



World Enzymes Australia

Combining innovative chemical technology with sound engineering principles

DATE: JULY 23, 2009

P.O. Box 428 Brisbane 4066
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Sales@mite.com.au

ENZYMATIC APPLICATION RATES -THE NATURAL SOLUTION-

GREASE TRAPS

GENERAL GUIDELINES	Typical Capacity (litres)	Typical daily flow rate (litres)	Initial dose of ENZYMATIC	Maintenance dose of ENZYMATIC
Domestic (small)	25	N/A	150ml	50 ml weekly
Domestic (large)	50	N/A	300ml	50 ml weekly
Small canteen or deli	200	750	1.2 litres	200 ml weekly
Medium/large canteen, small restaurant or cafeteria	500	2,000	3 litres	75 ml daily
Large restaurant or cafeteria	1,000	5,000	6 litres	150 ml daily
Large Buildings	3,500	17,500	21 litres	525 ml daily

Contact information:

Phone/Fax: 61+ 07 3871 0508

Email: <mailto:sales@mite.com.au>

The information provided is based on actual case history histories. Due to the individual nature of each application, the seller offers no liability or warranty on the use of the product but will replace any product faulty in manufacture.

Information prepared by Brian Jackson

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DETERMINATION OF VISCOSITY (BROOKFIELD)

Principle and Definition

- 1.1 The Brookfield Dial Viscometer measures fluid viscosity at given shear rates.

Shear rate (sec^{-1}) is the speed at which the intermediate layers move with respect to each other. Viscosity is a measure of a fluid's resistance to flow.

- 1.2 Viscosity may be defined mathematically by this formula:

$$N = \text{viscosity} = \frac{F^1}{S} = \frac{\text{shear stress}}{\text{shear rate}}$$

Where $F^1 = \frac{E}{A}$ = force per unit area required to produce the shearing action (fluid movement).

The fundamental unit of viscosity measurement is the 'poise'. A material requiring a shear stress of one dyne per square centimetre to produce a shear rate of one reciprocal second has a viscosity of one poise, or 100 centipoise (CP). The equivalent units of measurement in the SI system are Pascal-seconds (Pa's) or milli-Pascal-seconds (mPa's).

$$\text{Viscosity} = 1 \text{ mPa's} = 1 \text{ CP}$$

- 1.3 The Dial Viscometer rotates sensing element in a fluid and measures the torque necessary to overcome the viscous resistance to the induced movement. This is accomplished by driving the immersed element, which is called a spindle, through a beryllium copper spring.

The degree to which the spring is wound, indicated by the red pointer, is proportional to the viscosity of the fluid.

The torque readings are converted into centipoise (CP) by using a look-up table known as "The Brookfield Factor Finder".

- 1.4 The Viscometer is able to measure over a number of ranges since, for a given spring deflection. The actual viscosity is proportional to the spindle speed and is related to the spindle's size and shape. For a material of given viscosity, the resistance will be greater as the spindle size and/or rotational speed increase.

The minimum viscosity range is obtained by using the largest spindle at the highest speed; the maximum range by using the smallest spindle at the slowest speed.

Equipment and Reagents

- Temperature-controlled water heating bath
- Thermometer (0 – 100°C range)
- Brookfield viscometer with the stand
- Set of spindles
- “The Brookfield Factor Finder”
- Power point
- 600 ml beaker
- Absorbent lint free tissue paper
- Sample to be tested

Procedure and Calculations (For Newtonian Materials)

Attach the appropriate spindle to the viscometer lower shaft by lifting the coupling screw slightly. Hold it firmly with one hand, while screwing the spindle on with the other.

Lower and centre spindle in the test material (600 ml beaker) until the meniscus of the fluid is at the centre of the immersion groove on the spindle’s shaft.

To make a viscosity measurement, turn the motor switch ‘ON’. This energises the viscometer drive motor. Allow time for the indicated reading to stabilise. The time required for stabilisation will depend on the speed at which the viscometer is running and the characteristics of the sample fluid.

