

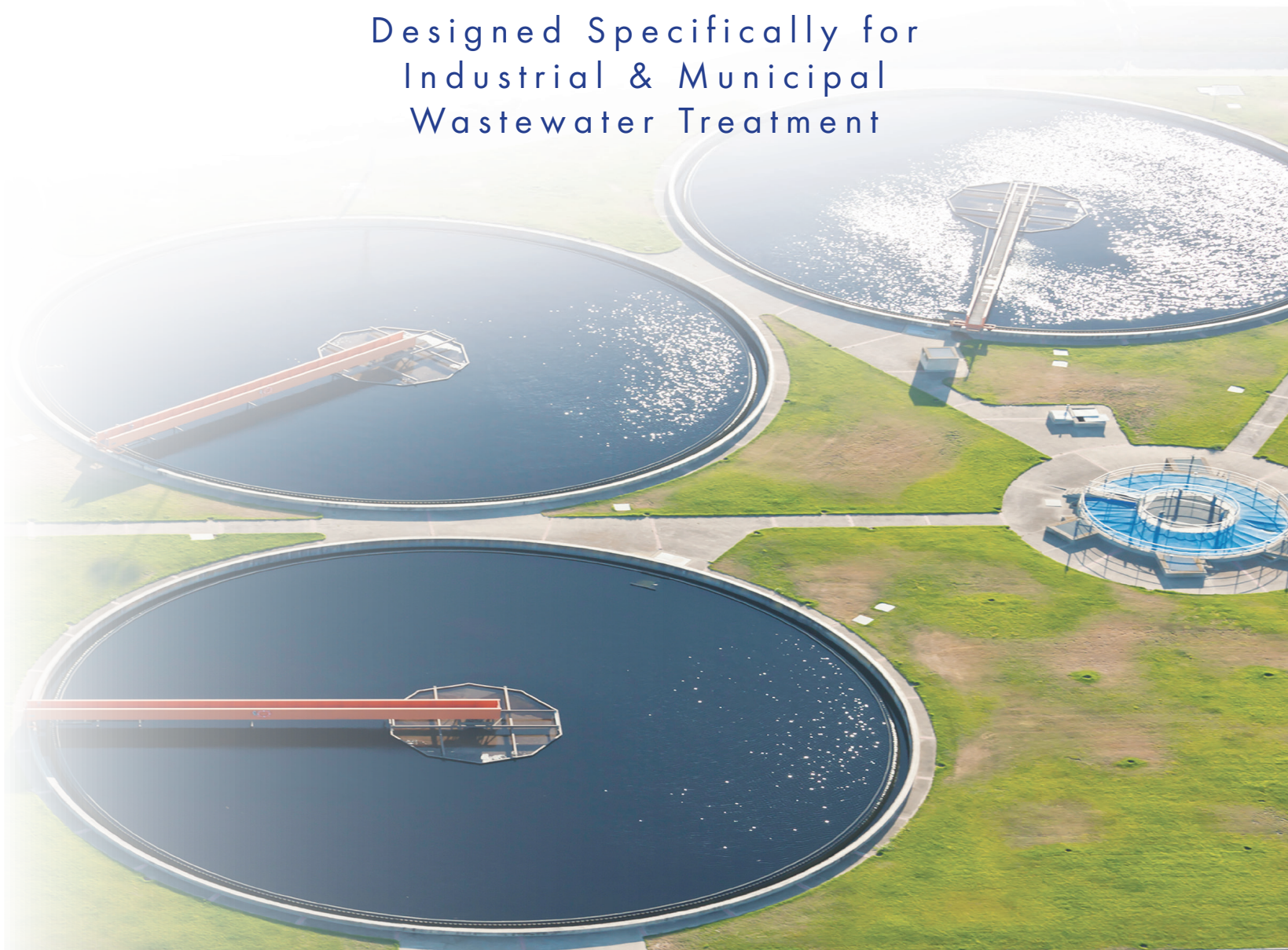


***Ecological Laboratories*** INC.

Solving Environmental Problems Naturally Since 1976

# MICROBE-LIFT®/IND SERIES BACTERIAL CULTURES

Designed Specifically for  
Industrial & Municipal  
Wastewater Treatment



[www.EcologicalLabs.com](http://www.EcologicalLabs.com)  
The Latest in Biotechnology

# MICROBE-LIFT/IND® Series

## BACTERIAL CULTURES

**Ecological Laboratories Inc. has developed a series of bacterial cultures to enhance the biological breakdown process in industrial and municipal wastewater systems. MICROBE-LIFT®/IND Series liquid and dry cultures are culture concentrates designed specifically for use in wastewater systems to achieve rapid startup, rapid recovery from upsets, the optimum level of system performance and improved system stability.**

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**Introducing the  
MICROBE-LIFT®/IND Series  
Ecological Laboratories**

**Inc.** has been working for three decades to enhance the biological degradation of slow and difficult-to-degrade organic chemical constituents that adversely impact wastewater system operations.

