



WORLD HEADQUARTERS:

CALFARME (SINGAPORE) PTE LTD

AMK TechLink, 20 Ang Mo Kio Industrial Park 2A #06-18 Singapore 567761

E-mail: singapore@calfarme.com Skype: cleanbio

Tel: 65564111 Fax: (65) 65562444

Contact your Calfarme representative:



Come on board the Calfarme Business Network

A REWARDING BUSINESS OPPORTUNITY FOR TODAY AND THE FUTURE



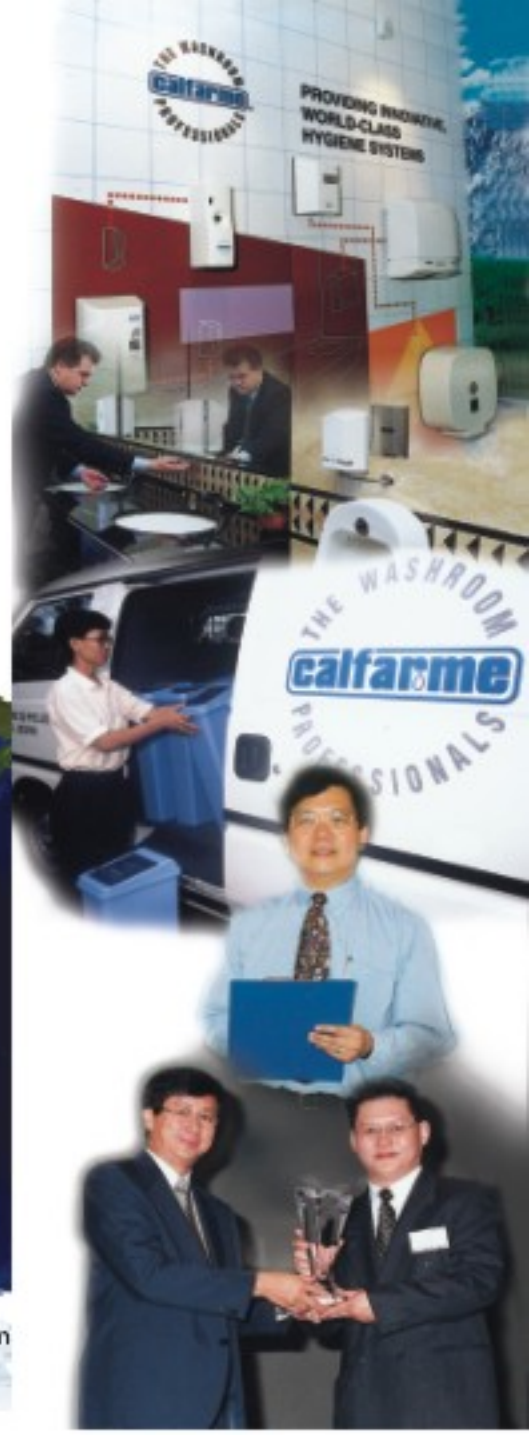
biocleaning & hygiene



Biological Solutions That Protect The Environment

Since 1977

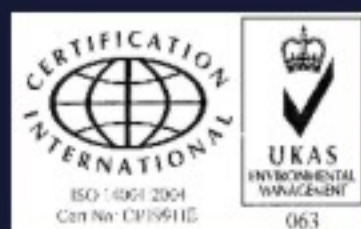
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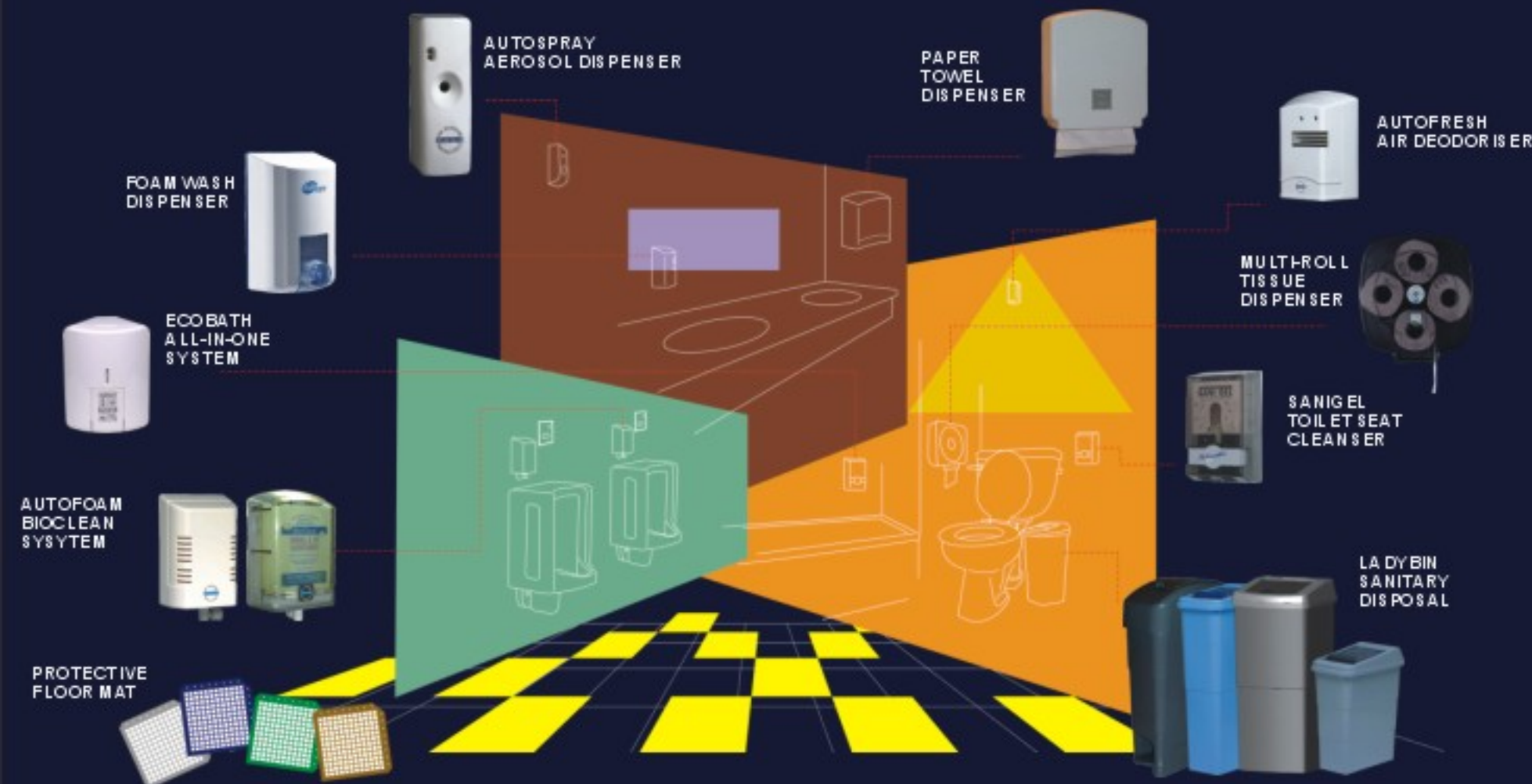
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AWARDED:
 PROMISING FRANCHISOR OF THE YEAR, 1998
 PIONEER RECIPIENT OF SINGAPORE FRANCHISE MARK
 ISO 9001:2000 QUALITY MANAGEMENT SYSTEM CERTIFICATION
 ISO 14001:2004 ENVIRONMENTAL MANAGEMENT SYSTEM CERTIFICATION



Calfarme's total washroom program



**SUPERIOR, TANGIBLE BENEFITS WITH A WORLD-CLASS,
ENVIRONMENTALLY FRIENDLY PRODUCT RANGE**

COMPANY PROFILE

Calfarme was formed in Singapore in 1977 and since then, has steadily grown and established itself as a leading company in washroom hygiene and bio-enzymatic cleaning products.

Calfarme's success derives from its focused in this industry, Calfarme has no equal worldwide in being an integrated product development, manufacturing and services company. This structure allows the company to deliver superior customer benefits at highly competitive price levels.

Calfarme has a complete world-class product range that includes automatic toilet maintainers, soap dispensers, organic air fresheners, metered aerosol systems for air sanitizing, insect and odor control, toilet tissue dispensers, automatic dispensers for toilet seat cleansing or waterless hand sanitizing, anti-slip protective floor mats and sanitary waste bins.

Calfarme dispensers and equipment are designed to be reliable, functional, cost-effective and very easy to maintain. Available together with Calfarme's product range are consumable materials and refills which include natural organic gels for air freshening, aerosol fragrances and insect control products, quality liquid soap, body and hair shampoo products.

Bio-enzymatic formulations are also produced by Calfarme for cleaning and maintenance applications. Calfarme has pioneered this particular aspect of biotechnology for washroom hygiene and cleaning.

Calfarme's knowhow in cleaning technology has led the company to develop a wide range of products that are used outside of washrooms. Now used for special building and facilities maintenance needs, these products also cater to the household consumer market.

Calfarme believes that operational excellence should be complimented by a product range that is supportive of environmental protection. For this reason, we have products that comprise mainly biodegradable or recyclable materials.

In chemical cleaning and deodorizing products, for example, we utilize biotechnology to do away with traditional polluting and hazardous chemicals. For fragrances, we use extensively natural organic-based ingredients.

Having achieved the ISO 9001:2000 & ISO 14001:2004 certification covering design, manufacture and supply operations, all company functions are structured to achieve consistently high levels of customer satisfaction.

We are proud to introduce Calfarme's exciting range of hygiene products that truly satisfy customer needs, truly innovative and truly world-class.

QUALITY COMES FIRST TO CALFARME WITH
A RESPONSIVE AND CARING SERVICE PHILOSOPHY.

CELEBRATING MORE THAN
30
YEARS
FOR CLEANEST, CONVENIENT
AND PLEASANT ENVIRONMENT

TRULY, DEFINITELY AND CONSISTENTLY ACHIEVABLE
WITH CALFARME, THE WASHROOM PROFESSIONALS.

To millions of people throughout the world, Calfarme products have become synonymous to clean and pleasant washroom facilities. Calfarme, the Washroom Professionals deliver a complete, cost-effective and environment-friendly system and services that satisfy modern washroom users.



SDW Series

Practical, Well-Designed and Durable Soap Dispenser



MODEL: ASDW-950

CALFARME REFILLABLE SOAP DISPENSER

- Designed specifically for use in all washroom and shower areas
- Perfect for Hotels, Recreation Clubs, Health Spas, Medical Centers, Restaurants, Factories, Offices and Homes
- Easy installation with heavy-duty adhesive tape or permanent screw mounting provided

PRESS TYPE SOAP DISPENSER

General purpose, manual press type soap dispenser

DISPENSING DO SAGE: Max. 1 ml.

Models:

SDW-1000 (White Cover/1 liter Refillable)

SDT-1000 (Smoke Grey Transparent Cover/1 liter Refillable)

DIMENSIONS - 24cm(H) X 14cm(W) X 9cm(D)



MODEL: SDW-1000

AUTOMATIC SOAP DISPENSER

No touch, infra-red sensor soap dispenser with manual option

DISPENSING DOSAGE: Approx. 0.5 ml.