When making a viscosity measurement, the reading should be noted and multiplied by the factor appropriate to the viscometer model/spindle/speed combination being used. Refer to Table 1 below or the “Factor Finder” for calculating viscosity. For maximum accuracy, readings below 10.0% torque (dial reading) should be avoided.

Turn the viscometer motor switch ‘OFF’ when changing a spindle, changing samples etc. Remove spindle for cleaning.

World Enzymes Australia

LV VISCOMETER							
Spindle 1		Spindle 2		Spindle 3		Spindle 4	
Spindle Speed	Factor	Spindle Speed	Factor	Spindle Speed	Factor	Spindle Speed	Factor
0.3	200	0.3	1M	0.3	4M	0.3	20M
0.6	100	0.6	500	0.6	2M	0.6	10M
1.5	40	1.5	200	1.5	800	1.5	4M
3.0	20	3.0	100	3.0	400	3.0	2M
6.0	10	6.0	50	6.0	200	6.0	1M
12.0	5	12.0	25	12.0	100	12.0	500
30.0	2	30.0	10	30.0	40	30.0	200
60.0	1	60.0	5	60.0	20	60.0	100

M = 1000

To change the spindle speed, rotate the square speed control knob on the left hand side. There are two speed numbers on each of four faces, by moving the knob through two complete turns, speeds may be changed in sequence.

No trouble will be experienced in differentiating between the two speeds shown on each face since each pair is in the ratio of 20:1.

To convert the viscometer dial reading to a viscosity value in units of centipoise, multiply the reading noted on the dial of the viscometer by the appropriate factor shown in Table 1.

$$\text{Dial reading} \times \text{Factor} = \text{Viscosity in CP (mPa's)}$$

LVT Viscometer with No.1 spindle at 6 rpm

Dial reading : 75 Factor : 10

$$75 \times 10 = 750 \text{ CP (mPa's)}$$

The interpretation of results and the instruments use with non-Newtonian and thixotropic materials is discussed in the booklet "More Solutions to Sticky Problems" and in Appendix C of Brookfield Dial Viscometer – Operating Instructions.

Reference

- Brookfield Dial Viscometer - Operating Instructions
- "More Solutions to Sticky Problems" - A Guide to getting more from your Brookfield Viscometer.
- "Brookfield Factor Finder"

Information prepared by Brian Jackson

THANK YOU FOR YOUR INTEREST!

Enzymatic**Product Features and Benefits**

- ENZYMATIC** is a high performance, non-toxic and bio-degradable multiple enzyme at the forefront of the modern Australian bio-technology industry. It breaks down oils and greases in septic tanks, sludge treatment ponds, grease traps, floors, drains and pipes making it easier for the bacteria to consume any organic waste matter. At the same time, it rapidly eliminates odours.

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Product Features and Benefits

Product name: Enzymatic

Product category: ~~Odour and effluent Digestion- soil stabilisation and Dust control.~~