The **MICROBE-LIFT®/IND® Series** contains highly-specialized microorganisms that are selected and designed specifically to speed the biological degradation of problem compounds in waste-water systems.

Through the latest developments in biotechnology, the select micro-organisms in the **MICROBE-LIFT®/IND Series** cultures break down and metabolize difficult-to-degrade and toxic compounds—such as: phenols; non-ionic, anionic and cationic surfactants; chlorinated hydro-carbons; proteinaceous waste; starches, fats, oils and greases — at accelerated rates, all the way to CO<sub>2</sub>, H<sub>2</sub>O and cell mass.

The cultures found in the **MICROBE-LIFT®/IND Series** are designed to resist inhibitory concentrations of difficult-to-degrade constituents; improve system stability; and reduce system upsets and biomass kills common to industrial and municipal wastewater systems.

The **MICROBE-LIFT®/IND Series** contains both liquid and dry formulations and can be used to improve the performance of any biological wastewater system.

**MICROBE-LIFT®/IND Series** cultures solve difficult problems in stressed systems and make good systems operate better.

**MICROBE-LIFT®/IND HC** is a liquid culture consortium designed to resolve the most difficult of wastewater problems. This novel culture blend can be used in conjunction with the dry blends to resolve a wide range of problems.

The **MICROBE-LIFT®/IND Series** cultures can be used in any wastewater system to maintain and improve performance. This includes: suspended growth systems like facultative lagoons, aerated lagoons, all types of activated sludge systems such as conventional and high rate, “racetrack” type systems, and membrane bio reactors; fixed film systems such as trickling filters, biotowers, and any type of system that uses a media for biological attachment; as well as aerobic and anaerobic digesters.

**Cost Effectiveness**

The **MICROBE-LIFT®/IND Series** cultures can: expand system capacity; lower surcharges; reduce waste sludge generation; and reduce the use of chemicals e.g.: polymers, defoamers, etc.

**System Stability**

These cultures resist shock loads of chemicals, reducing upsets and kills, which may occur in waste-water treatment systems. This translates to improved system performance, stability and reduced final effluent BOD, COD and SS.

### Benefits

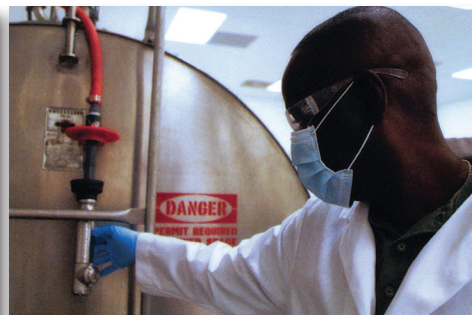
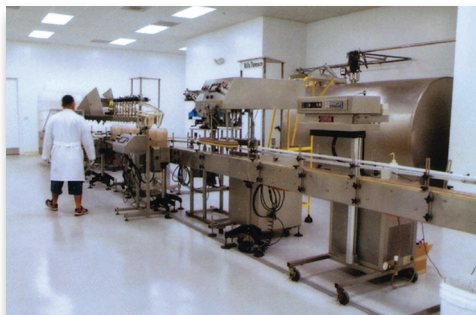
- Rapid Startup
- System Recovery
- Eliminates Odors
- System Stability
- Improves Solids Settleability
- Eliminates Pass Through Compounds
- Reduces BOD, COD and SS in Final Effluent
- Improves Nitrification
- Improves Cold Weather Performance

# TECHNICAL SUPPORT, LABORATORY, RESEARCH & DEVELOPMENT



## PRODUCTION - CLEAN ROOM

- Multistage fermentation processes
- HEPA filtration for controlled air quality
- Stainless steel equipment
- Operating room quality flooring helps to assure a sterile environment.



## GROW ROOMS - FROM 1 OUNCE BOTTLES TO 275 GALLON TOTES!





## Powdered Bacterial Cultures



### ML/WW

General wastewater blend, industrial & municipal  
High BOD, fats, oils and greases (FOG),  
proteinaceous waste, general slow-to-degrade  
compounds, system recovery and system stability.

#### SIZES

50 – 8oz (227 g) Water  
Soluble Packets = 25 lbs  
(11.340 kg)



### ML/PP

Paper, vegetable & fruit processors. as mercaptans  
and hydrogen sulfide.  
Pulp and paper waste constituents. Cellulose, Lignin,  
kraft process and food waste constituents.

