

PRODUCT FACT SHEET

TCM™ — Total Control for Microbial Growth Control



How and Where is this Test Kit Used?

Total Control for Microbial Growth Control (TCM) test kits are based on the measurement of ATP and are designed for high-solids, medium-biomass concentration applications, such as industrial process waters. Through two separate analyses on a single sample, you can accurately determine *biomass concentration* and *health* in:

- ✓ Paper Making Process Water
- ✓ Pulp Manufacturing Process Water
- ✓ Other Process Waters
- ✓ Raw Wastewater



What do the Results Mean?

The results obtained using TCM 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 within **minutes**.

This information can be used to quickly troubleshoot and optimize the biological control process – such as a biocide application and control program – and over time lead to continuous improvement.

How Does the Test Kit Work?

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

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

| Parameter | Description | Calculation & Units | Range |
|------------------------------|--|--|-----------------|
| cATP™ Cellular ATP | A measure of total biological concentration | $cATP = tATP - dATP$ (pg cATP/mL) | 50 to 1,300,000 |
| BSI™ Biomass Stress Index | A measure of biomass health | $BSI = dATP / tATP$ (% dead biomass) | 0 to 100 |
| ABR™ Active Biomass Ratio | The fraction of total solids that are living | $ABR = (cATP * 0.5) / (TSS * 1000)$ (% living solids) | 0 to 100 |

Test Kit Sizes

| Cat. # | Number of Analyses |
|---------|-------------------------------------|
| TCM-12 | 12 tATP, 12 dATP 10 UltraCheck 1 |
| TCM-50 | 50 tATP, 50 dATP, 25 UltraCheck 1 |
| TCM-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 TCM Kits | Storage Temp. | Shelf Life |
|--|---------------|------------|
| Luminase Luciferase Enzyme Reagent | 4°C | 3 mo. |
| UltraCheck 1 1 ng/mL ATP Standard | 20°C | 6 mo. |
| UltraLyse 7 ATP Extraction Reagent | 20°C | 12 mo. |
| UltraLute tATP Dilution Buffer | 20°C | 12 mo. |
| LumiSolve 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 1-5mL Micropipettor 12mm Test Tube Rack 17mm Test Tube Rack | EQP-BUN * |
| 100-1000µL Pipette Tips 1-5mL Pipette Tips 12mm Culture Tubes 17mm Culture Tubes w/ Caps | DIS-LBUN * DIS-SBUN * |

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



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