ASDW-950 (White ABS Cover/1 liter Refillable)

ASDT-950 (Smoke Grey Transparent Polycarbonate Cover/1 liter Refillable)

SPECIFICATIONS:

POWER SUPPLY: 3 "C" cell alkaline batteries

DETECTING DISTANCE: Preset at 10cm, 2 - 20cm adjustable.

RESPONSE TIME: 1.2 seconds

BATTERY LIFE: 12 months or 50,000 usages

DIMENSIONS - 24cm(H) X 14cm(W) X 9cm(D)

WARRANTY: 5 years (Terms & Conditions apply)





SAVE WATER - Press & apply Foam onto hands, rub well before rinse with water.



SDW-1700ML

FOAMCARE SYSTEM

Refillable Foam Dispenser creates instant foaming for quicker hand wash, control usage and reduces water requirement.



CSD-950MLW/CSD-950MLT

FOAMCARE Refillable Foam Dispenser is designed to be installed at corners as well as front facing on shower walls or mirror surfaces near washbasins. New unique, patented technology allows precise mixing of liquid and air, resulting in a dose of high quality foam with each single stroke of a smooth action button.

ADVANTAGES OF FOAMCARE REFILLABLE FOAM DISPENSER:

1. Instant foaming effect for a quicker and easier wash that helps improve hygiene
2. Reduces water requirement compared to traditional washing cream or lotion
3. Controls usage with longer interval between refilling and ensure cost saving

FOAMCARE creates instant foaming for specially formulated Foaming Hand and Body Wash, and Baby Shampoo products.



SPECIFICATIONS:

MODEL NO: CSD-950MLW(White), CSD-950MLT(Transparent)
 REFILLABLE CAPACITY: Maximum 950ml
 DOSAGE: 2,375 washes per refill
 OUTPUT ML: 0.4ml per dose
 DIMENSIONS: 210mm(H) X 155mm(W) X 85mm(D)
 MATERIALS: DURABLE ABS/POLYCARBONATE PLASTIC

MODEL NO: SDW-1700MLW(White), SDW-1700MLT(Transparent)
 REFILLABLE CAPACITY: Maximum 1,700ml
 DOSAGE: 4,250 washes per refill
 OUTPUT ML: 0.4ml per dose
 DIMENSIONS: 240mm(H) X 145mm(W) X 115mm(D)
 MATERIALS: DURABLE ABS/POLYCARBONATE PLASTIC



All-in-one Foam Wash
Ultra-Mild Foam Wash
Anti-bacterial Foam Wash
 Standard Packing:
 4x5 liters Per Carton

E.C.O.G.E.L™

WATERLESS HAND CLEANSER/INSTANT SANITIZER

Sure Clean, Sanitize & Dry the Hands Hygienically in 15 seconds.

- No Water, No Paper Towels or Electric Hand Dryer needed.
- Kills 99.99% of most common germs that may cause illness within 15 seconds.
- Can clean hands fast, removes dirt and grime without water.

Eco-friendly & Convenient - Save Water, Save Time, Skin Safe and Hygienically-Cleaned.

ECOGEL is a 70% Ethyl Alcohol formulation with moisturizers to leave hands feeling soft and refreshed. Non-toxic. Leaves no harmful residue.

DIRECTION FOR USE: Apply ECOGEL onto hands and rub thoroughly until dry. Ideal for use by food handler and health care personnel. (At Healthcare, manufacturing, food service, school, childcare, home, office, shopping mall and public facilities at toilets with or without water, outdoors, buses, trains, lifts, door handles and the counters of banks & other institutions)

AUTOMATIC SENSOR ECOGEL DISPENSER WITH MANUAL PUSH BUTTON

MODEL NO: ASDT-950(PC/TRANSPARENT) & ASDW-950(WHITE/ABS)
REFILL CAPACITY: 1,000ML
DIMENSIONS: 240mm(H) X 145mm(W) X 115mm(D)

ECOGEL is now available in a convenient 60ml for personal protection. Ideal for outdoor, traveller and people on the go.

E.C.O.G.E.L
NON-FRAGRANCE



MANUAL PUSH BUTTON ECOGEL DISPENSER
MODEL NO: SDW-950(WHITE/ABS)
REFILL CAPACITY: 1,000ML
DIMENSIONS: 240mm(H) X 145mm(W) X 115mm(D)

ECOGEL REFILL: Packed in 1,000ml Disposable Cartridge System for use in both manual and sensor-operated ECOGEL Dispenser. Specially designed for fast and easy loading. It empties completely with no wastage and is easily disposable after use. Each cartridge comes with a new dispenser valve that ensures no-leaks and no-clogs. Hermetically-sealed bags keep product fresh and contamination free.

REFILLS PACKING:

12 X 600ml disposable sachet per carton
12 X 1000ml disposable sachet per carton



EasiGel Instant Hand & Body Cleanser

Mild & smoothing,
Removes bodily odors
Suitable for sensitive skin

EasiGel is a 70% Ethyl Alcohol formulation that effectively clean without water. It evaporates quickly leaving hands refreshed and moisturized. Also remove bodily odors from underarm, feet and sensitive skin.

TO USE: Apply EasiGel to hands and rub thoroughly until dry. Kills bacteria, germs, clean dirt and grime within seconds.

TESTED NON-TOXIC AND HARMLESS TO SKIN



EasiGel in 500ml



EasiGel in 30ml



MODEL: CSD-900E



600ML SOAP-IN-BAG DISPOSABLE CARTRIDGES DESIGNED FOR FAST AND EASY LOADING. Sanitary sealed bags give extra hygiene assurance and empty completely without wastage.

ECOBATH ALL-IN-ONE HAIR & BODYWASH SYSTEM

An innovative product to provide your guests, customers and family members with a convenient, high quality hair and body bathing system.

ECOBATH ALL-IN SYSTEM - one product, one system, multi uses. The result of almost a decade of research and development work, ECOBATH represents a breakthrough in formulation technology. At last, it is now possible to have just one highly functional product to cover all hair and body cleansing needs.

The ECOBATH DISPENSER is a robust, reliable and easy-to-install equipment.

Built to last, and designed for trouble-free maintenance, it has a universally accepted appeal and would complement any modern bathroom environments.

The use of ECOBATH DISPENSERS in the shower and washbasin areas adds up to a complete hand and skin washing facility that is neat, convenient, hygienic and which allows no wastage.

ECOBATH is a premium shower creme, hair shampoo and lotion skin cleanser formulation designed to cater to the high standards of discriminating users.

ECOBATH multipurpose character appeals to managers and housekeepers everywhere. The product's versatility cuts down the number of shampoos and soaps required for purchasing and stocking, thus saving costs.



MODEL: SDW-950E



Packing: 4x5 litre per Carton

ECOBATH comes in three variant fragrances:

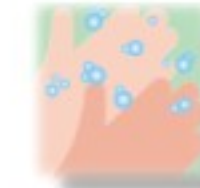
PEARL CREME - A classic scent with an airy invigorating quality

TEA TREE OIL - A mildly medicated formulation that comes with the refreshing scent of fragrant plants

PINK FLORAL - An enchanting blend of sensual floral notes

Perfect for hotels, recreation clubs, health spas, medical centres and homes.

The neutral pH and biodegradable ingredients place no strain on effluent systems.



MAD-9900^{WP}



MAD-9900

DETACHABLE MECHANISM

Operates on 2 D-cell batteries

BUILT-IN CLOCK FUNCTION

DAILY START/STOP TIME

DAY-OFF SETTING

SPRAY COUNTER

*SPRAY INTERVAL SETTING
(MINIMUM 1 MIN TO 60 MIN)*

LED Battery Indicator

MODEL: MAD-6000WS/MAD-9900WP
DIMENSIONS: 23.50 M(H) X 9.00 M(W) 8.50 M(D)



AUTOSPRAY Metered Aerosol System

for Automatic Air-Sanitizing, Odor & Insect Control - Calfarme's state-of-the-art programmable Metered Aerosol Dispenser achieves intelligent dispenser operation for convenience and cost control.

MAD-6000

DETACHABLE MECHANISM

Day/Night Auto-light sensor

Operates on 1 or 2 D-cell batteries

*Spray setting at 5 minutes,
7.5 minutes or 15 minutes*

LED Battery Indicator

FRESHMATE Metered Air Refresher, each refill delivers a fine aerosol mist that cleans the air, neutralizes odor and helps reduce airborne bacteria. It effectively eliminates cigarette smoke and unpleasant odors associated with sweat, animals or foods.



CALFARME manufactures aerosols refills with a range of popular air freshening fragrances. Available in 3,200 metered sprays and 5,400 metered sprays and is normally effective for a space volume of 6,000 cubic feet.

FRAGRANCES: Floramelon, Six-flowers, Jasmine, Pinky, Morning-Mist, Midnight-Scent, Talcum, Violet, Cologne, Citrus, Delicious Apple, Pot Pourri, Kopi, Vanilla, Bio-V Citrus etc.

Carton Packing: 12 x 300ml Wt: 3.45 kg (27 X 21.5 X 15.5cm)



Touch Me™ Freshmate Air Freshner



TOUCH ME FRESHMATE Air Freshener is designed for easy installation on wall with tapes or screw mounting. Easy press for convenient, instantly and effectively control of odors that brings you lasting freshness to your room and environment.



PROMOTIONAL PACKING:
TWIN PACK 300ML AEROSOL CAN INCLUSIVE
1 UNIT WALL MOUNTED SCREW/TAPE ON
TOUCH ME DISPENSER FREE

PACKING: 24 sets per carton



Easy Installation:



Tape Mounting



Permanent Screw Mounting



Replace Aerosol Can Refill



Close the Press Cover and Press to Spray

TOUCH ME FRESHMATE with special odor neutralizing agent that eliminates cigarette smoke and unpleasant odors associated with sweat, waste, pets & animals, stale food and habitations.

FRAGRANCES: Citrus, Flors-Melon, Jasmine, Morning Mist, Midnight Scent etc

REFILL TYPE: 3,200 metered sprays,
5,400 metered sprays & continuous hand spray.





**Ideal For Home, Hotel, Restaurant,
Healthcare Centre, Sport Club,
and wherever a clean and natural
refreshing environment is desired.**

WARRANTY: 5 years (Terms & Conditions apply)



MODEL: ADD-2005 WSI
DIMENSIONS: 19.6CM(H) X 14.2CM(W) 8CM(D)



PACKING:
1 WICK CARTRIDGE
6 X 40ML SACHET

AutoFresh Organic Air Freshener

NEW environmentally-safe, organic oil fragrances that combine with natural organic scents and odor neutralizing ingredients from flowers, fruits and plants. Organic oil fragrances wick cartridge can be refilled and is available in 25ml/40ml sachets.

Specially designed AUTOFRESH Air Dispenser operates on a single or double D-cell battery-operated micro-motor fan system. With continuous operation or variable intermittent ON/OFF controller and automatic light sensor switch that silently circulates the natural fragrances throughout the room. This feature extends the optimum service of each 25ml/40ml sachet refill that lasts up to 30 days- 60 days for most usage situations.