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Top 9 Features <i>(What it does in)</i>	Benefits <i>(Why it is important)</i>	Proof <i>(Why it is true)</i>
1. EFFECTIVE OVER A WIDE RANGE OF PH LEVELS AND TEMPERATURES	Because it is in a liquid form, bacterial stimulation is immediate and there are no residues.	Independent laboratory results. Click here (when on line)
2. THE USE OF ENZYMES TO IMPROVE THE BIOLOGICAL DEGRADATION OF ORGANIC MATTER IS WELL KNOWN.	It has been found especially advantageous to add quantities of a number of enzymes directly into septic tank systems and sludge treatment ponds so that catalytic reactions can digest organic impurities and stimulate and accelerate natural bacterial action.	Independent laboratory results. Click here (when on line)
3. GREASE TRAPS, SEPTIC TANKS AND SLUDGE TREATMENT PONDS	ENZYMATIC emulsifies and digests grease and other organic contaminants that cause expensive pump-outs and foul odours. With conditioned use, ENZYMATIc will keep grease traps, drain lines, garbage disposals, septic tanks, leach drains, and sludge treatment ponds free flowing and odourless	Independent laboratory results. Click here (when on line)
4. LEACH DRAINS & SULLAGE PITS	ENZYMATIC will rejuvenate clogged leach drains and sullage pits and restore the absorption field to full capacity. Eliminating and/or significantly reducing expensive maintenance.	MSDS and environmental impact document available.
5. ODOUR ELIMINATION	ENZYMATIC works to eliminate odour by changing the molecular structure of the host environment. Reaction time is instantaneous. Normally present bacteria produce odours while decomposing nutrients. Hydrogen sulphate is the most infamous. Enzymatic does not produce malodorous compounds. Rather, it uses them in its unique metabolic process thus an advantageous synergistic relationship is formed	See more information. Click Here (when on line)
6. REDUCES BOD'S AND SUSPENDED SOLIDS	Reduces levels of Biochemical Oxygen Demand (BOD) by enzymolysis through decomposition or conversion of the contaminants. A Mr. Brian May of West Australia Water Authority has conducted tests with Enzymatic over twenty four months and has continued to re order Enzymatic as reductions in BOD's and suspended solids in the order of 30- 40% are being achieved.	See more information. Click Here (when on line)
7. NO RECONSTITUTION DOWN THE LINE	There are many users of Enzymatic who will testify that previously clogged and dysfunctional grease traps, septic tanks and leach drain systems have begun to operate effectively as a result of continual usage of Enzymatic. This process can take anything from a few weeks to a few months to take effect.	See more information. Click Here (when on line)
8. ENZYMATIc DIGESTION	Otherwise known as enzymolysis, being the decomposition or conversion of contaminants by one or more enzymes.	This has been proven over 17 years in the field along with independent laboratory testing.
9. THE BIOCATALYTIC PROCESS	The Biocatalytic process is simply understood in terms of the 'key lock' hypothesis where the active sites on large enzyme molecules are envisaged as locks into which the contaminant molecules - or keys - are inserted and subsequently digested.	See more information. Click Here (when on line)

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Suited to most waste water systems and remedial treatment of soils and water.

[View our online manual \(when on line\)](#)

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Enzymes and Odour Control

THE NATURAL SOLUTION

How Enzymatic Works

Enzymatic is a high performance, non-toxic and 100% biodegradable multiple enzyme at the forefront of the modern Australian biotechnology industry. It breaks down oils and greases in septic tanks, sludge treatment ponds, grease traps, floors, drains and pipes making it easier for the bacteria to consume any organic waste matter. At the same time, it rapidly eliminates odours.

Enzymatic is effective over a wide range of pH levels and temperatures. Because it is in a liquid form, bacterial stimulation is immediate and there are no residues. The use of enzymes to improve the biological degradation of organic matter is well known. It has been found especially advantageous to add quantities of a number of enzymes directly into septic tank systems and sludge treatment ponds so that catalytic reactions can digest organic impurities and stimulate and accelerate natural bacterial action.

ODOUR ELIMINATION

Enzymatic works to eliminate odour by changing the molecular structure of the host environment. Reaction time is instantaneous. Normally present bacteria produce odours while decomposing nutrients. Hydrogen sulphide is the most infamous. Enzymatic does not produce malodorous compounds. Rather, it uses them in its unique metabolic process thus an advantageous synergistic relationship is formed. To control organic odour on tip face and in transfer stations Enzymatic is sprayed in a diluted form to capture the air born sulphides, return them to the ground to continue the digestion of the organic waste. Enzymatic is not a masking agent; it digests the cause of the odour so it cannot return. Enzymatic is passed by AQIS [DPI] and MAF[NZ] for use in food preparation areas for odour control and surface cleaning.