#### SIZES

50 – 8oz (227 g) Water  
Soluble Packets = 25 lbs  
(11.340 kg)



### ML/GT

Meat, poultry and pork processors.  
Fats, oils and greases (FOG). Targets slow-to-  
degrade long chain fatty acid compounds.

#### SIZES

50 – 8oz (227 g) Water  
Soluble Packets = 25 lbs  
(11.340 kg)



### ML/LT

All industries.  
Cold weather conditions. All wastewater systems.

#### SIZES

50 – 8oz (227 g) Water  
Soluble Packets = 25 lbs  
(11.340 kg)



### ML/HYDRO

Petrochemical, refining, power generation coal  
gasification, textile, steel coking and land farming.  
Aliphatic hydrocarbons, aromatic hydrocarbons,  
and chlorinated hydrocarbons.

#### SIZES

50 – 8oz (227 g) Water  
Soluble Packets = 25 lbs  
(11.340 kg)



# MICROBE-LIFT® IND HI-COUNT

## Specially Formulated for Industrial & Municipal Wastewater Systems

### BENEFITS

- Solves your most difficult waste management problems when used in a controlled maintenance program.
- Significantly reduces waste odors.
- Reduces hydrogen sulfide which causes strong offensive odors.
- Improves BOD and COD removal efficiency.
- Reduces TSS.
- Digests solid organic wastes, grease, fats and oils.
- Reduces organic dyes in textile plants.
- Degrades hydrocarbons, halogenated aliphatic hydrocarbons, chlorinated aromatic compounds and chlorinated solvents into CO<sub>2</sub> and water.
- Reduces TPH and BTEX.
- Can be frozen and will retain its viability after thawing.
- Expands plant capacity.
- Helps establish or improve nitrification efficiency.
- Accelerates recovery from upsets and shock load.
- Improves cold weather operations.
- Accelerates plant startups.

MICROBE-LIFT/IND has a hydrogen sulfide odor which will dissipate quickly

**Using natural biological activity, these 100% natural and beneficial bacteria will decrease maintenance, increase efficiency and will help to reduce or eliminate surcharges.**

MICROBE-LIFT®/IND is nontoxic and nonpathogenic, the culture is harmless to man, animal and marine life.

MICROBE-LIFT®/IND comprises several biological strains. It is a special mixture of bacteria designed for a broad spectrum of applications.

- Breaks down cellulose.
- USDA authorized for use in federally inspected meat and poultry plants.
- Reduces ammonia and organic nitrogen levels.
- Works in a wide pH range.
- Works with or without light.
- Works with or without aeration.
- Contains billions of aerobes and anaerobes.

## 100% Biodegradable

*There are many variables involved in Industrial applications. We advise that you consult with your Ecological Laboratories representative in your respective country for recommended dosage rates.*





## Liquid Culture Blends



### ML/IND

All industries and general chemical applications.

Degrades a wide range of organic chemicals and odor-causing compounds, including those that contain sulfur, such as mercaptans and hydrogen sulfide.

#### SIZES

- 32oz (946 mL)  
(Sample Size)

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- 1 Gal (3.78 L)

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- 5 Gal (18.9 L)

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- 30 Gal (113.6 L)

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- 55 Gal (208 L)

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- 275 Gal (1,041 L)



### ML/SA

All industries.

Enhances biological performance and promotes bio-solids reduction.

#### SIZES

- 32oz (946 mL)  
(Sample Size)

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- 1 Gal (3.78 L)

---

- 5 Gal (18.9 L)

---

- 30 Gal (113.6 L)

---

- 55 Gal (208 L)

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- 275 Gal (1,041 L)



### ML/OC

All industries.

Microbial-based odor reduction. Hydrogen sulfide, mercaptans, amines.

On contact performance.

#### SIZES

- 32oz (946 mL)  
(Sample Size)

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- 1 Gal (3.78 L)

---

- 5 Gal (18.9 L)

---

- 30 Gal (113.6 L)

---

- 55 Gal (208 L)

---

- 275 Gal (1,041 L)



### ML/NUTRI-PACK

All industries.

A nutrient blend of macro and micro nutrients required for all spore and vegetative bacterial cultures necessary for bacterial growth.

#### SIZES

- 32oz (946 mL)  
(Sample Size)

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- 1 Gal (3.78 L)

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- 5 Gal (18.9 L)

---

- 30 Gal (113.6 L)

---

- 55 Gal (208 L)

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- 275 Gal (1,041 L)



### ML/DGTT

All industries with heavy fat, oil and grease loading.

Odor free formulation.

A liquid culture blend designed specifically for plant and facility effluent line treatment and commercial drain line and grease trap applications.