Freshmate Organic Oil Fragrance

Calfarme offers a wide choice of natural organic oil fragrances to neutralize a wide range of malodors including tobacco smoke, garbage containers, vegetable and cooking fat odors. The ingredients function effectively by complexing or neutralizing specific molecules and reducing their concentration on a vapor phase.

Fragrances: Mountain Fresh, Mountain Lemon, Mountain Melon etc.

Packing: 40 X 25ml per bag/25 X 40ml per bag(6 bags per carton)

FRESHMATE REFILL CAN BE USED IN CAR, BEDROOM, WARDROBE, KITCHEN, OFFICE AND TOILET ETC. EASY REFILLABLE, TEAR OPEN OIL FRAGRANCE SACHET TO REFILL THE WICK CARTRIDGE WHEN EMPTY. RECOMMENDED TO USE WITH AUTOFRESH AIR DISPENSER FOR LARGER SPACE AREA.



CALFARME SANITARY DISPOSAL BINS

DESIGNED FOR HYGIENIC, CONVENIENT AND DISCREET DISPOSAL OF SANITARY TOWELS, TAMPONS, PANTY LINERS AND BABY DIAPERS

1. Practical, Durable and User-Friendly
2. Appreciated by all patrons and keep the surrounding clean at all time
3. No more sanitary disposal problems and expensive plumbing repairs caused by clogged drains and toilet bowls
4. New SANIBIN GEL: BIO-ORGANIC ODORS NEUTRALIZER & INSECT REPELLENT (Vaporizes, freshens and eliminates harmful bacteria)
USAGE: One teaspoon 5gm to 10gm per bin change to lasts 30 days



PEDAL-BIN

JUMBO/NAPPY-BIN

LADY-BIN

MINI-BIN

JUMBO-BIN with detachable MODESTY FLAP to conceal inside contents and large capacity designed for excessive disposal of sanitary towels & tampons.

CAPACITY: 42 liters/WT: 2.65 kg

DIMENSION: 310mm X 310mm X 670mm(H)

NAPPY-BIN OPEN Cover-Flap and large capacity, designed for disposal of baby diapers in Baby Changing Rooms and Handicaps Toilets.

CAPACITY: 42 liters/WT: 2.65 kg

DIMENSION: 310mm X 310mm X 670mm(H)

MINI-BIN is free standing or hang on to wall and can easily be removed for daily cleaning

CAPACITY: 12 liters/WT: 1.16 kg

DIMENSIONS: 35 cm (H) X 30 cm (W) X 17 cm (D)

LADY-BIN is slim enough to fit neatly alongside the toilet pedestal without causing any inconvenience

CAPACITY: 22 liters/WT: 1.7kg

DIMENSIONS: 61cm (H) X 31 cm (W) X 17 cm (D)

PEDAL-BIN operates on foot pedal, offering 'hands free/non touch disposal' of sanitary towels & tampons

CAPACITY: 22 liters/WT: 2.4kg

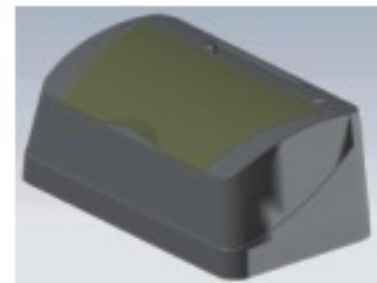
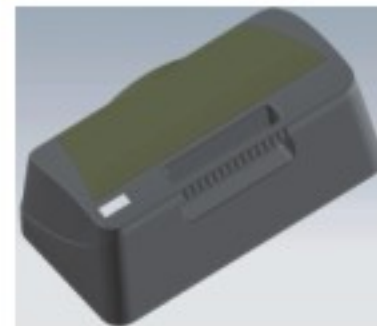
DIMENSIONS: 56cm (H) X 31 cm (W) X 20 cm (D)

NEW !
Sensor cover lid & flap designed to fit slim-line LadyBin and MiniBin

- operates on D-cell alkaline batteries

- detachable mechanism

- automatic sensor or manual option





CORNER SANIGEL CSD-600 MLW

AUTOMATIC SANIGEL TOILET SEAT WIPES

An effective and quick-drying germicidal gel system used to clean toilet seats safely. Positioned inside toilet cubicles, the SANIGEL uses the same tissue paper normally provided in the toilets.

SANIGEL system is simple and hassle-free.

For convenience and hygiene purposes the SANIGEL DISPENSER has a sensor activator, so that it can be a touch-free operation. A push-bar activator is also built-in, if required.



AUTOMATIC SANIGEL ASDT-950S



USING A SANIGEL INVOLVES 4 SIMPLE STEPS:

1. Pull out approximately 2 feet length of toilet paper and fold it a few times.
2. Position the folded toilet paper under the dispenser and the SANIGEL will be automatically dispensed.
3. Clean the toilet seat with a wiping action.
4. Dispose off the used toilet paper by throwing into the toilet bowl.

SANIGEL IS A MILD AND EFFECTIVE ALCOHOL-BASE CLEANSER THAT IS SAFE FOR SKIN CONTACT OR HANDS.

MODELS/DIMENSIONS:

AUTOMATIC SANIGEL ASDT-950S: 24CM(H) X 14CM(W) X 9CM(D)
 MANUAL SANIGEL SDW-950S: 24CM(H) X 14CM(W) X 9CM(D)
 CORNER SANIGEL CSD-600 MLW: 21CM(H) X 15.5CM(W) X 8.5CM(D)

REFILLS PACKING:

12 X 600ml disposable sachet per carton
 12 X 1000ml disposable sachet per carton

MODEL : JRT-1S

MODEL : MRT-4

Interchangeable for normal rolls or jumbo roll usage with secure and robust design.

CALFARME MULTI-ROLLS & JUMBO-ROLL TOILET TISSUE DISPENSER

Designed to accommodate all standard paper tissue rolls including jumbo toilet tissues, thus providing flexible usage and uninterrupted service in all washrooms.

The larger capacity dispenser holds additional or larger rolls that gives you a longer interval between refills, saving on maintenance time and inconvenience.

It's durable construction with high impact rigid plastic and standard key-locking mechanism allows easy opening while keeping tissue rolls dry and securely in place.

Model: MRT-4
Dimensions : 33cm(h) x 32cm(w) x 13cm(d)
Color: transparent polycarbonate cover
Capacity: max. 4 standard rolls
Core dia: 32mm.

Model: JRT-1S
Dimensions: 33cm(h) x 32cm(w) x 13cm(d)
Capacity: 1 super jumbo roll tissue
Core dia: 44mm/75mm.
Roll dia: max. 30cm. Outer
Roll length: max. 450 meters

JUMBO ROLL TISSUE DISPENSER

MODEL NO : JRT-350

DIMENSIONS : 30.5CM (H) X 26.5CM (W) X 12.2CM (D)

COLOR : POLYCARBONATE COVER WITH GREY BASE

CAPACITY : 1 JUMBO ROLL (MAX. DIA : 22.5 CM / CORE DIA : 75MM)

PACKING : 12 UNITS PER CARTON



PAPER TOWEL DISPENSER

MODEL : TDW-300

DIMENSIONS : 30.5CM (H) X 26.5CM (W) X 12.2CM (D)

COLOR : ABS WHITE COVER WITH GREY BASE

CAPACITY : 300 C-FOLD / 400 MULTI-FOLD PAPER TOWEL

PACKING : 12 UNITS PER CARTON

ANTI-SLIP PVC Protective Floor Mat

Helps prevent slips, low profile and easy-to-clean construction

Designed to protect floor against damage while keeping shoes and other objects high and dry. It also helps reduce the possibility of slips and falls.

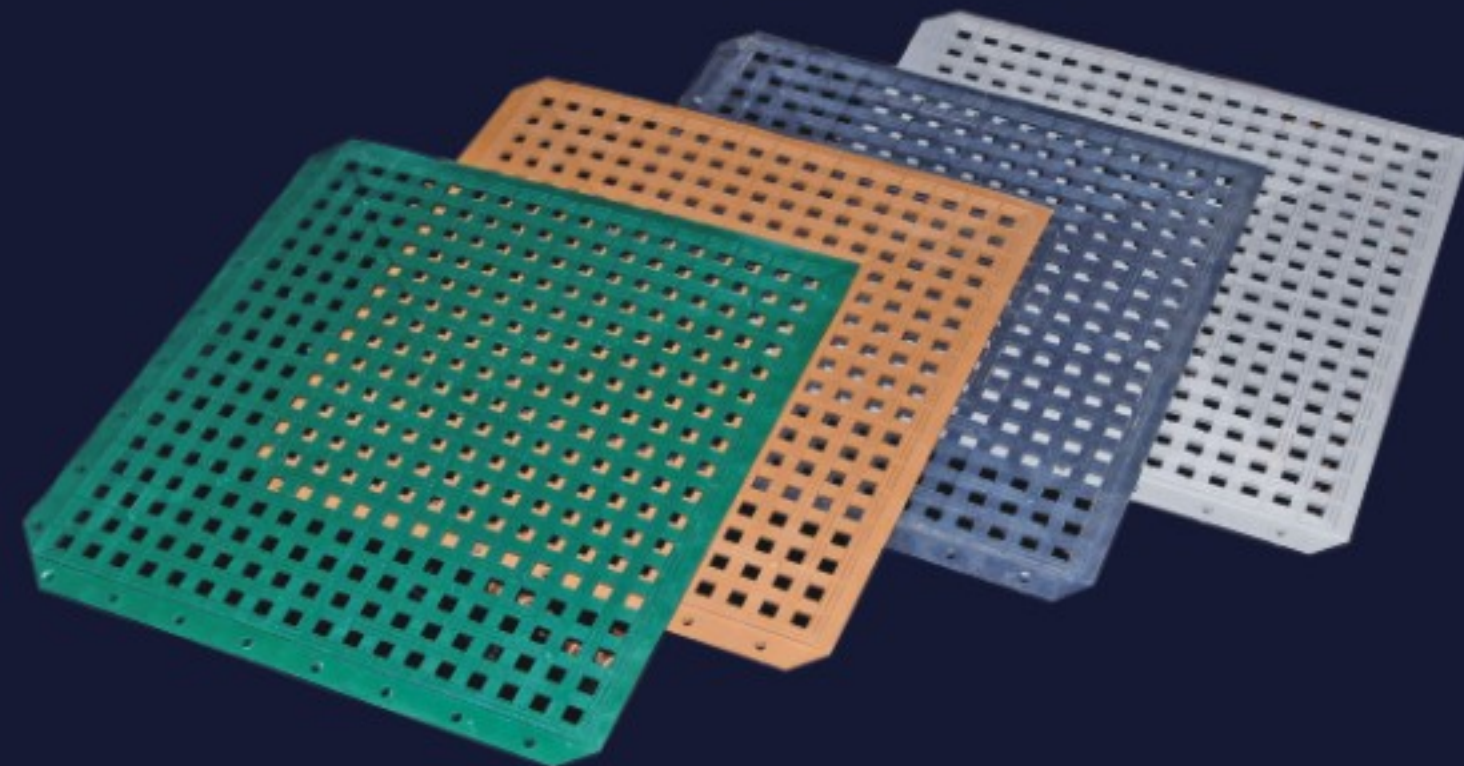
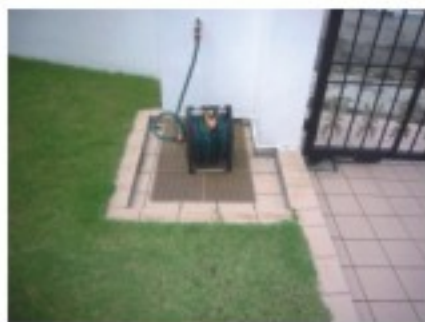
A standard one-square foot, interlocking and low profile PVC tile provides a durable and hygienic surface covering for all floor and matting applications.

