oral rat LD50: 100 mg/kg; skin rabbit LD50: 270 uL/kg, Irritation data: eye, rabbit, 750ug Severe; inhalation rat LC50: 203 mg/m3; investigated as a tumorigen, mutagen, reproductive effector; Cancer Status: an OSHA regulated carcinogen. Methanol: oral rat LD50: 5628 mg/kg; inhalation rat LC50: 64000 ppm/ 4H; skin rabbit LD50: 15800 mg/kg; investigated as a tumorigen, mutagen, reproductive effector.

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