GREASE TRAPS, SEPTIC TANKS AND SLUDGE TREATMENT PONDS

Enzymatic emulsifies and digests grease and other organic contaminants that cause expensive pump-outs and foul odours. With conditioned use, Enzymatic will keep grease traps, drain lines, garbage disposals, septic tanks, leach drains, and sludge treatment ponds free flowing and odourless. There are many organisms naturally in traps and lines. Few affect animal and vegetable fats and oils. In order to deal effectively with grease biologically, it is necessary to induce a population shift from undesirable to desirable organisms (i.e., to dominate microbial activity). Bioaugmentation with Enzymatic accomplishes this dominance. Grease is digested by Enzymatic and converted to fatty acids, glycerol's, carbon dioxide and water. This process is called solubilisation. It inherently prevents rebinding of the grease recreating the problem further down the line as can happen when using chemicals and solvents. Some of the other by-products of solubilisation become nutrients for other bacteria present to further reduce accumulation.

LEACH DRAINS & SULLAGE PITS

Enzymatic will rejuvenate clogged leach drains, sullage pits and restore the absorption field to full capacity eliminating and/or significantly reducing expensive maintenance

BOD'S AND SUSPENDED SOLIDS

Reduces the levels of biochemical oxygen demand (BOD), by enzymolysis through decomposition and conversion of the contaminants. A Mr. Brian May of West Australia Water Authority has been conducting tests with Enzymatic over twenty four months and has continued to re order Enzymatic as reductions in BOD's and suspended solids in the order of 30- 40% are being achieved. The paper is being written but is at this stage six months over due. Brian May himself is enthusiastic about the products potential and has agreed to act as a verbal referee. Should you wish to contact him please phone our Brisbane office for contact details.

RECONSTITUTION

There are many users of Enzymatic who will testify that previously clogged and dysfunctional grease traps, septic tanks and leach drain systems have begun to operate effectively as a result of continual usage of Enzymatic. This process can take anything from a few weeks to a few months to take effect. It is our firm belief that if reconstruction were occurring then these systems would block up again relatively quickly. The evidence is the opposite with our largest user, Baldivis Poultry Pty Ltd who have been using the product for approximately for 4.5 years. His leach drain has never worked as well despite a four fold increase in his chicken processing works.

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ENZYMATIC MODE OF ACTION

Microorganisms

There are proprietary organisms present in Enzymatic. Other microorganisms are also present and can vary slightly from batch to batch.

In the manufacturing process, the biological activity is controlled and arrested by the addition of proprietary compounds. The microorganisms are not killed by this procedure and remain viable for an indefinite period.

Under certain conditions, for example high temperature, dilution with water or addition of a fresh food source, biological activity can restart. This is an important property of the material for its efficacy.

Enzymes

All the enzymes present in Enzymatic are naturally occurring enzymes. The enzymes actually present in the product are formed in the manufacture of the product and stabilized by the same process used to arrest the biological activity.

Mode of Action of Enzymatic

For its efficacy, Enzymatic does not rely solely on either the organisms or the enzymes present in the product. The principle mode of action is to stimulate the growth of microorganisms naturally present in the substrate. These naturally occurring organisms then accelerate the degradation of the substrate.

In the manufacture of Enzymatic, a natural substrate is used as a food source for certain carefully selected microorganisms. Together with certain essential nutrients added during the manufacturing process, this produces a complex micronutrient blend that acts as a powerful stimulant to microbial activity.

What part the microorganisms and enzymes in Enzymatic play in its activity will depend on the substrate. In some instances, the action of the Enzymatic may depend entirely upon the organisms naturally present in the substrate with the product acting solely as a stimulant to the naturally present organisms. In other situations some of the organisms present in Enzymatic will be stimulated into activity by the substrate.

In either situation, it is the enzymes produced *in situ* by the enhanced biological activity that is the major contributor to degradation of the substrate. The enzymes actually present in the product may only act as an initial catalyst for further biological activity.

Enzymatic also contains a powerful biodegradable surfactant. The purpose of this material is to break down oil, grease and penetrate hydrophobic surface layers on waste material that can inhibit or prevent biological activity even under otherwise ideal conditions. In all cases the surfactant substantially increases the surface area of the hydrophobic material dramatically accelerating its rate of degradation.

Consequently it is not prudent to make blanket claims for all waste environments and individual, site by site testing is the best approach to ensure efficacy on a case-by-case basis.

Shelf life of Enzymatic

Biological materials and enzymes are easily destroyed by adverse conditions making products that depend solely on these materials for their action susceptible to limited shelf life and variable performance.