CALFARME ANTI-SLIP PVC PROTECTIVE FLOOR MAT with its top texture pattern and various colors allows a variety of decorative combinations. Easy to assemble and disassemble as needed.

Recommended for use in pools and shower areas, locker rooms, health spas, kitchens, doorways, vehicle deck & pouches, stores, lobbies, workshops and manufacturing plants without obstructing door movement because of its low profile.

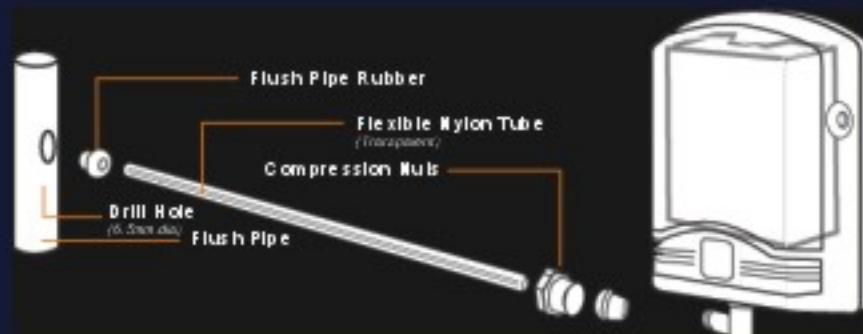
COLORS AVAILABLE: Pewter Grey, Light Brown, Navy Blue and Garden Green.

Standard Packing: 9 pieces each pack(1 square meter)
Outer: 5 packs per carton(5 square meters) Wt: 18 kg





Easy Installation:



Cut-outs of pipe with waste deposits before and after BioClean treatment.



BioClean removes build-up throughout entire plumbing system, keeping drain lines free flowing.



Installation of BCS-500W Dispensers for urinals

PATENTED BIOCLEAR SYSTEM is perfect for installation at all toilets in office buildings, hotels, restaurants, schools, shopping malls and healthcare facilities.

Patented BioClean System dispenses a metered dose of biological treatment product after every flush.



MODEL: BCS-500T



MODEL: BCS-500W

USAPatent No: US 6,530,094 B1
PCT No: PCT/SG97/00070

LCD-PROGRAMMABLE BIOCLEAR DISPENSER

SMART REFILLABLE POWER WITH BIOCLEAR,
GUARANTEED 4,000 DOSAGES PER REFILL.

PRODUCT FEATURES:

LCD Control Panel
Start/ Stop Setting
Dosage Frequency Setting
Day off Selection
Reset & Test Button
Battery Status Indicator
Built-in One Way Valve
Waterproof Housing
Key lock



MODEL: BCS-325W

Install on Urinals, Water-Closets and all type of Toilet System



The automatic dispensing system to keeps toilet fixtures clean and fresh smelling, and clears drain pipes of odor-causing and pipe-choking organic wastes.

Over time, organic material build up throughout the plumbing lines in buildings. It is this build-up that eventually causes clogged drains and obnoxious odors.

Now there is BIOCLEAR, an automatic system that solves the malodor problem by destroying its source, unlike most products that just deodorize. With continuous use, BioClean attacks plumbing build-up, prevents drain clogs and increases the flow rate throughout the entire building and the sewage system.

Once these bio-active enzyme producing bacteria are introduced to organic waste such as urine and ammonia, they produce powerful enzymes which eliminate these compounds. The BIOCLEAR formulation is biodegradable and pleasantly scented. Hazardous caustic or corrosive chemical drain openers that damage drain pipes are now history.

- Safe to use. Guaranteed non pathogenic strains.
- Eliminate the use of chemical products like toilet cleaners and air fresheners, resulting in cost savings.
- Environmentally-friendly BIO-ENZYMATIC action.
- Reliable as using Calfarme's patented and proven dosing system.



Calfarme's Concentrated BioClean refill is available in 50ml. sachet for convenient refilling and servicing. One 50ml. sachet makes a bottle 500ml. Ready-to-use BioClean refill and sufficient to last for 30 days of usage.

STANDARD PACKING:
12 sachets box/120 sachets per carton





BioPlus™



NET: 5 Liters

NET: 10 Liters

500ml Sprayer

BENEFITS COMPARED TO CONVENTIONAL CLEANING SOLUTIONS.

1. Non-Toxic, Non-Acidic, Non-Caustic. ALL NATURAL. Safe to use and store.
2. Easy to use. Packaged in plastic containers, spray bottles, sachets and tablets.
3. Cost effective, Economical & Environmental Safe.
4. Energy & Water savings.
5. Naturally derived Non-Pathogenic, Enzyme-Producing Bacillus strains.
6. Reduce pollution caused by waste materials.
7. Surfaces are deep clean and pleasantly fresh smelling.
8. Does not damage or erode any surfaces.
9. No-Rinse & Non-Slip Cleaners.
10. Reduce odors.
11. Keeps drain lines free flowing.
12. Helps protect drain pipes.
13. Reduce odors and pests free.
14. Dramatically reduce Biological Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Total Suspended Solids (TSS) & break down wastes into carbon dioxide and water.

BioPlus Multi-Purpose Biological Cleaner and Deodoriser

The powerful stabilized blend of bacterial spores and unique grease-cutting surfactant in BioPlus quickly break down complex organic compounds found in waste matter. BioPlus is the perfect solution for drain clogs, grease trap maintenance and for controlling the toughest industrial odor problems

DRAIN OPENER AND MAINTAINER

Clogged drains are a real problem. The use of caustic corrosive chemicals risk damage to pipes and are not always effective. On the other hand, calling pipe contractors can be a very expensive option.

Relief is finally here. BioPlus, using innovative biotechnology, utilizes naturally occurring bacteria and grease-cutting surfactant to liquefy wastes and keep drains free flowing.

GREASE TRAP MAINTAINER

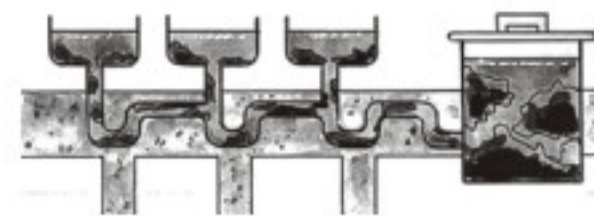
Clogged grease traps are often the most difficult maintenance problem in institutional kitchens. BioPlus provides an easy solution. A fortified biological solution breaks down grease, fat and other complex organic materials naturally.



Organic waste collect on traps causing pipe blockage.



BioPlus acts on organic waste, clearing up the piping system.



GENERAL PURPOSE DEODORISER CLEANER

Finding the source of obnoxious odors is critical. Many times it seems that despite hard cleaning, decaying organic matter is still left behind. BioPlus seeks out organic wastes and eliminates the source of the most offensive odors. It leaves walls, floors and other surfaces clean and pleasant smelling.

BioPlus protects cleaned surfaces against new contaminants and leaves them truly clean thus eliminating slippery floors caused by grease build-up and removes the food source for pests including ants, cockroaches and breeding of flies.



NET: 1000 ml



BioTabs™



THIS IS WATER-SAVING URINAL SYSTEM
Bio-Enzymatic
NEW
Deodorizer
www.Calfarm.com



BIO-TABS URINAL DEODORIZER

works on organic waste that are the source of urinal clogging and bad odors.

Upon flushing the urinal, a portion of the BIO-TABS is dissolved, releasing the ingredients and a refreshing scent.

BIO-TABS, an engineered blend of active and biodegradable cleaners, results in pleasant-to-use, trouble-free urinals.

Problem-causing ammoniacal compounds in urine are completely and efficiently broken down by Urease, one of the enzymes contained in BIO-TABS.

EASY TO INSTALL

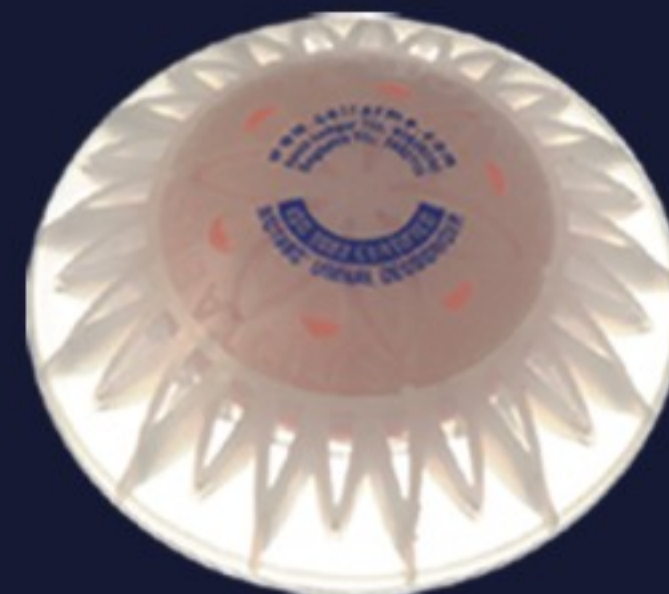
Simply place plastic screen with open end of BIO-TABS against the centre of urinal drain.

ECONOMICAL TO USE

The BIO-TABS block is formulated to dissolve slowly for consistent action and extended use. The BIO-TABS lasts a minimum of one month for most usages.

ENVIRONMENTALLY SAFE

BIO-TABS does not contain paradichlorobenzene, a known cancer causing chemical found in most toilet block. BIO-TABS is made of non-toxic, non-corrosive ingredients that will not harm drain pipes, septic systems and the environment.



PACKING: 24 units per carton

PERFECT FOR ALL FLUSHABLE AND WATER-SAVING URINAL BOWL OR TROUGH.



BIO-TABS URINAL DEODORIZER & DRAIN MAINTAINER

**Save Water, No-Flush, No-Malodor
for Waterless Urinal System &
Conventional Urinals.**

Regardless of the urinal condition, BIO-TABS maintains all urinal bowl or trough, and saves money. Other waterless urinal systems require replacement of existing urinals and incur additional installation costs, plumbing works and re-tiling.

One urinal can use up 150,000 liters of valuable water on an annual basis (100 users a day)



Spray BIO-PLUS liquid deodorizer direct on urinal surface and floor area underneath the urinals daily at least once a day for maintenance...