#### SIZES

- 32oz (946 mL)  
(Sample Size)

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- 1 Gal (3.78 L)

---

- 5 Gal (18.9 L)

---

- 30 Gal (113.6 L)

---

- 55 Gal (208 L)

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- 275 Gal (1,041 L)



### ML/N1

All industries.

Nitrifiers will achieve nitrification, startup, restart and provides stable nitrification in adequately designed wastewater systems.

#### SIZES

- 32oz (946 mL)  
(Sample Size)

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- 1 Gal (3.78 L)

---

- 5 Gal (18.9 L)

---

- 30 Gal (113.6 L)

---

- 55 Gal (208 L)

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- 275 Gal (1,041 L)

*There are many variables involved in Industrial applications. We advise that you consult with your Ecological Laboratories representative in your respective country for recommended dosage rates.*



# WASTEWATER TREATMENT

**MICROBE-LIFT®** bio-technology products are the most preferred bacterial products for improving wastewater treatment processes. With unparalleled capabilities to breakdown waste, reduce toxic and corrosive gases, and significantly reduce sludge. Wastewater operators and managers experience superior results from the efficiencies and related improvement in system stabilities regarding the reduction of COD, BOD, TSS, & Fats-Oils-Grease (FOG). Elimination of odor associated with the generation of hydrogen sulfide and ammonia is a significant benefit when using **MICROBE-LIFT®**. **MICROBE-LIFT®** is also effective in-situ for the remediation of pollution caused by hydrocarbons. Proven economic benefits have been experienced via the utilization of **MICROBE-LIFT®** technology and its abilities to reduce the cost of sludge handling, while improving system maintenance by reducing hydrogen sulfide, and other corrosives. **MICROBE-LIFT®** significantly reduces costs, increases operational efficiency, and assists in the achievement of regulatory compliance.

The unique consortium of microbes in **MICROBE-LIFT®** combine with indigenous populations to provide a bio-system that enhances the natural elemental cycles responsible for processing wastewater in a wide variety of systems. **MICROBE-LIFT®** enhances biomass efficiency and stability in wastewater treatment systems with bio-technology designed to breakdown, oxidize and remove difficult to degrade waste.

With over 40 years of experience, **MICROBE-LIFT®** is manufactured in the U.S. by Ecological Laboratories, Cape Coral, Florida.



## 13100 MUNICIPAL WASTEWATER CASE STUDIES

- 13101 **MICROBE-LIFT®** Technology Reduces BOD, COD, and TSS and Helps Lower H<sub>2</sub>S at Kibbutz in Israel
- 13103 Bioaugmentation with **MICROBE-LIFT®** Technology Remediates Polluted Drainage Retention Pond in Penang, Malaysia
- 13105 Bioaugmentation with **MICROBE-LIFT®** Technology Reduces Sludge Production by over 25% in Zeeland, Holland
- 13107 Well-Operated Municipal Plant Achieves \$130,000 Cost Savings from **MICROBE-LIFT®** Technology in Deutsch-Wagram, Austria
- 13108 Municipal Lagoon Treatment Efficacy Was Restored in LaCosta, Uruguay with **MICROBE-LIFT®** Technology
- 13109 An Average Reduction in Sludge of Approximately 20% Was Observed at Zutphen Plant in the Netherlands
- 13110 **MICROBE-LIFT®** Technology Improves Efficiency of Anaerobic Digesters in Columbia - Preventing Costly Expansion
- 13111 Bioaugmentation Reduces Sludge Production 20% Allowing Digester to Handle Increased Load in Hod Hasharon, Israel
- 13113 Bioaugmentation Remediates Heavy Organic Loading in Municipal Oxidation Pond in Drakenstein, South Africa
- 13114 California City Reduces Lift Station Maintenance with **MICROBE-LIFT®** Technology
- 13115 Pusan, Korea Achieve 20% Sludge Reduction Allowing Digester to Handle Increased Loading
- 13116 Shoal Lake - **MICROBE-LIFT®** Reduces Final Effluent BOD, COD, Nitrate and Pathogens, to Achieve Discharge Requirements, while Desludging the Lagoon Series and Reducing Odor.
- 13117 **MICROBE-LIFT®** Technology Speeds Compost Processing & Reduces Odor While Producing Higher Quality Compost
- 13118 Odor & Solids Reduction at Waste Water Treatment Plant on Resort Island in Southeast Georgia
- 13119 Sludge Reduction & Cost Savings at Sequential Batch Reactor Plant in Southern Pennsylvania

Case Studies Available On Request

**PLEASE NOTE:**

The case study results listed above were all achieved with Ecological Laboratories, Inc. proprietary technology. The products were formulated and manufactured by Ecological Laboratories, Inc. Additionally, technical support for administering the products as well as dosing instructions were provided by Ecological Laboratories, Inc. personnel in support of our worldwide network of distributors and representatives past and present...

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