



Wastewater Treatments

WE MAKE WATER CLEAN



**BACTERIAL CULTURES FOR
WASTEWATER TREATMENT**

**ROEBIC TECHNOLOGY, INC
INFORMATION AND
PRODUCT OVERVIEW**



BY ROEBIC LABORATORIES

ROEBIC TECHNOLOGY INC.

Manufacturers of proprietary bacterial products for waste treatment.

Building on over 50 years of success Roebic Laboratories, Inc. has had in both consumer and commercial markets, Roebic Technology products are the result of a long-term research and development effort and years of experience utilizing bacterial augmentation to solve waste problems.

The specially selected Bacillus bacteria in the RoeTech line of bacterial formulas have undergone extensive testing and have been patented by the United States Patent and Trademark Office in Roebic Laboratories' name.

The product list presently consists of five mixtures of non-pathogenic, naturally occurring Bacillus bacteria in stable spore concentrates which are available in either dry or liquid form, and two mixtures of Bacillus and Pseudomonas bacteria in powder form.

RoeTech products are also offered in a variety of concentrations to provide the user with the greatest possible economy, flexibility and end use effectiveness. Our most concentrated products contain ten to one hundred times more bacteria than is generally available and offer significant savings and greatly reduced shipping costs when compared to other products.

To endure the best possible results from the use of RoeTech products, technical assistance is always available from our staff microbiologists. We welcome your inquiries and will work diligently with you to solve your waste treatment problems.

Roebic Technology Inc. stands ready to satisfy every need for quality bacteria concentrates.

Additional information is available by contacting:
Steven Smith, Microbiologist - steves@roebic.com





OUR BACTERIA

The **RoeTech** line of bacterial products is available in both dry and liquid forms and in several concentrations. Details are provided on the Product Data Sheets.

RoeTech concentrated blends of *Bacillus* spores have been formulated to fit the needs of many industries, applications and product categories.

Each product contains multiple strains, which produce a variety of useful waste degrading enzymes.

Bacillus macerans
Bacillus amyloliquefaciens
Bacillus amyloliquefaciens
Bacillus macerans
Bacillus pumilus
Bacillus subtilis
Bacillus subtilis
Bacillus subtilis

Patent Numbers

6,174,718
6,171,848
6,174,847
6,177,012
6,083,737
6,162,635
6,162,634
6,140,106

These organisms are naturally occurring, non-genetically modified and are sold without added chemicals or enzymes. As pure spores, the products provide the greatest flexibility for use and application.



Wastewater Treatments

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Quality Bacteria Cultures for Wastewater

PRODUCT LIST

103

Three patented Bacillus strains
100% hi-low temperature range
Available in liquid and powder



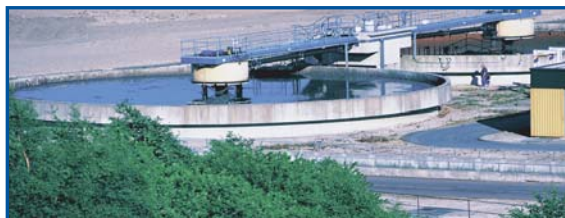
104

Four patented Bacillus strains
Residential, jan-san, light commercial
Available in liquid and powder



106

Six patented Bacillus strains
Municipal WWTPs, manure lagoons
Available in liquid and powder



106PS

Six Bacillus, two Pseudomonas strains
Food processing, surfactants/cleaners
Available in powder only



302

One Bacillus, three Pseudomonas strains
Heavy industry, petrochemicals
Available in powder only



All products are tested and certified free of Salmonella and Shigella

PACKAGING

Standard Packaging Powders : 50 lb plastic pail

Standard Packaging Liquids : 5 gallon plastic pail and 55-gallon plastic drum

Sales and Marketing:

Ken Keil, V.P. Sales U.S.
330 Sun Mountain Drive
Loveland, CO 80538
Cell: (970) 481-1992



103

ROETECH 103 is a highly concentrated mixture of three patented Bacillus bacteria. The blend exclusively contains bacteria which can grow over a wide temperature range of 5°C - 55°C.

Applications for **ROETECH 103** include wastewaters which have either unusually low or unusually high temperatures or wide fluctuations in temperature. Examples include aeration basins, lagoons with seasonal fluctuations and pretreatment of food processing wastewater.