BioTabs™



PACKING: 24 units per carton

WATERLESS URINAL SYSTEM



**Each BIO-TABS lasts up to 60 days.
Cut-down & save on installation
for Air Fresheners or Toilet Sanitizers.**

FEATURES AND BENEFITS OF BIO-TABS:

- BIO-TABS reduces the water usage for flushing the urinals to the very minimum, which in turn saves PRECIOUS WATER and extends the usage of BIO-TABS.
- BIO-TABS produces enzymes that completely and efficiently breakdown the odor-causing compound in urine and prevents troublesome solids build-up in the drain-pipes even without flushing or nominal flushing.
- BIO-TABS is formulated to dissolve slowly, releasing the BIOLOGICALLY ACTIVE ingredients and a refreshing scent, which helps to maintain a clean, fresh-smelling & clog-free urinal with environmental friendly bio-enzymatic action.

DIRECTION FOR USE & MAINTENANCE:

- Easy To Use - Simply place BIO-TABS at the centre of urinal drain of Waterless Urinal System and Conventional Flushing Urinals.
- For Conventional Flushing Urinals - Shut out water connecting to the urinal or reduces the volume of flushing water to the very minimum that will save water up to 99%.
- Regular Maintenance - Spray CLEANBIO All-in-one Surface Cleaner/Odor Eliminator (ready-to-use) or spray BIO-PLUS liquid deodorizer/booster direct on urinal surface and floor area underneath the urinals daily at least once a day. (For refill: Dilute 1 part BIO-PLUS Concentrate to 20 parts water/25ml sachet to 500ml water in a bottle sprayer or pour direct into urinal drain pipe for slow-flowing urinals)



For Urinal Trough, place one BIO-TABS apart at each meter.



CleanBio BLUE FLUSH

WC Toilet Maintainer for clean,
fresh-smelling and clog-free toilets

CleanBio BLUE FLUSH works automatically with every flush, releasing a powerful biological cleaning formula that breaks down organic waste.

By cleaning organic waste out of the toilet systems, **CleanBio BLUE FLUSH** eliminates the source of stains, encrustations and malodors. At the same time, keeps drains free-flowing and choke-free.

DIRECTIONS:

1. Start with a clean toilet bowl.
2. Hang bottle inside water cistern with adjustable system holder in an up right position.
3. Immerse bottle completely below water level.

Simple & Worry-Free

- Environmental-friendly BIOENZYMATIC action
- Helps clear pipe blockages from organic waste
- Dosed automatically with every flush to W.C. tank
- Industrial strength is good for 1,500 flushes
- Prevents rust & hard water stains on your toilet bowl
- Cleans completely in water closet and under the toilet rim
- Prevents bleeding of mosquitoes and larvae in stagnant water closet

Standard packing:
60 x 85gm per carton
100 x 85gm per carton



Simply & Worry-free



Start of flush



During flush



End of flush

ECO-BLUE BIO-ENZYMATIC TOILET MAINTAINER

CLEANS, DEODORISES AND FRESHENS AUTOMATICALLY WITH EVERY FLUSH

KEEP TOILET BOWLS CLEAN AND FRESH SMELLING

ECO-BLUE is used in toilet bowl fixtures with water closets.

Simply put ECO-BLUE inside the water closet and say goodbye to dirty, smelly toilets.

ECO-BLUE works automatically with every flush, releasing a powerful biological cleaning formula that breaks down organic waste.

SAVE CLEANING TIME AND MONEY WITH ECO-BLUE

ECO-BLUE reduces cleaning requirements and does away with traditional disinfectants or acid based cleaners.

Industrial strength, ECO-BLUE is good for 1500 flushes, which is at least 2 - 3 months for most usages.

SIMPLE & WORRY-FREE WITH ECO-BLUE

By clearing organic waste out of toilet systems, ECO-BLUE eliminates the source of stains, encrustations and malodors. At the same time, it keeps drains free-flowing and choke-free.

- Prevents rust & hard water stains on your toilet bowl.
- Cleans completely, in water closet and under the toilet rim.
- Prevents breeding of mosquitoes and larvae in stagnant water closet
- Eco-blue is safe for all septic tanks and plumbing.
- Biodegradable and ecologically safe

Standard Packing: 12 x 200 gram per box



BioClean WC Toilet Maintainer

For clean, fresh-smelling and clog-free toilets

With an environmentally safe 'BIO-ENZYMATIC' action, BioClean WC Toilet Maintainer automatically cleans the toilet with every flush. It is placed inside the water closet and with each flush, release a powerful biological cleaning formula that breaks down organic waste out of the toilet's system.

- Prevents rust & hard water stains on your toilet bowl
- Cleans completely, in water closet and under the toilet rim
- Safe for septic systems

Helps clear pipe blockages from organic waste

BioClean eliminates the source of stains, encrustations and malodors. At the same time, it keeps drains free flowing and choke free.

Dosed automatically with every flush to WC tank

BioClean reduces toilet cleaning requirements and does away with traditional acid-base toilet cleaners or disinfectants. Industrial strength BioClean is good for 3,150 flushes, which is at least 2 - 3 months for most usages.

DIRECTIONS FOR USE:

REFILLING:
Remove cover and fill bottle with water to 3/4 full.



Tear sachet and pour concentrated BioClean into bottle. Replace cover and shake well.



Hang bottle inside cistern with Bio Clean adjustable system holder downward.



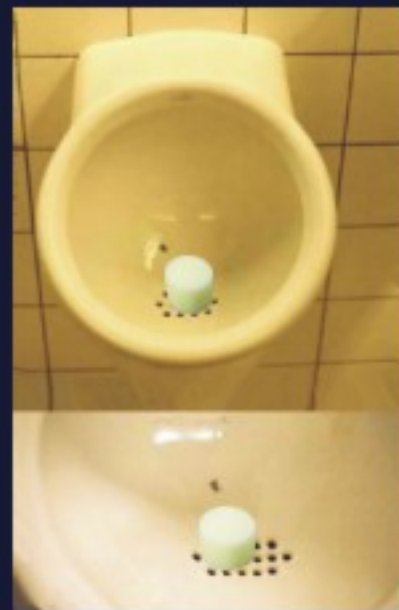
Immerse bottle within 1 cm. to 2 cm. below water level.





Bio-MATRIX™

Slow Release Urinal / WC Maintainer
For clean, fresh-smelling and clog-free toilets.



Recommended for:
**SEPTIC SYSTEM
TREATMENT
AND DRAIN LINE
MAINTENANCE .
HELPS KEEP
YOUR SEPTIC
SYSTEM TROUBLE
FREE BETWEEN
PUMPINGS!
ENVIRONMENT
FRIENDLY TOILET
& DRAIN
MAINTENANCE.**

Bio-MATRIX

Slow Release Urinal/WC Maintainer For clean, fresh-smelling and clog-free toilets

BIOMATRIX uses bio-enzymatic action that digests and clears away organic waste material. This natural process results in cleaner, fresh-smelling toilets and free-flowing drain lines. It also dramatically reduces the pollutant load of toilet effluents that ultimately discharge into the environment's waterways.

APPLICATIONS: For Urinals- Simply drop at least one BIOMATRIX onto flushable or waterless urinal bowl and slab, or inside water cistern. (For WC Toilet Bowl: Drop one BIOMATRIX inside water cistern or more for large centralized water tank (use 1 BIOMATRIX to every 10 liters water tank, eg.5 BIOMATRIX for 50 liters water tank) Start with a clean toilet bowl.

BioMatrix consists of two components:

1. Concentrated Biological Actives
2. Biodegradable polymers that hold and subsequently release the active ingredients into a water-based environment



Benefits of BioMatrix

SAVES TIME Bio-Matrix is simple to use which requires minimal maintenance and effort. It reduces the need for manual handling, resulting in greater reliability and consistency.

SAVES COST Bio-Matrix requires no costly installations or complex equipment and each matrix lasts up to 2 months.

SAFE AND HAZARD-FREE Bio-Matrix comes in a convenient single block matrix form, which means no spills and leakage - so handling is hazard-free. Furthermore, the controlled dosing prevents leaking and subsequent hazardous accumulation that can cause undesirable side effect.

100% BIODEGRADABLE AND ENVIRONMENTALLY FRIENDLY

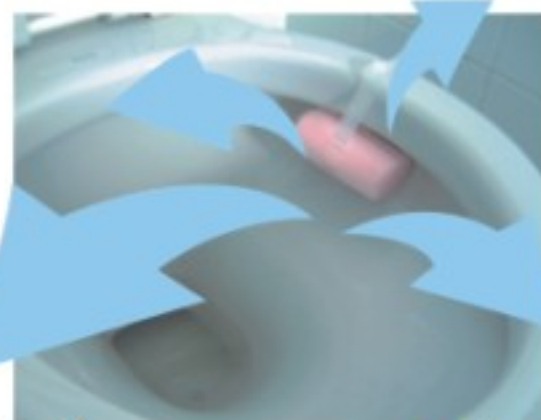
Bio-Matrix is biodegradable so no residue remains in the system.

Guaranteed Minimum: 100 million Colony Forming Units Per Gram
Packing: 6 pieces x 50 gram per box (Available in Blue color/Colorless)



NEW

BioFlush™
Keeps toilet bowl clean



Fresh smelling for

60 days!!

Net Content:
12gm each

Simple & Worry-free !

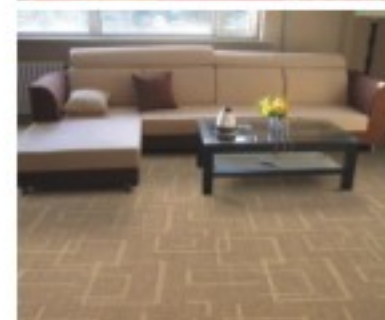
Simply clip Bio-Flush around the inside rim of toilet bowl and upon flushing the toilet bowl, the water dissolves a portion of the Bio-Flush block, releasing the biological active ingredients and a refreshing scent to last till the next flush.

Economical !

The Bio-Flush block is formulated to dissolve slowly for consistent action and extended use. The Bio-Flush block lasts a minimum of one month for most usage.

Environmentally Safe !

Bio-Flush does not contain paradichlorobenzene, a known cancer causing chemical found in most toilet blocks. Bio-Flush is made of non-toxic, non-corrosive ingredients that will not harm drain pipes, septic systems and the environment.



Biological Rugs & Carpets Cleaner

A powerful biological cleaning formula that acts on organic wastes and eliminates the source of the most offensive odors, including pets & animal waste odors.

Effectively cleans deep underneath rugs and carpets with a durable and lasting residual protection against new contaminants after cleaning. It reduces insects infestations such as ants, cockroaches and other crawling insects.

By applying uniformly, particularly areas where spills can occur, it allows the bacteria spores to degrade trapped and absorbed organic materials leaving carpets, upholstery, sofa, fabrics and other surfaces clean and pleasantly fresh smelling.



APPLICATIONS:

For Carpet Machine, add 25ml to 50ml for every 10 liters of water preferable warm or with the carpet shampoo/cleaner of your choice. For hand wash of rugs, carpets and other surfaces, add 25ml to 50ml in a 500ml sprayer bottle and clean with a brush, then allow to dry.

