



## INDUSTRIAL GREASE DIGESTER

### DESCRIPTION:

ALKEN **CLEAR-FLO® 4003** is a concentrated dry formulation of bacteria selectively adapted to the accelerated breakdown and removal of oily material (fats, grease and oil), whether of animal or vegetable origin. Floating and/or solidified oils and greases are a major cause of operating difficulties in wastewater treatment systems. Recently reformulated with the key spore-forming *Bacillus* strains that have made ALKEN **ENZ-ODOR® 2** so amazingly effective, ALKEN **CLEAR-FLO® 4003** is especially suited for use in treating wastewater emanating from food processing industries involved in meat and poultry packing, cheese and vegetable oil manufacturing, dairy processing, rendering, etc., as this waste enters municipal wastewater treatment plants. **Contains no added surfactants**, so it can be used in New Jersey, California and Texas.

### CHARACTERISTICS:

Bacteria count:	5 x 10 <sup>9</sup> cfu/gm
Appearance:	free flowing, brown powder
Odor:	yeast-like
pH:	neutral

### FEATURES AND BENEFITS:

- Cultures grow in either the presence or absence of oxygen.
- Tested and certified negative for *Salmonella*, *Shigella* & *E.Coli*
- Eliminates corrosion caused by sulfide oxidation to sulfuric acid.
- Contains a unique new strain of *Bacillus* that oxidizes hydrogen sulfide.
- Inhibits formation of hydrogen sulfide gas, and its accompanying odors.
- Digests fats, oils, and food grease in lift stations, grease traps, septic systems and drain lines.
- Improved degradation and deodorization of acetic, butyric, isobutyric, isovaleric, lactic, palmitic, propionic, stearic and valeric organic and fatty acids, partially responsible for odor in some lift stations.
- Formula denitrifies and anaerobically degrades starch and fats.
- Good stability and long shelf life.
- Contains no chemical surfactants or detergents.
- Non-toxic, non-corrosive, safe to handle and store.
- Effective over a wide temperature range( 42°F to 120°F).
- Effective pH range: 5.0 to 8.5, with optimum pH range of 6.0 to 7.5.

### TREATMENT REQUIREMENTS FOR SMALL APPLICATIONS:

For initial dose & problem systems, double the suggested feed rate for the first two weeks or until control is achieved. Since no surfactant is included in this product to augment bio-access to grease, addition of ALKEN® **896** nutrient germination catalyst, according to product directions, should augment performance, offsetting the lack of surfactant.

<u>Area</u>	<u>Maintenance Feedrate</u>	<u>Frequency</u>
Kitchen drain	1 teaspoon per inch diameter of drain	Weekly
Laundry drain	1 tablespoon per inch diameter of drain	Monthly
Grease trap	100 - 110 grams in drain close to trap*	Twice a month
Metering pump application	17 grams - 2 oz.(prehydrated w/ 1 gal.water)	Daily

For initial dose & problem systems: double the suggested feed rate for the first two weeks or until control is achieved.

\* Trap size is assumed to be 500 to 1000 gallons

### APPLICATION DIRECTIONS FOR MUNICIPAL AND INDUSTRIAL PLANTS:

See **Industrial/municipal dosage charts** for general application rates to lift stations and large systems.

To optimize the action of the bacteria, we recommend pre-hydrating the product by mixing each pound of product with 2 gallons of water at 70°F to 90°F and allow to stand for 1 to 2 hours. **Make sure water is free of chlorine.** Pour entire product, including bran into system. Alternatively, dry powder may be applied directly to the system, either loose or in soluble packets.

Your Earth Doctor service representative will prescribe both the initial application and the maintenance doses taking into consideration such factors as the total daily influent and effluent, BOD/COD loadings, suspended solids and levels of pesticides or other contaminants. Be aware that a heavy rainfall may bring significant contamination with its runoff, and a one-time dosage equal to the initial application may be needed to restore control. Mechanical aeration may be needed where natural aeration is deficient. Avoid use of algaecides, herbicides, and antibiotics when using ALKEN **CLEAR-FLO**®.

**Directions for 48 to 96 hour grow-out for grease-trap maintenance companies:** ALKEN **CLEAR-FLO**® **4003** is the product of choice, since it does not contain other ingredients to inhibit the process. First sterilize the tank with boiling water for 1 hour or use a 5% bleach solution for 20 minutes, but then rinse THOROUGHLY so as not to interfere with microbial growth. This is important to avoid growth of undesirable organisms. Tap water may be used. Since grease traps and lift stations are usually anaerobic, we recommend growth with 0.5 to 1 ppm of air supplied from a compressor and filtered through a 0.2 µm sterile filter (Whatman or Gelman), to keep contaminants out. The nutrient balance must be maintained so that the carbon to nitrogen to phosphorus ratio equals 100 to 6 to 3. To maintain production of high lipase, esterase and fatty acids, use olive oil, bacon grease and Tween 80 as your primary carbon source, with a small amount of glucose added to feed helper strains not able to produce lipase and esterase. Use inorganic nitrogen and phosphorus, such as ALKEN® **BIO-NUTRIENT 3**. To enhance growth rate, add 5% ALKEN® **896** and 1% ALKEN® **BIO-NUTRIENT 8**. Temperature during growth must be maintained between 82°F to 90°F (28° to 32°C). This process is the ONLY one to preserve adaptation of the strains, and does not contain stinky fatty acids, so that adaptation can be lost if growth is allowed to continue for longer than 96 hours. To assure that you have not picked up and grown contaminants, we recommend streaking the following media and growing overnight, before using the result of your growth: CHROMagar® ECC, CHROMagar® Salmonella and CHROMagar® Staphylococcus, to assure that you have grown OUR strains and not a stray pathogen from the air or from a worker's dirty hands. Add 1 to 3% of a 50% *Yucca schidigera* liquid, which serves as a mild and quickly degraded surfactant, but can be identified as a bio-catalyst in states that forbid the use of chemical surfactants, such as California and Washington.

Since we are unwilling to provide more of our trade secrets than revealed above, clients will have to experiment to determine exactly how much of each carbon source (oil and Tween 80) are to be used for optimal results. Do not add preservatives, as they will kill the gram-negative component in this formula. If you find the above process too complicated, and you want **guaranteed clean products**, we recommend you simply use our concentrated fully-formulated liquid ALKEN **ENZ-ODOR**® **2**, instead.

#### **PACKAGING AND HANDLING:**

ALKEN **CLEAR-FLO**® **4003** is packaged in 25 or 50 lb. containers. Store in a cool dry place. Avoid contact with eyes, skin and open wounds. Wash hands with warm, soapy water after handling.

Update: 05-06-2013