Enzymatic is stabilized using a very robust method that has proven itself effective over nearly 17 years of production experience. The unopened product has a shelf life in excess of two years from the date of manufacture; approximately the minimum length of time that experience has shown the inherent biological activity to remain constant. However, the product remains efficacious for much longer because its principal mode of action (stimulation of naturally occurring biological activity) is not adversely affected by prolonged storage even under relatively harsh conditions e.g. high temperature.

In any event, the maximum shelf life of the unopened product is considered to be five years because after this length of time packaging materials tend to deteriorate, there is a possibility of contamination of product, or deterioration due to prolonged storage under adverse conditions.

Thursday, July 23, 2009

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ENZYMATIC APPLICATION RATES

-THE NATURAL SOLUTION-

SEPTIC SYSTEMS

GENERAL GUIDELINES	Typical capacity (litres)	Typical daily flow rate (litres)	Initial dose of ENZYMATIC	Maintenance dose of ENZYMATIC
Domestic (small) Domestic (large)	1,000 2,000	250 500	1.5 litres 3 litres	200 ml weekly 400 ml weekly
Small canteen or dell	2,000	1,000	3 litres	100ml daily
Medium/large canteen, small restaurant or cafeteria	5,000	2,000	7 litres	250 ml daily
Large restaurant or cafeteria or small hotel/club/motel or caravan park	5,000	5,000	7 litres	400 ml daily
Large hotel/club/motel/ or caravan park	10,000	20,000	14 litres	2 litres daily

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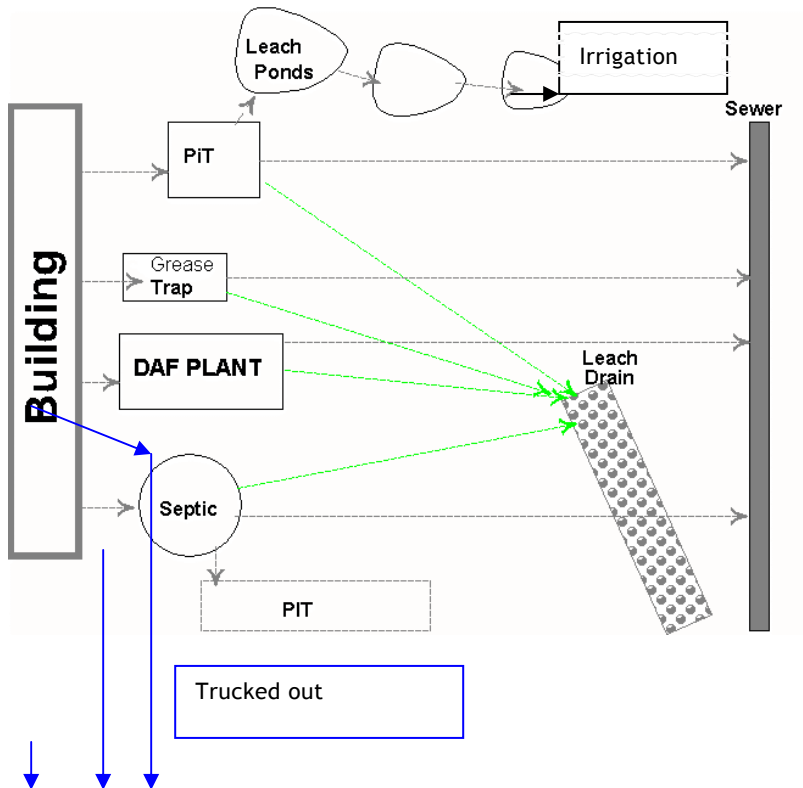
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Mud Map of information



Please clearly mark the system that matches as near as possible along with figures and dimensions. If the system is not shown please draw a mud map.

Required Information:

- Flow rate of waste
- Pit, DAF, septic, grease trap or ponds capacity and number.
- What is the clients main concern
- Are there any analytic reports available

Place your answers to the above questions on the drawing or in the notes below.
If your system is different please show how.