Guaranteed Minimum: 50 millions Colony Forming Units Per Gram

Standard packing:
4 x 5 liters per carton

THE WASHROOM
calfarm
PROFESSIONALS



Biologically Formulated Solutions for Today's Environmentally Conscious WORLD

 NATURAL CLEANING AT ITS BEST



BIOCARE ALL-IN-ONE BIOLOGICAL CLEANER & DEODORIZER

An economical, quick acting All Purpose Non-Rinse Cleaner for floors, kitchen, toilets and drain maintenance. It eliminates slippery floors caused by grease build-up. Effectively cleans floor grout, crevices and corners without effort and reduces insect infestation such as ants and other pest from crawling around. Eliminates pets & animal waste odors, leaving a fresh clean environment. **APPLICATION:** Add 25ml to 50ml (1 cap to 2 caps) to 10 liters of water, mop thoroughly on floor surface and allow to dry. After cleaning is completed, simply dispose remaining water in to drains or sinks to remove build-up throughout the plumbing lines of the building and sewerage system.



CLEANBIO ALL-IN-ONE LAUNDRY WASH

CLEANBIO ALL-IN-ONE LAUNDRY WASH is suitable for hand wash, washing machine or dry cleaning application of all clothes, towels, and fabrics. It cleans and eliminates odors and disease causing bacteria without the needs for fabric softener rinse. After each wash, it will give a durable and lasting residual protection against new contaminant, thus making next washing much easier. **APPLICATION: FOR HAND WASH:** Add 25ml to 50ml (1 cap to 2 caps) for every 10 liters of water preferable warm and drop in your clothes and allow to soak for at least an hour. Then gently rub and rinse off with clean water. **FOR DRY CLEANING / ODORS:** Mix 1 capful (25ml) in a 500ml sprayer bottle. Spray on cloth and wipe clean with damp towel cloth or sponge and allow to dry.



CLEANBIO DISH WASH PROFESSIONAL

Gentle on your hand. Powerful biological cleaning action that digests and cleans away organic waste material, grease, oil and fats. This natural process eliminates disease causing bacteria and odors, and reduce grease trap maintenance. **APPLICATION:** Apply CLEANBIO DISH WASH directly with dish cloth or sponge to wash dirty dishes and utensils, then rinse clean with warm or cold water. After washing, wipe or let dry also for dish cloth or sponge.



CLEANBIO ALL-IN-ONE SURFACE CLEANER & ODORS ELIMINATOR

A safe, one-step system to eliminate the source of unwanted odors and disease causing bacteria. It acts on organic waste, clear drain pipes and cleans toilet, floors and other surfaces, carpets, sofa, fabrics, clothes, kitchen stove, table top, glass window, appliances through spray method and brush or by mop. **APPLICATION:** Spray uniformly on surfaces, particularly on areas where contaminants can occur. For best result, spray on and leave overnight. NEUTRAL pH will not harm polished or shine coated surfaces.



BIOCLEAN 200 LIQUID DEODORIZER

Spray BIOCLEAN 200 LIQUID DEODORIZER in to atmosphere bring lasting freshness to every room. BIOCLEAN 200 with bio-organic natural fragrances eliminates obnoxious odors and disease causing bacteria, smoke odors, cooking odors, refuse odors, pets odors and body odors thus leave room smelling fresh and clean odor that lingers for hours. Perfect for housekeeping after routine cleaning, general deodorizing of kitchen, rubbish chute, closets and storage lockers, toilet bowls, sick rooms, cars & buses etc. BIOCLEAN 200 IS SAFE, NON-TOXIC, WATER SOLUBLE, NON-FLAMMABLE & BIODEGRADABLE.

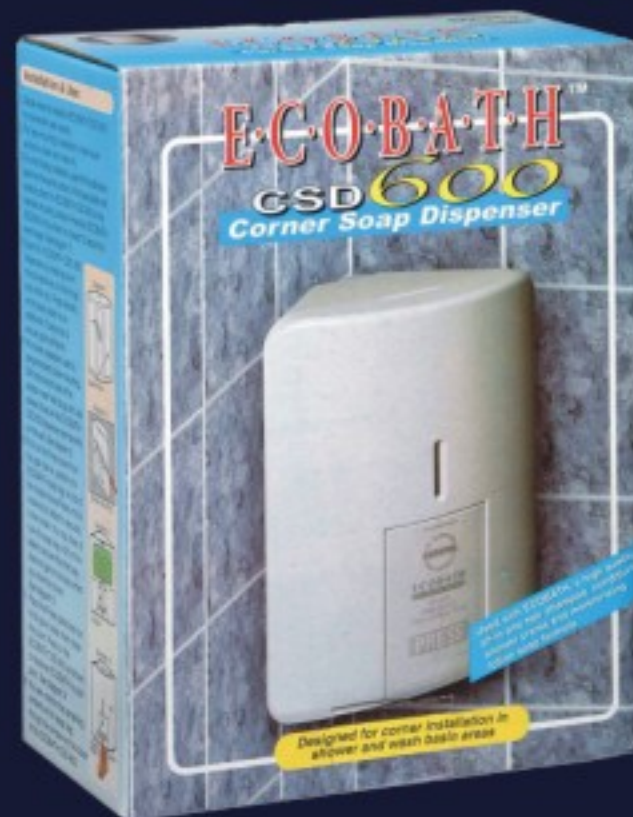


CLEANBIO ALL-IN-ONE TOILET CLEANER & DRAIN MAINTAINER

Environmentally-friendly BIO-ENZYMATIC action seeks out organic waste and eliminates the source of stains, encrustations and malodors to keep toilet fixture clean and fresh smelling. With continuous use, it attacks plumbing build-up and helps clear pipe blockages from organic waste. **APPLICATION:** Use daily, apply evenly on toilet bowl surfaces and leave overnight. For heavy encrustation, use bowl mop or brush and flush. **FOR DRAIN LINES & DOWNPIPES** - Cleans toilet bowl regularly or pour 50ml to 100ml daily in shower, sink and tub drain will keep pipes free flowing and clear of grease, fat and other solid waste. SAFE, NON-TOXIC TO HUMANS AND ANIMALS, BIODEGRADABLE, NON-ACIDIC, NON-CAUSTIC & GUARANTEED NON-PATHOGENIC STRAINS.

EcoBath All-in-one System for Hair, Face & Body Wash

ECOBATH, a high quality All-In-One hair shampoo, conditioner, showercrème and moisturising lotion soap formula. The one-time use, ECOBATH Bag refills contains 600ml of product, and has been hermetically sealed and fitted with a tube and nozzle assembly. This design prevents product contamination providing extra hygiene assurance and convenient for your family members and guests.



STARTER PACK with a 600ml. Eco Bath Refill and Corner Soap Dispenser.



DOMESTIC PACK with three (3) 600ml. Eco Bath Refills and Corner Soap Dispenser.

Indulge your whole body with Calfarme! For cleaner face, healthier hair & smoother skin!



Packing:
24 X 500ml per carton

Skin Care Moisturizer

Contains Aloe Vera & Shea Butter with antioxidants for soft, smooth and healthier skin-F or all skin types

Enriched with antioxidants and natural extracts to hydrate and revitalize the skin's appearance. Leaves skin feeling soft and smooth. Ideal for everyday use on face, hands and body, and after bathing or showering.

NEW



100ml Travel Pack
keep one handy at all times



Cleaner face, healthier hair & smoother skin!



Calfarme Foaming Facial Cleanser cleans away face oil, dirt and makeup daily. As it whitens, conditions and protects the skin against bacteria, it leaves skin refresh and clean without drying.



Foaming Facial Cleanser with Tea Tree Oil

- Mild and soothing
- Soap-free formula
- Suitable for sensitive skin



Foaming Facial Cleanser for clean, radiant skin

- Blended with natural plant extract, Tea Tree Oil
- Mild and deep clean
- Suitable for all skin type

Calfarme's whole new range of body care products provides the pure and natural kind of clean expected for your precious whole body.



All-In-One Hair and Body Wash with Tea Tree Oil

- For healthier scalp and skin, removes bodily odors
- Soap-free formula
- Contains Tea Tree Oil, moisturizers and produces a creamy lather that cleans the hair, scalp and the entire body
- Rinses off easily without leaving a greasy feeling



All-In-One Hair and Body Wash with Extra Moisturizing

- Refreshing Classic scent, mild and soothing soap-free formula
- Contains special deodorants, moisturizers and produces a rich creamy lather that cleans and refreshes the hair, scalp and the entire body
- Rinses off easily without leaving a greasy feeling



Creme Rinse Conditioner with Tea Tree Oil

- Highly effective conditioner for healthier hair and scalp
- Removes odors
- Suitable for oily-normal hair



Creme Rinse Conditioner with Extra Moisturizer

- Highly effective conditioner for hair
- Refreshing Classic scent
- Suitable for all hair type



Shower Creme with Tea Tree Oil

- Extremely mild and gentle enough for frequent use
- Contains natural plant extract, Tea Tree Oil with a rich creamy lather that removes bodily odors, cleans and moisturizes the entire body
- After rinsing, it leaves the skin feeling fresh and hygienically clean, silky smooth and soft without leaving a greasy feeling



It's mild and gentle formula which contain natural extract, leave your skin and hair feeling refresh and hygienically clean, silky smooth and soft without a greasy feeling.

Basic Definitions of Bacteria and Enzymes

BIOTECHNOLOGY :

The science of the selection and the application of living microorganisms for purposes useful for mankind and the environment.

BACTERIA :

Any of a group of diverse and ubiquitous prokaryotic, single-celled microorganisms.

SPORE :

The dormant or inactive stage that some bacteria can temporarily assume.

ENZYME : (a/k/a non-living chemical catalyst)

A protein produced by living organisms (i.e. bacteria) that function as catalysts in assisting chemical processes such as digestion or degradation of organic waste.

NOTE : While bacteria metabolize a wide variety of organic material, enzymes are substrate specific. For example :

Protease enzymes catabolizes (“breaks down”) protein

Amylase enzyme breaks down starch and carbohydrate

Lipase enzyme breaks down fat and grease

Cellulase enzyme breaks down cellulose

Urease enzyme breaks down urea

AEROBIC BACTERIA :

Bacteria that require the presence of oxygen to live and function.

ANAEROBIC BACTERIA :

Bacteria that do not require the presence of oxygen to survive they are capable of living and functioning in the absence of oxygen.

FACULTATIVE BACTERIA :

Bacteria that are capable of living and functioning **either** in the presence of oxygen, **or** in the absence of oxygen.

BIODEGRADATION SUMMARY

Introducing selected, naturally-occurring, non-pathogenic, bacteria (which produce enzymes) to organic waste is a safe, environmentally responsible method of augmenting and accelerating nature's own biodegradation process.

In the natural environment, both bacteria and the enzymes play a significant part in biodegradation -- Bacteria produce the enzymes essential for metabolizing the food source (organic waste) into energy necessary for further growth of the living organism. The enzymes facilitate the phase of metabolism in which complex compounds are broken into simpler ones (catabolism). This in turn speeds the process of converting the food source into an available energy supply for the bacteria.

A reasonable period of time after introducing Calfarme's specially selected bacteria into water medium containing organic waste, the spores will vegetate (go from dormant to active), produce specific enzymes, and degrade or digest the available organic waste. The introduced microorganisms are capable of exponential growth, they can double in number every twenty to thirty minutes. The by-products of this bacteria / enzyme activity are H₂O and CO₂.

