

# MICROBE-LIFT/IND<sup>®</sup> Series

**BACTERIAL CULTURES**

Since 1976

**Designed Specifically for  
Industrial & Municipal  
Wastewater Treatment**



[www.MicrobeLift.com](http://www.MicrobeLift.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 hydrocarbons; 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 wastewater 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**



# WASTEWATER CULTURE SERIES

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	Industry	Target Applications
<b>MICROBE-LIFT/IND/HC (Liquid)</b>	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
<b>MICROBE-LIFT/SA (Liquid)</b>	All industries.	Enhances biological performance and promotes bio-solids reduction.
<b>MICROBE-LIFT/OC (Liquid)</b>	All industries.	Microbial-based odor reduction. Hydrogen sulfide, mercaptans, amines. On contact performance.
<b>MICROBE-LIFT/Nutri-Pack (Liquid)</b>	All industries.	A nutrient blend of macro and micro nutrients required for all spore and vegetative bacterial cultures necessary for bacterial growth.
<b>MICROBE-LIFT/DGTT (Liquid)</b>	All industries with heavy fat, oil and grease loading.	A liquid culture blend designed specifically for plant and facility effluent line treatment and commercial drain line and grease trap applications
<b>MICROBE-LIFT/N1 (Liquid)</b>	All industries.	Achieve nitrification, startup, restart and provide stable nitrification in adequately designed wastewater systems.

## Powdered Bacterial Cultures

<b>MICROBE-LIFT/WW* (Dry)</b>	General wastewater blend, industrial & municipal	High BOD, fats, oils and greases (FOG), proteinaceous waste, general slow-to-degrade compounds, system recovery and system stability.
<b>MICROBE-LIFT/PP* (Dry)</b>	Paper, vegetable & fruit processors.	Pulp and paper waste constituents. Cellulose, Lignin, kraft process and food waste constituents.
<b>MICROBE-LIFT/GT* (Dry)</b>	Meat, poultry and pork processors. All FOG.	Fats, oils and greases (FOG). Targets slow-to-degrade long chain fatty acid compounds.
<b>MICROBE-LIFT/LT* (Dry)</b>	All industries.	Cold weather conditions. All wastewater systems.
<b>MICROBE-LIFT/HYDRO* (Dry)</b>	Petrochemical, refining, power generation coal gasification, textile, steel coking and land farming.	Aliphatic hydrocarbons, aromatic hydrocarbons, and chlorinated hydrocarbons.

\*ALL DRY PRODUCTS AVAILABLE IN 25 POUND KEGS AND IN 8 OUNCE PVA WATER-SOLUBLE PACKETS.

When addressing wastewater system problems, **MICROBE-LIFT/IND Series** cultures are a tool you can count on to enhance overall biological wastewater system performance, overcome shock kills and achieve system stability to meet the discharge criteria for the wastewater system. **MICROBE-LIFT/IND Series** cultures and bioformulations are designed using the latest methods in biotechnology and supported by a well-trained staff. **MICROBE-LIFT/IND Series** products are well recognized in the industry with over three and one-half decades experience in industrial biotechnology.

Use **MICROBE-LIFT/IND Series** to enhance your biological system performance, as shown in the example below.

Case Study #27 - 9/2001

# MICROBE-LIFT/IND® Series

## Poultry Slaughterhouse Wastewater Treatment Plant

### DESCRIPTION

A 270,000 gal./day wastewater treatment plant was experiencing difficulty meeting its effluent discharge limits. **MICROBE-LIFT/IND** was chosen to address odor reduction, surface solids reduction (65cm floating layer on the sludge tank) and general improvement in biological performance as shown in figures **A**, **B** and chart **C**. Target objectives were developed as shown in **A** and a treatment regimen using **MICROBE-LIFT/IND** was selected and implemented on May 16, 2001.

### PERFORMANCE RESULTS

The **MICROBE-LIFT/IND** bio-augmentation program was successful in reducing ALL discharge parameters below established permit limits during the time period shown in figure **B**. In addition, odors were eliminated within 10 days of application.

### TRIAL PERIOD REVIEW

To determine overall wastewater system enhancement, see the data shown in figure **B**. The reductions in BOD, COD and FOG substantiate enhanced performance and verify **MICROBE-LIFT/IND**'s contribution to system performance, i.e. odor reduction, solids removal and a significant enhancement in the wastewater system's overall biological performance.

Figure A

Effluent Discharge Parameters vs. Permit Limits		
Parameter	Before Addition of Microbe-Lift/IND	Permit Limit
COD	4211 mg/L	150 mg/L
BOD	2725 mg/L	50 mg/L
TSS	1276 mg/L	50 mg/L
FOG	612 mg/L	5 mg/L
PO <sub>4</sub>	71 mg/L	15 mg/L
NH <sub>4</sub>	310 mg/L	5 mg/L

Figure B

Plant Performance Data: BEFORE vs. AFTER Microbe-Lift/IND						
'01	COD	BOD	TSS	FOG	PO <sub>4</sub>	NH <sub>4</sub>
1/17	2710	1496	610	173	97	106
2/21	3210	1445	702	230	83	214
2/25	3891	2023	909	490	80	270
4/25	4011	2407	1070	501	80	293
5/16*	4122	2725	1276	612	71	310
6/16	1618	779	760	367	48	187.3
7/3	630	275	311	5.3	3.6	120.4
9/9	293	46	153	1.1	0.26	13.4
9/16	107	12	64	0.3	0.1	2.1

\*MICROBE-LIFT/IND Application Started

Figure C