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VERIFYING CERTIFICATE OF ANALYSIS FOR ENZYMATIC

a) Observation

Observe and confirm the physical form to be a viscous dark brown liquid and the odour to be of a sweet characteristic nature. If so, product complies.

b) Laboratory Tests

- (i) Specific gravity: Using standard hydrometer that covers the range 1 - 1.1, read off specific gravity after placing 100mL of Enzymatic Concentrate and hydrometer in a measuring cylinder. If reading is between 1 and 1.1, the product complies.
- ii) pH: Use a 2 point calibrated pH meter (calibration points 4.5 and 7). Insert probe into liquid. Take reading when value has equalised. If pH is between 3 and 5 product complies.
- iii) Viscosity: Submit a sample to a laboratory that has a Brookfield viscometer or equivalent test method that can be converted to centipoise (i.e. dynamic viscosity). Laboratory will have its own procedure. If the result is between 130 – 160 cps at 20°C product conforms.



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Waste Treatment Lagoons, Clarifiers, Digesters, Leach Ponds and Oil Spills

ENZYMATIC is a highly concentrated, proprietary blend of selected natural micro-organisms, essential nutrients, and synergists which help degrade the high concentrations of fat, grease, blood, floating matter, and organic matter found in processing wastes from meat plants, (poultry, fish, beef, pork, etc.). It is effective in anaerobic and aerobic lagoons, aerated systems, and trickling filters. It degrades materials, which reduce BOD, and COD, improves settling in clarifiers, and reduces suspended solids. ENZYMATIC will quickly destroy grease and fat build-up in grease Interceptors, drains, sewer lines, pumps and lift wells, and is suitable for use in Meat, Poultry, Piggeries, and Egg Production. Regular use will also help--

- Reduce overall sludge volume in clarifiers, DAF plants and treatment lagoons through enhanced biodegradation and help cause good settling characteristics.
- Provide optimised degradation of organic wastes; including fecal, blood and fats from animal slaughterhouses, meat and poultry produce processors.
- Reduce the population of hydrogen sulphide forming bacteria and odours associated with them.
- Improve anaerobic digestion and increase production of useful methane gas from indigenous Metho genic bacteria, by providing partially digested substrate for these bacteria to further metabolise.
- Digests Hydrocarbon deposits and sludge in seawater, fresh water and soils.

HOW IT WORKS:

ENZYMATIC is a high performance, non-toxic and biodegradable multiple enzyme at the forefront of the modern Australian biotechnology industry. It breaks down oils and greases in septic tanks, sludge treatment ponds, grease traps, holding tanks, floors, drains and pipes making it easier for the bacteria to consume any organic waste matter. At the same time, it rapidly eliminates Odour. ENZYMATIC is effective over a wide range of pH levels and temperatures. Because it is in a liquid form, bacterial stimulation is immediate and there are no residues. It can also be sprayed and used for a wide range of general purpose cleaning problems including oil spills large and small.

FEATURES

- Deodorises by destroying the molecular structures which cause odour problems
- Reduces levels of Biochemical Oxygen Demand (BOD) by enzymolysis through decomposition or conversion of the contaminants
- Fully neutralises contaminants as a biodegradable cleaner
- Digests Hydrocarbons, grease and oils by up to 60% in 5 days
- Digests sludge by 40% to 60%
- Safe to use, is non-toxic, non-allergenic and non-inflammatory
- Is totally environmentally compatible
- Biodegrades the removed organic contaminant

- Leaves no residue other than oxygen and water
- Functions equally in fresh or salt water
- Function in aerobic and anaerobic systems

ODOUR ELIMINATION

ENZYMATIC works to eliminate odour, by changing the molecular structure of the host environment. Reaction time is instantaneous

When placed into an aqueous system containing certain essential nutrients, ENZYMATIc cultures become the dominant organisms in the system and bio-convert the organic contaminants into fractions of smaller molecular size. When maintained as the dominant organism in the treatment system through control of environmental conditions and periodic addition of fresh cultures, BOD and COD reductions of over 80% can be anticipated for many organic wastes within a few weeks.