By adding Calfarme's strains of *Bacillus* bacteria to organic waste, the following beneficial results can be achieved :

- Reduction of bod (biological oxygen demand)
- Reduction of cod (chemical oxygen demand)
- Reduction of ss (suspended solids)

Foul odours and noxious gases are reduced, by eliminating their source (organic waste)

Calfarme's bacterial concentrates are not genetically engineered or altered; they are naturally-occurring found in soil and water. They were carefully selected. Because they are :

- Safe and stable
- Non-pathogenic
- Non-toxic
- Facultative (capable of growth with or without oxygen)
- Vigorous enzymes producers
- Logarithmic reproduction, every 30 minutes.

FATE OF INTRODUCED BACTERIA AND ENZYMES

This is a brief explanation of the ecology and fate of introduced microorganisms and enzymes. It is by no means complete, but it is intended to provide a basis for addressing those concerns.

Microorganism in the genus *Bacillus* are ubiquitous. That is, they can be found essentially everywhere. They belong to a group of microorganisms that form endospores.

The primary habitat for *Bacillus* sp. is the soil. In this environment, they remain inactive until a suitable substrate (food source) becomes available. Usually these substrates include large molecules from the remains of plants and animals. The large molecules, like proteins, lipids, and carbohydrates are suitable substrate for *Bacillus* sp. because these strains excrete enzymes which break these molecules into smaller, more soluble compounds.

The process of reducing in size the larger compounds is similar to what occurs at a municipal sewage treatment plant and is important on several levels. To the bacterial microflora, this is important because these smaller compounds are now available for absorption into and use by the cell. On the community level, this process is especially important because it initiates the degradation process. Finally, on a global scale, this process plays a vital role in the global recycling of carbon and nitrogen.

When placed in a suitable environment (like a drain or a septic) and applied in high numbers, our *Bacillus* species will proliferate, excrete enzymes, and break down the large organic matter into smaller usable compounds. However, when they are removed from this suitable environment, they can no longer be as metabolically active (i.e., their growth rates are slower).

There are at least two reasons for this reduction in metabolic activity. First, the downstream or open water nutrient concentration is at least 100-1000 times less concentrated than a typical clogged drain or septic system. Second, changes in the physical (i.e. temperature) and chemical (i.e. pH, salt concentration) conditions reduce the microorganisms capacity to grow. Once downstream, the metabolically inactive cell has several possible fates.

First, because the cell may lyse (break open) or be used as a food source by other organisms (predators), the cell may die. Second, this vegetative cell may become incorporated into the sediment. In this case, the growth of the bacteria is reduced to a fraction (approx. 1/2000th) of the optimal rate, dependent on the amount of waste material (food source) found in the sediment. Last, if the proper conditions are met, the vegetative cell may undergo a complex series of structural changes to form an endospore

The endospore will remain dormant, until a suitable environment exists where it will convert back to a vegetative cell. This would occur when the endospore reaches a residential or municipal waste treatment facility. In the last situation, the introduced bacteria becomes incorporated into an environment that already contains many species of bacilli, and will continue to clean up nature's waste.

Enzymes are a very specialized class of proteins. They catalyze, or increase, the rate of a chemical reaction. It is not unusual that an enzyme will cause a reaction to occur one million times faster than normal. Every organism produces a large variety of enzymes, most of which are produced in small quantities and are usually involved in internal cellular processes. However, some microorganisms produce large quantities of enzymes that are excreted by the cell. Bacilli are one group of microorganisms known for this ability.

Microbial enzymes are often produced commercially for use in a wide variety of industries. These industries include the baking, paper, food, starch, pharmaceutical, meat, textile, and laundry industries. Products that use enzymes in their manufacturing include bread, syrup, glucose, meat tenderizing and detergents.

The use of enzymes are advantageous because they act very fast, are not used up in a reaction, and are very specific for the type of reaction that they catalyze.

However, because enzymes are very sensitive to change in their physical and chemical environment, they are relatively short lived. A change in temperature, pH, or salt concentration will denature (or destroy) the enzyme.

In addition, enzymes are very sensitive to biological activity. Since enzymes are mainly protein (rich in nitrogen and sulfur) they are substrates (food source) for bacterial growth. Bacteria make use of these molecules by secreting enzymes (proteases) that degrade (among other proteins) enzymes. The enzyme fragments are absorbed into and used by the growing bacteria. These characteristics, of quick action followed by a reduction of activity, are good for our products because they give a quick start to the degradation process, create a situation where the bacteria can proliferate, and are not harmful when transported downstream.

In summary, both introduced bacteria and introduced enzymes have several characteristics in common that will determine their fate in the environment and address our concerns about the fate. First, both are naturally occurring and can be isolated or identified in the environment. If they do survive downstream, they would continue to help clean up waste by products. Second, both are sensitive to physical and chemical changes in the environment (nature's way of population control). Lastly, both are acted upon by microbial activity (predators).

Frequently Asked Questions:

What are Calfarme Bio Clean and BioPlus made of ?

Bio Clean is an engineered formulation of different bacterial strains. They have been found to be most effective in digesting organic waste which causes malodors and blockages of pipelines in drain and sewer systems. **BioPlus** also uses a multi-bacterial strain formula similar to **Bio Clean**, it contains specially fortified enzyme-producing bacteria and cleaning agents to speedily solve a wide range of problems caused by organic waste.

How do Calfarme BioClean and BioPlus work ?

Once released into an environment where organic waste is present, these biological formulations quickly breakdown the waste metabolically. The bacteria secrete powerful enzymes which liquefy waste. The liquefied waste matter serves as food for the bacteria which continue multiplying until all organic waste is consumed. Eventually, the bacteria degrade into harmless carbon dioxide and water.

How safe are Calfarme BioClean & BioPlus ?

The bacterial cultures present in **Calfarme Bio Clean & BioPlus** have been produced in the United States under controlled conditions. These strains, which are similar to those found in the earth's soil, are harmless to humans and animals. They are guaranteed to be pure, and free of pathogenic or disease-causing organisms. The active ingredients in **Calfarme Bio Clean & BioPlus** are approved by the US Department of Agriculture (USDA) for use in federally inspected meat and poultry plants.

How about urine smells in the washroom?

Urine is largely made up of urea, which degrades into ammonia. It is this ammonia which when released into the atmosphere, contribute to the urine odor problems often found in washrooms. The bacterial strains in **Calfarme Bio Clean & BioPlus** prevent the release of ammonia by utilizing its soluble form as its sole source of nitrogen in the process of growth. Thus, urine is broken down, but no malodor causing ammonia is given out.

Will Calfarme Bio Clean & BioPlus s remove urine stains?

Although **Calfarme** enzymes are used in stain removing products it is not advertised as a Stain Remover. Why? Because stains can be very difficult or impossible to remove, no matter what some products may claim. Sometimes the stain is not stain, but a permanent discoloration of the material due to a chemical reaction caused by the urine.

Will Calfarme Bio Clean & BioPlus work on sub floors?

Yes, **Calfarme Bio Clean & BioPlus** work on any surface or material the solution comes into contact with. The solution must be allowed to penetrate into the wood pores just as the urine had penetrated. This is only recommended for small, localized spot treatments.

Will Calfarme Bio Clean & BioPlus remove urine from concrete?

Yes, **Calfarme Bio Clean & BioPlus** works on any surface or material the solution comes into contact with. Concrete is a porous just like wood. Just pour the solution on the concrete and let dry.

Can Calfarme Bio Clean & BioPlus be used in carpet cleaning machines?

Calfarme Bio Clean & BioPlus is recommended for use in any type of cleaning machine. Dilute with cleaning chemicals that have a pH level between 5 to 10. To effectively eliminate odors, **Calfarme Bio Clean & BioPlus** must be applied full strength.

Will Calfarme Bio Clean & BioPlus work on chairs, sofas or mattresses?

Yes. Firstly, remove the soiling such as faeces, vomit, grease and organic compounds from the relevant surfaces using BioClean & BioPlus. However, we strongly recommend as a "pre-treatment", to soak the affected areas thoroughly with BioClean & BioPlus to remove the odor from difficult to reach places, and successfully treat the problem area.

Will Calfarme Bio Clean & BioPlus remove urine odors from the padding underneath the carpet or will I have to replace the padding?

Calfarme Bio Clean & BioPlus will even remove the odors from the padding with out having to remove the carpet. When Calfarme Bio Clean & BioPlus enzymes solution is poured onto the carpet, the solution will saturate the carpet, penetrating the carpet padding, and the sub floor just as the urine did. By saturating the carpet, the solution comes into contact with all the urine residue, eliminating the urine odors. There is no requirement to lift the carpet up to expose the padding.

Can Calfarme Bio Clean & BioPlus kill flying and crawling insects?

Not kill. The enzymes found in Calfarme Bio Clean & BioPlus (which are non-hazardous to humans & animals), are incompatible with the insects' simple digestive systems. Furthermore, these enzymes remove the microscopic food sources which attract these insects. Therefore Calfarme Bio Clean & BioPlus will effectively reduce & keep these insects away.

What is bio-enzyme technology and How does it work?

In order to explain how bio-enzyme technology works, you must first differentiate between enzymes and micro-organisms (microbes). Microbes are cells which replicate approximately every 20 minutes and release enzymes to do the cleaning or degrading work. Enzymes are the by-product of a micro-organism and the degrading, digesting and cleaning is done by enzymes. So, micro-organism are single cell organisms which produce enzymes to degrade their food and human beings are multi-cell organism producing enzymes to break down their food. Anything that is organic can be degraded by enzymes. Micro-organism are particularly useful for sub-surface cleaning jobs such as drains, pipe-work, in WCs and urinals etc, as well as in grease traps, septic and interceptor tanks. Sophisticated micro-organisms stick to the linings of these surfaces releasing enzymes to continually digest wastes, fats, greases and scale.

Enzymes, and by this I mean extracted from the micro-organism, stabilized within the cleaning products targeted at a specific dire problem, denatured (i.e dead) once they've done their job, are used for cleaning on the surface any surface almost anywhere.

What are the main ways that it differs from the action of traditional cleaning chemicals?

Traditional methods of cleaning just "lift the dirt" usually only emulsifying a problem which then requires a further job of cleaning the mess up and disposing of it. These are non-degradable materials, wastes and biocides which are sent downstream for someone else to sort out.

Enzymes will partially degrade or breakdown the effluent into an easily degradable form, digestible nutrients and other useful enzymes. What is left is water soluble and can be safely returned to the environment.

Traditional, conventional cleaners only slice off "the surface layer of dirt. However, without extensive mechanical effort or repeated applications they do not penetrate into cracks, crevices, surface scratches or carpet pile roots. These are the very areas where bacteria and parasites can form and multiply.

Bio-active cleaners are designed to penetrate more deeply and clean more thoroughly. Kept moist, the enzymes and microbes will go on working until all organic waste (the food source for bacteria and potential pathogens) is consumed. As a result bacteria counts are kept lower for longer and surfaces are clean enough to accept final surface sanitizing without additional preparation.

