

# PRODUCT FACT SHEET

## TCB™ — Total Control

### for Biological Wastewater Treatment



#### How and Where is this Test Kit Used?

Total Control for Biological Wastewater Treatment (TCB) test kits are based on the measurement of ATP and are designed for high-solids, high-biomass concentration applications, such as biological wastewater treatment plants. Through two separate analyses on a single sample, you can accurately determine *biomass concentration, health, and solids activity* in:

- ✓ Aerobic Reactors
- ✓ Anaerobic Reactors
- ✓ Activated Sludge
- ✓ UASB Reactors
- ✓ Collection Systems
- ✓ Raw Wastewater
- ✓ Biosolids or Soil
- ✓ Treated Effluent



#### What do the Results Mean?

The results obtained using TCB are used as an indicator of total biomass concentration and health. With two simple measurements, you will be able to determine the quantity and quality of biomass in your sample as well as

the fraction of total solids that are living within minutes. This information can be used to quickly troubleshoot and optimize the biological process and over time lead to continuous improvement.

#### How Does the Test Kit Work?

TCB allows the user to perform two analyses, Total ATP (tATP™) and Dissolved ATP (dATP™). For the detailed

procedure, consult the TCB Quick-Reference Guide. Results are used to calculate:

| Parameter                    | Description                                  | Calculation & Units                             | Range       |
|------------------------------|--|---|-------------|
| cATP™<br>Cellular ATP        | A measure of total biological concentration  | $cATP = tATP - dATP$<br>(ng cATP/mL)            | 1 to 20,000 |
| BSI™<br>Biomass Stress Index | A measure of biomass health                  | $BSI = dATP / tATP$<br>(% dead biomass)         | 0 to 100    |
| ABR™<br>Active Biomass Ratio | The fraction of total solids that are living | $ABR = (cATP * 0.5) / TSS$<br>(% living solids) | 0 to 100    |

#### Test Kit Sizes

| Cat. #  | Number of Analyses                  |
|---------|-------------------------------------|
| TCB-12  | 12 tATP, 12 dATP, 10 UltraCheck 1   |
| TCB-50  | 50 tATP, 50 dATP, 25 UltraCheck 1   |
| TCB-125 | 125 tATP, 125 dATP, 25 UltraCheck 1 |

\* UltraCheck 1 analyses are used to convert luminometer output (Relative Light Units, RLU) to ATP concentrations.

#### Test Kit Contents

| Included in TCB Kits                          | Storage Temp. | Shelf Life |
|---|---------------|------------|
| <b>Luminase</b><br>Luciferase Enzyme Reagent  | 4°C           | 3 mo.      |
| <b>UltraCheck 1</b><br>1 ng/mL ATP Standard   | 20°C          | 6 mo.      |
| <b>UltraLyse 30</b><br>ATP Extraction Reagent | 20°C          | 12 mo.     |
| <b>UltraLute</b><br>tATP Dilution Buffer      | 20°C          | 12 mo.     |
| <b>LumiSolve</b><br>dATP Stabilizing Buffer   | 20°C          | 12 mo.     |

\* Quantity of each component depends on kit size.

#### Required for Test Kit Use

| Item  | Cat. #                   |
|---|--------------------------|
| Luminometer   | EQP-LUK *                |
| 100-1000µL Micropipettor<br>1-5mL Micropipettor<br>12mm Test Tube Rack<br>17mm Test Tube Rack     | EQP-BUN *                |
| 100-1000µL Pipette Tips<br>1-5mL Pipette Tips<br>12mm Culture Tubes<br>17mm Culture Tubes w/ Caps | DIS-LBUN *<br>DIS-SBUN * |

\* Refer to additional fact sheets for description of these catalogue numbers.



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**LuminUltra™ Technologies Ltd.**  
Innovative Biological Monitoring Technologies

440 King Street, King Tower, Suite 630, Fredericton, New Brunswick, Canada E3B 5H8

Tel: (506) 459-8777 Fax: (506) 453-9860 www.luminultra.com