Material Safety Data Sheet

Asepti-Zyme Multi Enzymatic Low Foaming

Section 1. Chemical product and company identification

Trade name : Asepti-Zyme Multi Enzymatic Low Foaming
Product use : Instrument cleaner
Supplier : Ecolab Healthcare Division
5105 Tomken Road
Mississauga ON L4W 2X5
1-800-352-5326
Code : 908771
Date of issue **27-August-2008**

EMERGENCY HEALTH INFORMATION: 1-800-328-0026
Outside United States and Canada CALL 1-651-222-5352 (in USA)

Section 2. Composition, information on ingredients

Name	CAS number	% by weight
propylene glycol	57-55-6	30 - 60
triethanolamine	102-71-6	3 - 7
boric acid	10043-35-3	1 - 5
subtilisin	9014-01-1	0.1 - 1
lipase, triacylglycerol	9001-62-1	0.1 - 1

Section 3. Hazards identification

Physical state : Liquid. [Liquid.]
Emergency overview : CAUTION !

MAY CAUSE ALLERGIC RESPIRATORY AND SKIN REACTION.
MAY CAUSE EYE AND SKIN IRRITATION.

Avoid contact with eyes, skin and clothing. Avoid breathing vapours, spray or mists. Use only with adequate ventilation. Keep container closed. Wash thoroughly after handling.

Routes of entry : Skin contact, Eye contact, Inhalation, Ingestion

Potential acute health effects

Eyes : Moderately irritating to eyes.
Skin : Moderately irritating to the skin. May cause sensitisation by skin contact.
Inhalation : Slightly irritating to the respiratory system. May cause sensitisation by inhalation.
Ingestion : No known significant effects or critical hazards.

See toxicological information (section 11)

Section 4. First-aid measures

Eye contact : In case of contact, immediately flush eyes with plenty of water. Remove contact lenses and flush again. Get medical attention if irritation persists.
Skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Inhalation : If inhaled, remove to fresh air. If exposed person is not breathing, give artificial respiration or oxygen applied by trained personnel. Get medical attention.
Ingestion : Do not induce vomiting. Never give anything by mouth to an unconscious person. If irritation persists, get medical attention.

Section 5. Fire-fighting measures

Auto-ignition temperature : Not available.

Flash point : > 100°C
Product does not support combustion.

Flammable limits : Not available.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides

Fire-fighting media and instructions : Use an extinguishing agent suitable for the surrounding fire.
Dyke area of fire to prevent runoff.

In a fire or if heated, a pressure increase will occur and the container may burst.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Risk of explosion of the product in the presence of mechanical impact: Not available.

Risk of explosion of the product in the presence of static discharge: Not available.

Section 6. Accidental release measures

Personal precautions : Use suitable protective equipment (section 8). Do not allow to enter drains or watercourses.

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods for cleaning up : For small spills, add absorbent (soil may be used in the absence of other suitable materials), scoop up material and place in a sealable, liquid-proof container for disposal. For large spills, dyke spilt material or otherwise contain it to ensure runoff does not reach a waterway. Place spilt material in an appropriate container for disposal.

Section 7. Handling and storage

Handling : Avoid contact with eyes, skin and clothing. Avoid breathing vapours, spray or mists. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling.

Storage : Keep out of reach of children. Keep container in a cool, well-ventilated area. Keep container tightly closed.
Store between the following temperatures: 15 and 30°C

Section 8. Exposure controls/personal protection

Engineering measures : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Personal protection :

Eyes : Eye protection recommended.

Hands : Use chemical-resistant, impervious gloves.

Skin : Use suitable protective equipment.

Respiratory : Wear appropriate respirator when ventilation is inadequate and occupational exposure limits are exceeded.

Name	Exposure limits

propylene glycol	**CA Ontario Provincial (Canada, 3/2007).** TWAEV: 10 mg/m³ 8 hour(s). Form: aerosol TWAEV: 155 mg/m³ 8 hour(s). Form: total vapour and aerosol TWAEV: 50 ppm 8 hour(s). Form: total vapour and aerosol
triethanolamine	**CA Alberta Provincial (Canada, 10/2006).** 8 hrs OEL: 5 mg/m³ 8 hour(s). **CA British Columbia Provincial (Canada, 7/2007).** TWA: 5 mg/m³ 8 hour(s). **CA Ontario Provincial (Canada, 3/2007).** TWAEV: 3.1 mg/m³ 8 hour(s). TWAEV: 0.5 ppm 8 hour(s). **CA Quebec Provincial (Canada, 12/2006). Skin sensitiser.** TWAEV: 5 mg/m³ 8 hour(s). **ACGIH TLV (United States, 1/2008).** TWA: 5 mg/m³ 8 hour(s).
boric acid	**CA Ontario Provincial (Canada, 3/2007). Absorbed through skin. Skin sensitiser. Inhalation sensitiser.** STEV: 6 mg/m³ 15 minute(s). TWAEV: 2 mg/m³ 8 hour(s). **CA British Columbia Provincial (Canada, 7/2007).** STEL: 6 mg/m³ 15 minute(s). Form: Inhalable TWA: 2 mg/m³ 8 hour(s). Form: Inhalable **ACGIH TLV (United States, 1/2008).** STEL: 6 mg/m³ 15 minute(s). TWA: 2 mg/m³ 8 hour(s).
subtilisin	**CA Alberta Provincial (Canada, 10/2006).** C: 0.00006 mg/m³ 15 minute(s). **CA British Columbia Provincial (Canada, 7/2007). Skin sensitiser.** STEL: 0.00006 mg/m³, (as crystalline active enzyme) 15 minute(s). **CA Ontario Provincial (Canada, 3/2007).** CEV: 0.00006 mg/m³, (100% pure crystalline enzyme) **CA Quebec Provincial (Canada, 12/2006).** STEV: 0.00006 mg/m³, (as 100% pure crystalline enzyme) 15 minute(s). **ACGIH TLV (United States, 1/2008).** C: 0.00006 mg/m³, (measured as 100% pure crystalline enzyme)