Enzymes whilst cleaning more hygienically than traditional chemicals are also very gentle with no damage or erosion to surface materials.

Enzymes work as quickly as chemical cleaners but in addition they don't stop working until they have consumed all traces of targeted waste. In other words, give an enzyme good working conditions such as moisture and lots of food /nutrients and you've got a happy, very hard working, long lasting bio-worker on your team.

What are its applications and Where is it currently being used?

Bio-active cleaning and hygiene products can be used almost anywhere there is organic soiling. It will have a big impact where there is lot of organic matter and waste; where there is odor or blockage problem and where exceptional cleanliness is required. Typical areas might be in a factory where there is oil and grease, in warehouses, garages, workshops, railway stations and petrol forecourts. The hospitality trade, clinics and nursing homes, sandwich bars, fast food outlets, pubs, clubs and cinemas and sports stadium are cleaned using enzymes as are hospitals, theatres and concert halls. The list itself is endless but boils down to if you've got a polluting, dirty problem there is probably an enzyme that can digest it away for you.

Enzymes can be used on porous surfaces, like concrete, some tiles or wood; hard surfaces like painted walls, metals, parquet flooring, sealed floors, porcelain or melamine for example. Soft surfaces like carpets and upholstery are also ideal surface to clean using enzymes. Enzymes can be used on deep or maintenance cleans and will produce a more powerful, rapid, effective, and deeper sanitizing clean than most other legal contemporary cleaners. It also goes without saying that micro-organisms are now quite widely accepted as cleaners in urinals, WC's, sewers, pipe works, washrooms, grease traps, septic and interceptor tanks. There are many contract cleaners, carpet cleaners, drain maintenance operatives, car valeters, vets and domestic users of enzymes and micro-organisms and the list grows.

What growth has the bio industry experienced in the cleaning market over the last two years?

Over the last two years the main growth in bio-active products has come in sub-surface products, mainly drain, sewers, pipe works, septic, and grease traps. This would also include urinal and washroom pipe works. Enzymatic surface cleaning is just beginning to take off.

What impact does it have on the environment and is it really as ecological as it appears?

Enzymes cause no damage to the environment. In fact they can only help the environment, being Nature's way of cleaning up. All we are doing with enzymatic cleaning is concentrating millions of times, the power of nature targeted at a particular dirt or pollution problem. There are billions of enzymes available to digest dirt in a single, level teaspoon of product to which you would add several liters of your water further diluting them.

Cleaning with enzymes and micro-organisms is totally environmentally responsible and truly green "cleaning. This can only be a better solution to cleaning problems as the degraded dirt and residual enzymes in the water can be flushed to drain and will help water treatment plants further down the sewer line.

With microbes and enzymes you can obtain a cleaner discharge and out-flow waste is purer (BOD Biological Oxygen Demand and COD Chemical Oxygen Demand is substantially reduced). As a result discharge costs are lowered and drainage systems are better maintained.

A good thought to remember is that the waste water that goes down the drain is going to be recycled and drunk tomorrow it follows that you want it as clean as possible with no harmful products in it.

Is the traditional cleaning chemical industry feeling any impact from biotechnology?

Not at the moment, just look at the the cleaning industry figures. The major chemical brands are well established and the average user has been indoctrinated into believing bleach or a chemical is king. It will be very interesting, if as is possible, the EU outlaws bleach type products to see just what the majors and their marketing departments will do. But the main cry is brand protection at the moment to the exclusion of bio-active products. There are some well know names manufacturing sub-surface micro-organisms, e.g drain cleaning and grease trap maintenance but none are yet marketing true enzymatic surface cleaning products. However, it would also be a very short-sighted major chemical manufacturer that has not got his biocleaning enzyme armory ready for a future launch.

Why Bacteria are not Enzymes, and other Essentials?

Many products today contain bacteria or enzymes that can clear blocked pipes, break down oil or grease and remediate the environment. To appreciate and understand the potential of these products, we need basic information about bacteria and enzymes to be aware of their benefits and uses. Historically, we have been using bacteria and other enzyme-producing micro-organisms to our advantage for many years. Within the food industry, we have created wines that are made by the enzymatic actions of microbes on grapes, and in grounds care we mulch our grass and leaves by allowing the microbes to break them down to a usable fertilizer. In the environment, we use the action of microbes to degrade our sewage, and even in environmental pollution, like oil spills, microbes are used as a partial measure to break down the oil that pollutes water.

What is the difference between Bacteria and Enzymes?

Bacteria are not enzymes. Like all living cells, bacteria produce and use enzymes to break down or assimilate (put together) chemical compounds necessary for cell survival. Some scientists refer to bacteria as "sacks of enzymes." Enzymes are termed "biological catalysts" because they are chemicals (mainly protein) that bind with another chemical (referred to as the substrate) that is then broken down. Because of their enzymes, bacterial organisms vary in their abilities to withstand environmental conditions and break down compounds. Some of these organisms can withstand temperatures of 212 degrees Fahrenheit or minus 200 F. Some live in extremely acidic or alkaline conditions, and some are able to use oil (hydrocarbons) or lipids (fat) for food. These survival characteristics are governed by the bacteria's ability to make and use various enzymes. Factors that are important for enzyme action alone, or for bacterial action via enzymes, are temperature, pH (degree of acidity or alkalinity) and solubilization of the substrates. Most bacteria are active in an environment of 90 to 100 F with a neutral pH.

Pure enzymes vary in pH requirements and stability. When pure enzymes are added to a building environment such as a drain, the enzyme is usually short-lived due to the fragile nature of the enzyme under those conditions. The solubility of the substrate can be improved by the presence of surfactants (detergent-like substances) added to the enzyme cleaning solution.

What is Pure Enzymes?

An example of the beneficial action of an enzyme is the production of lipase in the presence of cooking grease. Under the appropriate conditions, bacteria release lipase enzymes that bind to lipids, which may have been rendered soluble by surfactants.

A lipid is a complicated structure that usually contains fatty acids that are bound to a basic glycerol structure. The lipase enzyme attacks the lipid, releasing the fatty acids. These fatty acids can then be broken down to smaller compounds by enzymes from other bacteria or from the same bacterium.

This same bacterium, or other bacteria, may produce protease enzymes (that break down protein from the meat that is present in the grease) and amylase enzymes (that break down starch from the flour that is present). The grease, which is a combination of lipids, proteins and starch, is broken down to more soluble compounds that flow more readily.

Pure enzyme solutions are made by extracting enzymes from animal tissues, the broth in which microorganisms grow or from lysed microbial cells. The stabilization of enzymes is sometimes difficult because they have to be packaged at the correct pH level with a chelating agent, which protects the enzymes from binding to certain metals and becoming inactive.

Some enzymes are offered in commercial products to help clear drains or partially break down proteins. The disadvantage in using enzyme solutions alone is that pure enzymes will disintegrate in a short period of time, while bacteria are capable of colonizing and will reproduce to produce more enzymes.

Will there be any mutation between the cleaning bacteria and the bacteria present in the waste from the hospital?

Genetic transfer between the organisms will not occur as there are two distinctly different groups of bacteria with very different DNA. There has never been genetic transfer between these groups of bacteria even under favorable laboratory conditions

The organisms that are used are considered very stable and very old. THEY ARE NOT GENETICALLY MODIFIED. These organisms are found in soil and water all over the world. They are considered absolutely safe. Adaptations are very common, example - Adapting to a colder water temperature than optimum.

Mutations are EXTREMELY uncommon. Usually, adaptations occur in great numbers of organisms while mutations happen to only single organisms. We put in minimum 1x10⁶ organisms per ml of finished product (BILLIONS OF BUGS) because most organisms die from chemicals or passthrough being carried by the water. The chances that one organism mutates, and thrives in the environment is approaching zero.

Will the mutation be bad/virulent or harmless?

Any mutation which may occur will be harmless as the new pathogen could not survive under waste stream conditions. The chance of a detectable mutation is much less than winning the lottery. Since harmful mutations usually occur in the body environment (body temperature, blood pH, etc) it is very unlikely that a mutation would be harmful.

Confirm that the cleaning bacteria (bacillus group) will overwhelm the pathogenic strains?.

The Bacillus group of organisms will completely out compete the indigenous organisms as the environmental conditions in the waste water will favor them and be detrimental to the pathogenic strains. In addition the Bacillus group will directly inhibit the growth of pathogenic bacteria. Competitive exclusion is the term we use to show that the safe bacteria that perform a beneficial function compete for the available nutrients and overwhelm the environment thereby excluding the pathogenic strains (or non pathogenic strains that cause bad odors) from establishing and dominating. Very few pathogenic strains would grow in non-body conditions.

How sure are you that no mutation will occur?

Occasional mutations may occur but we are 100 % sure that harmful mutations or harmful genetic transfer will not occur.

We are very confident that this will not happen in my lifetime. Do not be fearful of the product. For example, the bird flu was a disease that transferred to humans; it was not a mutation of a good organism into a bad organism.

What safeguards do you have in the make-up of the cleaning bacteria that it will not turn into a bad mutation when in contact with the pathogenic strains existing in hospital waste?

The safe guard is that these particular organisms were specifically chosen so that this event will not occur.

We use pure culture to begin the manufacturing process and we use organisms provided by the ATCC (American Type Culture Collection). We are assured of the purity of the product. If any batch shows any signs of contamination, the batch is destroyed. Additionally, the alcohol used as a preservative will kill any non-spore forming pathogen.

Bacteria do not mutate due to contact. The common belief is that organisms mutate due to environmental stresses or extinction conditions (or human manipulation). In a thriving environment, where BILLIONS of competitors are continuously added, the conditions are not right for mutation, the bad organisms die.

Hospitals use a lot of germicide and biocide to kill the bacteria present in their waste, how will this affect the cleaning bacteria?

Continuous application is necessary. The bacteria continuously are killed and reapplied. The spores are not killed by these chemicals. The germination of the spores, and the outgrowth of the organisms is where that material is degraded. It is very good for our product because the growth of the new organisms provides the work that we are looking for!!!

Is this product suitable for large scale usage ? To clear long sewer line chokes in a hospital environment.

Calfarme's BioPlus have treated large scale, sewer systems, with a very good effect. However, we use an application rate based on the water flow. This would mean using 200 liter drums and pumping the product into the system. (Recommended Usage for Hospitals: Daily application, or application multiple times a day is required because of the tremendous amounts of sanitizers and antibiotics discharge in hospital.

Can BioPlus product clear the toughest grease and oil formed at the inner wall of the drain pipes which are 6 to 8 inches in diameter and 50 to 100 meters long.

Grease and oil on inner walls of pipes can be removed in small or large pipes. BioPlus effectively seeks out organic wastes, clears the pipe and eliminates the source of even the most offensive odors. It also removes the food source for insects including ants, cockroaches and breeding offlies.

Will Calfarme BioPlus do any harm for the pipe joints and whether suitable for all types of pipes like PVC, GI etc.

No harm will come to any piping!!!

Calfarme BioPlus is Safe, Effective, Natural, Non-Acidic, Non-Alkaline, Non-pathogenic and Environmentally Friendly.

For more information on how BioClean & BioPlus technology can help solve your malodors and drain blockages problems, contact your Calfarme representative.