ROETECH 103 is also ideal for use as a biological accelerator in composting.



PRODUCT SPECIFICATIONS

103 (Powder) 103 L (Liquid)

Bacteria Count	CFU/gram or ml
A. 1 billion.....	10 ⁹
B. 10 billion.....	10 ¹⁰
Enzymes Produced*	
Protease	
Lipase	
Amylase	
Urease	
Cellulase	
Nitrate Reductase	
pH range.....	6 - 10
temperature range.....	5° C - 55° C
oxygen requirements.....	aerobic

Product Benefits

Routine use of RoeTech 103 will:

- Reduce BOD
- Reduce Suspended Solids
- Control Odor
- Lower FOG
- Reduce Sludge Volume
- Improve start up and recovery from shock loading

High levels of these and other enzymes produced* by the three Bacillus strains in 103 result in an extremely effective and versatile blend with many uses and applications.

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ROETECH 104 is a highly concentrated spore mixture of four patented Bacillus bacteria with high enzyme producing ability. This blend is designed for use in commercial sanitation areas such as restaurant and hotel grease traps, line cleaning, and maintenance, and large on-site wastewater systems associated with resorts, country clubs, universities, apartment complexes and factories.

ROETECH 104 can also be formulated into consumer drain cleaners, septic tank treatment products, and products for boat and recreational vehicle holding tank treatment.



PRODUCT SPECIFICATIONS

104 (Powder) 104 L (Liquid)

Bacteria Count	CFU/gram
A. 1 billion.....	10^9
B. 10 billion.....	10^{10}
C. 100 billion ...(powder only)...	10^{11}

Enzymes Produced*

Protease

Lipase

Amylase

Urease

Cellulase

Nitrate Reductase

pH range.....6 - 10

temperature range.....5°C - 55°C

oxygen requirementsaerobic

facultative anaerobe

High levels of these and other enzymes produced* by the four Bacillus strains in 104 result in an extremely effective and versatile blend with many uses and applications.

Product Benefits

Routine use of RoeTech 104 will:

- Reduce BOD
- Reduce Suspended Solids
- Control Odor
- Lower FOG
- Reduce Sludge Volume
- Improve start up and recovery from shock loading



ROETECH 106 is a highly concentrated spore mixture of six patented Bacillus bacteria. Each strain produces multiple enzymes resulting in an extremely powerful biological treatment product.

This blend is designed for use in wastewater treatment systems including municipal sewage plants, and livestock manure ponds and lagoons, or areas where large volumes of waste require treatment.

Dosage rates will vary considerably depending on the application and system design. Technical assistance is recommended and available to ensure utilization of the bacteria for maximum benefit at the greatest economy.



PRODUCT SPECIFICATIONS

106 (Powder) 106 L (Liquid)

Product Benefits

Bacteria Count	CFU/gram or ml
A. 1 billion.....	10 ⁹
B. 10 billion.....	10 ¹⁰
C. 100 billion.....(powder only	10 ¹¹
Enzymes Produced*	
Protease	
Lipase	
Amylase	
Urease	
Cellulase	
Nitrate Reductase	
pH range.....	6 - 10
temperature range.....	5°C - 55°C
oxygen requirements	aerobic
facultative anaerobe	

Routine use of RoeTech 106 will:

- Reduce BOD
- Reduce Suspended Solids
- Control Odor
- Lower FOG
- Reduce Sludge Volume
- Control H₂S - See Case Study
- Improve start up and recovery from shock loading

High levels of these and other enzymes produced* by the six Bacillus strains in 106 result in an extremely effective and versatile blend with many uses and applications.



106PS

ROETECH 106 PS is a highly concentrated mixture of spores and vegetative bacteria. Six patented Bacillus bacteria combined with two Pseudomonas species provide a multiple enzyme producing culture with enhanced capacity to degrade surfactants, hydrocarbons and other chemicals in addition to standard sewage components.

This blend is offered as a bulk powder and in 8-ounce water-soluble packs.

Applications include municipal wastewater, food processing, livestock manure ponds, aerated septic tanks, or aerated treatment units (ATU's).