Section 9. Physical and chemical properties

Physical state	:	Liquid. [Liquid.]
Colour	:	Blue. [Dark]
Odour	:	Odourless.
pH	:	6.7 to 7.7 [Conc. (% w/w): 100%]
Boiling/condensation point	:	100°C (212°F)
Melting/freezing point	:	Not available.
Vapour pressure	:	Not available.
Vapour density	:	Not available.
Odour threshold	:	Not available.
Evaporation rate	:	Not available.
LogK_{ow}	:	Not available.

Section 10. Stability and reactivity

Stability : The product is stable. Under normal conditions of storage and use, hazardous polymerisation will not occur.

Conditions of instability : Not available.

Reactivity : Not available.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Hazardous polymerisation : Under normal conditions of storage and use, hazardous polymerisation will not occur.

Section 11. Toxicological information

Potential acute health effects

Eyes : Moderately irritating to eyes.

Skin : Moderately irritating to the skin. May cause sensitisation by skin contact.

Inhalation : Slightly irritating to the respiratory system. May cause sensitisation by inhalation.

Ingestion : No known significant effects or critical hazards.

Potential chronic health effects

Carcinogenic effects : No known significant effects or critical hazards.

Ingredient name	ACGIH	IARC	NTP	OSHA
Not applicable.				

Mutagenic effects : No known significant effects or critical hazards.

Teratogenic effects : No known significant effects or critical hazards.

Reproductive effects : Hazardous by WHMIS criteria.

Sensitization to Product : May cause sensitisation by inhalation and skin contact.

Synergistic products (toxicologically) : Not available.

Toxicity data

Ingredient name	Test	Route	Result	Species
triethanolamine	LD50	Dermal	>20 mL/kg	Rabbit
	LD50	Dermal	>16 mL/kg	Rat
	LD50	Oral	2200 mg/kg	Rabbit
	LD50	Oral	2200 mg/kg	Guinea pig
	LD50	Oral	5846 mg/kg	Mouse
propylene glycol	LD50	Dermal	20800 mg/kg	Rabbit
	LD50	Oral	18500 mg/kg	Rabbit
	LD50	Oral	20300 mg/kg	Mouse
	LD50	Oral	20 gm/kg	Rat
subtilisin	LD50	Oral	3700 mg/kg	Rat

Target organs : Not available.

Section 12. Ecological information

Ecotoxicity

Ingredient name	Species	Period	Result
boric acid	Daphnia	48 hours	Acute EC50 777 mg/L
	Daphnia	48 hours	Acute EC50 226 mg/L
	Daphnia	48 hours	Acute EC50 133 mg/L
	Fish	96 hours	Acute LC50 >1100 mg/L
	Fish	96 hours	Acute LC50 >1021 mg/L
	Fish	96 hours	Acute LC50 >800 mg/L

triethanolamine	Daphnia - Water flea - Ceriodaphnia dubia - Neonate	48 hours	Acute EC50 609.98 to 658.3 mg/L Fresh water
	Crustaceans - Common shrimp, sand shrimp - Crangon crangon - Adult	48 hours	Acute LC50 >100000 ug/L Marine water
	Fish - Fathead minnow - Pimephales promelas - 30 days - 18.1 mm - 0.083 g	96 hours	Acute LC50 11800000 to 13000000 ug/L Fresh water
propylene glycol	Daphnia	48 hours	Acute EC50 >10000 mg/L
	Fish	96 hours	Acute LC50 55770 mg/L
	Fish	96 hours	Acute LC50 >62000 mg/L
	Fish	96 hours	Acute LC50 710 mg/L

Section 13. Disposal considerations

Waste disposal : The generation of waste should be avoided or minimised wherever possible. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Consult your local or regional authorities.

Section 14. Transport information

Certain shipping modes or package sizes may have exceptions from the transport regulations. The classification provided may not reflect those exceptions and may not apply to all shipping modes or package sizes.

UN Classification Not regulated.

See shipping documents for specific transportation information.

Section 15. Regulatory information

WHMIS : Class D-2A: Material causing other toxic effects (Very toxic).
Class D-2B: Material causing other toxic effects (Toxic).

This product has been classified in accordance with the hazard criteria of the *Controlled Products Regulations* and the MSDS contains all the information required by the *Controlled Products Regulations*.

Section 16. Other information

Date of issue : **27-August-2008.**

Responsible name : **Regulatory Affairs**
1-800-352-5326

Date of previous issue : **07-May-2008.**

Notice to reader

The above information is believed to be correct with respect to the formula used to manufacture the product in the country of origin. As data, standards, and regulations change, and conditions of use and handling are beyond our control, NO WARRANTY, EXPRESS OR IMPLIED, IS MADE AS TO THE COMPLETENESS OR CONTINUING ACCURACY OF THIS INFORMATION.