

# METTLER TOLEDO APPLICATION NOTE

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## O<sub>2</sub> Measurement In Biological Waste Water Treatment

### BACKGROUND

In order to clean organically polluted waste waters, biological treatment with air or pure oxygen is applied. In this process, effective control of O<sub>2</sub> transfer into the basins is required to enable the aerobic microorganisms to decompose the organic compounds. Without such careful control, a huge amount of O<sub>2</sub> might be wasted.

### THE PROCESS

The O<sub>2</sub> content has to be measured in very dirty solutions and in a harsh environment, and the operators have little time to maintain their equipment. A reliable and simple measurement system with minimal maintenance requirements is therefore necessary. The right system will lead to significantly lower costs due to reduction in required nutrient additions, reduction in oxygen consumed in the aeration process, longer service cycles and higher overall reliability.

### INSTRUMENTATION

Our InPro® 6050 O<sub>2</sub> sensor has proven to be exactly the right tool to fulfill all needs in waste water plants. Equipped with a unique Teflon® coated membrane, and a rugged plastic sensor design, it can withstand the severe conditions for weeks without needing service other than regular but simple cleaning. Change of electrolyte and/ or calibration has to be carried out only about every 1 – 3 months depending on the waste being treated.

For safe insertion of the sensor into the waste water basin, it is recommended that our customers use the InDip® series of submersion housings.

For effective control of the process, we advise using the O<sub>2</sub> 4050 transmitter at the back end of the measuring system.

## PRODUCTS

### 4050 Dissolved Oxygen Analyzer

- Economically priced, full featured transmitter
- Large, easy-to-read LCD allows quick view of information
- Two relays as limit contacts with delay timer to minimize false alarms and one relay as alarm or wash contact

### InPro<sup>®</sup> 6050 Dissolved Oxygen Sensor

- Rugged, plastic sensor design for long life and low maintenance
- Integrated RTD for automatic temperature compensation
- Unique Teflon<sup>®</sup> coated membrane prevents fouling
- IP66, IP67 and IP68 rated VarioPin connector for quick cable disconnect

### InDip<sup>®</sup> 500 Series Immersion Housings

- Economic method of sensor installation in open tanks and vessels
- Rugged protective cage protects the sensor against abrasive solids in the process medium