PRODUCT SPECIFICATIONS

106 PS (Powder) 106 PS WS-8 Water Soluble Paks

Bacteria Count	CFU/gram
1 billion.....	10 ⁹
Enzymes Produced*	
Protease	Lipase
Amylase	Urease
Cellulase	Nitrate Reductase
pH range.....	6 - 10
temperature range.....	5°C - 55°C
oxygen requirements	aerobic
facultative anaerobe	
50 Lb pail - gross wgt. 56 lbs; Net wgt. 50 lbs	
Pail Measurements: 13" W x 12" L x 14" H	
106 PS WS860 - Gross wgt. 35 lbs; Net wgt. 30 lbs	
Pail Measurements: 13" W x 12" L x 14" H	
106 PS WS820 - Gross wgt. 12 lbs; Net wgt. 10 lbs	
Pail Measurements: 11" W x 10" L x 9.5"	

High levels of these and other enzymes produced* by the six Bacillus and two Pseudomonas strains in 106PS result in an extremely effective and versatile blend with many uses and applications.

Product Benefits

Routine use of RoeTech 106PS/106PSWS-8 will:

- Reduce BOD
- Lower COD
- Reduce Suspended Solids
- Control Odor
- Lower FOG
- Reduce Sludge Volume
- Control H₂S
- Reduce surfactants/chemicals
- Improve start up and recovery from shock loading



ROETECH 302 is a highly concentrated mixture of spores and vegetative bacteria. One patented Bacillus strain combined with three Pseudomonas strains provide a multiple enzyme producing culture designed specifically to degrade surfactants, hydrocarbons ammonia and other chemicals in mixed wastewaters.

ROETECH 302 is formulated with an emphasis on hydrocarbons, petrochemicals, oils and other compounds which can be more difficult to degrade and pose a pollution hazard. It is the product of choice for ammonia reduction.

ROETECH 302 is 70% Pseudomonas bacteria and 30% Bacillus in a very concentrated one billion per gram powder.

ROETECH 302 is ideal for ATU's, package sewage systems and wastewater pre-treatment systems as well as larger WWTPs that handle higher levels of chemical components and ammonia



PRODUCT SPECIFICATIONS

302 Powder

Bacteria Count CFU/gram

1 billion.....10⁹

Enzymes Produced

Protease Urease

Lipase Cellulase

Amylase Nitrate Reductase

Various degradative enzyme systems to degrade hydrocarbons, chemicals and ammonia.

pH range.....6 - 10

temperature range.....5°C - 55°C

oxygen requirements.....aerobic
facultative anaerobe

Product Benefits

Routine use of RoeTech 302 will:

- Reduce BOD and COD
- Reduce Suspended Solids
- Control Odor
- Lower FOG
- Reduce Sludge Volume
- Reduce ammonia
- Improve start up and recovery from shock loading

INDUSTRIAL, MUNICIPAL AND COMMERCIAL CUSTOMERS



Activated Sludge Wastewater
Treatment Plants

Syrup & jelly manufacturer

Grease Trap Manufacturer

Chemical factory on-site
systems

Municipal WWTP for H₂S
control

Dairy manure lagoons

Municipal WWTP with
lagoon/evaporation ponds
(military bases)



Activated Sludge Wastewater
Treatment Plants

Bioreactor systems treating
various process wastewaters:

Winery wastewater
Tomato processor
Fruit juice processor

Aerated Treatment Unit /
Water reclamation

Lift stations & sewage lines
for FOG & H₂S control

Chemical and animal feed
manufacturer

Various hotels/resort on-site
wastewater systems

Hog manure lagoons

Ice Cream manufacturers

Milk processor wastewater system

Confections & baked goods makers

Municipal WWTP with lagoon/
evaporation ponds (military bases)



Activated Sludge Wastewater
Treatment Plants

Oil field services for onsite
ATU systems



BUSINESS OPPORTUNITIES

Roebic Technology Inc. welcomes inquiries from parties interested in becoming distributors or representatives of the **Roebic** line of bacterial products.

Individuals should be knowledgeable of bacterial products, wastewater technology and manufacturing if repackaging is considered. In addition, we request that such individuals are adequately capitalized, and are familiar with all aspects of the industry.

DOMESTIC SALES CONTACT:

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