ENZYMATIC cultures are facultative anaerobes and achieve the bioconversion of organic compounds through both catabolic and metabolic enzyme digestion, under both aerobic and anaerobic conditions. Although ENZYMATIc cultures function well in both conditions, their efficiency is improved if oxygen is plentiful in the treatment environment. Usually, shallow circulating bodies of water contain adequate levels of DO (dissolved oxygen).

Confined treatment sites such as stagnant lakes, ponds, drainage ditches, and municipal or industrial waste treatment clarifiers, DAF plants and lagoons should be artificially aerated to optimise bio-treatment efficiency.

In addition to carbon and oxygen, the natural bacteria in the system require certain trace elements for successful growth. These include nitrogen, phosphorus, calcium, magnesium, zinc, iron, sodium and sulphur. Enzymatic treatment includes trace elements so that this growth is assured and the environment is natural and effective.

ENVIRONMENTAL SAFETY:

ENZYMATIC cultures are a blend of facultative anaerobes originally derived from the soil, which utilise non-living organic matter as a food source. The cultures are not harmful to either aquatic or land plants or animals and have been released into marine and fresh water treatment areas with ecological safety. Enzymatic is 82% biodegraded in just 14 days and totally biodegraded in 28 days.

PACKAGING:

ENZYMATIC is in liquid form and packed in 20Litre, 200Litre plastic drums plus 1000 Litre IBC.

STABILITY:

When stored under normal conditions of temperature and humidity, the cultures are stable for a minimum of 2 years. Freezing has no significant effect on the cultures; however, they must be thawed prior to use

PHYSICAL DATA

APPEARANCE:	LIGHT BROWN VISCOUS SOLUTION
ODOUR:	PLEASANT HERBAL
MISCIBILITY WITH WATER	UNLIMITED
MISCIBILITY WITH OTHER SOLVENTS:	UNLIMITED
SPECIFIC GRAVITY:	1.02KG/L AT 20°C
ACTIVE PH RANGE:	4.5 TO 8.5
VISCOSITY (20°C) CONCENTRATE:	0.13-0.25 DYNES/CM ² OR 13-25 CPS
	(BROOKFIELD)

DECOMPOSITION: 82% IN 14 DAYS

FIRE & EXPLOSION HAZARD DATA

FLASH POINT: NONE
AUTO IGNITION TEMPERATURE: NONE
NON-FLAMMABLE

HEALTH HAZARD DATA

HEALTH HAZARD NONE
TOXICITY: NON-SIGNIFICANT
EFFECTS OF OVER-EXPOSURE -
EYE CONTACT MODERATE IRRITANCY
SKIN CONTACT NEGLIGIBLE
SKIN ABSORPTION NOT LIKELY TO BE ABSORBED IN TOXIC AMOUNTS
ACUTE ORAL LD50: NONE (.10G/KG)
ACUTE DERMAL TOXICITY: NONE (.2G/KG)

EMERGENCY & FIRST AID PROCEDURES

EYE CONTACT:

FLUSH EYES WITH LOW PRESSURE WATER FOR UP TO 15 MINUTES. IF IRRITATION PERSISTS, SEEK MEDICAL ADVICE.

SKIN CONTACT:

IF CHRONIC SKIN EXPOSURE, WASH WITH SOAP AND WATER. INGESTION IF SWALLOWED IN LARGE QUANTITIES, INDUCE VOMITING.

NOTE TO PHYSICIAN

TREAT SYMPTOMATICALLY

The effective use of ENZYMATIC cultures in a bio-treatment program is dependent upon the environmental conditions present at the site. Adverse conditions such as cold temperatures, oxygen, nitrogen, or phosphorus deficient water, chemical toxic load, highly acidic/alkaline Ph or excessive dilution of biomass through inadequate dosage, may retard or prevent the cultures from becoming dominant in the treatment system. Under such conditions, a pilot scale application study should be made to determine the organic degradation efficiency and dosage schedules.

Information prepared by Brian Jackson

THANK YOU FOR YOUR INTEREST!