

Lagoon Medic

Technical Data Sheet

Lagoon Medic™'s microbial consortium demonstrates superior performance for use in extreme wastewater applications. Our proprietary blend of bacteria exhibit a broad range of degradation capabilities needed for effective maintenance of lagoons, septic systems and drain systems.

In nature, bacteria produce hundreds of enzymes in response to the organics present in their environment. They produce extracellular enzymes that break down proteins, starches, fats, oils, greases, and toilet tissue into smaller particles outside the bacterial cell. The bacteria then transport the smaller particles across their cell membrane for use as an energy source and for building of new cellular components. Since bacteria detect the organics present as potential food and produce specific enzymes to breakdown these organics, it is a very efficient system. Many different enzymes are required to completely breakdown a substrate.

Our proprietary consortium produces key extracellular enzymes including amylase, cellulase, lipase and protease. Lagoons and septic systems are nutrient rich systems for bacteria. Although many bacteria can utilize these organics as food sources, it is the bacteria with the most rapid production of these key enzymes that provide the most dramatic effects. Our microbial consortium is the next generation technology in microbial blends with superior degradation capabilities.

FEATURES AND BENEFITS:

- Eliminates the need for excessive pumping in septic systems.
- Eliminates odors caused by incomplete digestion of malodorous volatile fatty acids.
- Consists of a stable consortium of safe *Bacillus* spores.
- Produces multiple enzymes that provide a wide range of degradation capabilities.
- Synergistic blend that works in concert to provide superior performance across multiple applications.
- Excretes high levels of amylase, cellulase, lipase, and protease enzymes.
- Works under aerobic and anaerobic conditions.

TYPICAL PHYSICAL PROPERTIES:

| | |
|----------------------|--|
| Appearance and Color | Natural(Clear-Tan) |
| Form | Free Flowing Liquid |
| Fragrance | N/A(Slight Earthy Odor) |
| Bacterial Content | Proprietary blend of <i>Bacillus</i> Spores |
| Nutrient Content | Biological nutrients, surfactants and stimulants |

STORAGE AND HANDLING:

Store **Lagoon Medic™** in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area. Do not freeze or heat above 110°F. Keep away from incompatible materials (See SDS) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Keep away from children.

Wear eye and skin protection. Wash hands after handling. Avoid discharge to natural waters. Small spillages can be washed away with large amounts of water. Large spillages, if contained, can be returned to container.

SUGGESTED FEED RATES FOR LAGOONS:

| APPLICATION | STEP #1 | Step #2 | Step #3 | Step #4 |
|---|---|--|---|--|
| Initial Lagoon Inoculation for the reduction of sludge and solids which may be present in the system. | Determine the total system gallons for your lagoon. | Determine degree of solid build up in your system based on preference or requirements. | Apply 5 to 15 ppm of Lagoon Medic™ product to lagoon. | If possible, agitation of product with auger is suggested, but not required. |
| Subsequent or Secondary Applications to further reduce sludge and solid build up which may be present in the system. | Determine the total system gallons for your lagoon. | Determine degree of solid build up in your system based on preference or requirements. | Apply 3 to 5 ppm of Lagoon Medic™ product to lagoon. | Repeat Weekly for 4 -8 weeks. |
| Maintenance Applications for the continued reduction of sludge and solids which may be introduced into the lagoon system. | Determine the total system gallons for your lagoon. | N/A | Apply 1 to 2 ppm of Lagoon Medic™ product to lagoon. | Repeat Weekly or Bi-Weekly based on desired results as needed. |

PACKAGING:

Lagoon Medic™ is shipped in 5's, 55's or 275 gallon totes.

Recommendations given in this data sheet are based on tests believed to be reliable. However, the use of the information is beyond the control of Heartland Energy Group, Ltd., and no guarantee, expressed or implied is made to the results obtained if not used in accordance with directions or established safe practice. The buyer must assume all responsibility, including injury or damage from the misuse of the product as such, or in combination with other materials. This bulletin is not to be taken as a license to operate under or recommendation to infringe any patent.