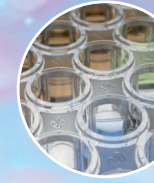




enverdi®  
DBO/BOD



Patent WO/2006/079733

## High-throughput BOD5

Throughout the last decades, the size of the environmental analysis market has been significantly increasing due to a growing public concern regarding natural resources conservation. Consequently, operating in high-throughput conditions has become a pre-requisite for analytical labs to face the fast growing number of samples. Inspired by the impressive progress in bioanalytics, the company Envolve has developed an innovative high-throughput technology, which couples fluorescence detection and worldwide standard 96-well microplate format.

BOD5 (Biological Oxygen Demand in 5 days) is a critical parameter for wastewater treatment monitoring. It is used daily to control the conformity of wastewaters released from urban and industrial treatment plants.

Envolve has developed and validated a strict surrogate to the reference method (EN NF 1899-1) making it possible to obtain BOD5 results in 48 hours for many samples: Enverdi-BOD.

- **Miniature:** incubation takes place directly in the fluorescence reader, bench surface less than 1m<sup>2</sup>
- **Simple:** 45 minutes are required to prepare 40 duplicated samples, which is 5 to 10 times faster than the conventional method
- **Automated:** data recording and management are fully automated.

### Theory

This new product is based on the use of a bioreagent, which is chemically reduced in microbial cells during the aerobic respiration, leading to an increase in the fluorescence signal. Fluorescence intensity, recorded throughout the incubation is directly proportional to the amount of organic substrates biodegraded.

Definite results are reached after 48 hours of incubation at 30°C.

The endpoint concentration provided by the Enverdi-BOD kit is directly expressed in mg O<sub>2</sub>/L, like for the reference method.



### Advantages

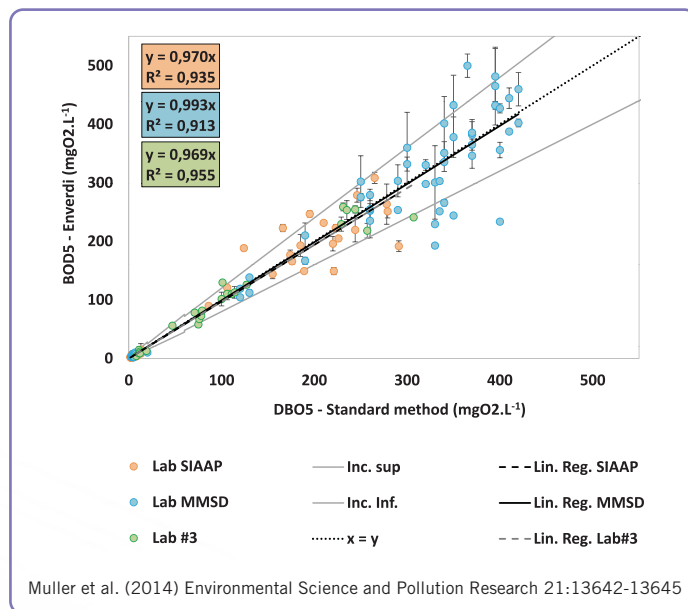
Enverdi-BOD provides the user with many features:

- **Fast:** analytical results obtained in 48 hours
- **Profitable:** the microplate format provides a sharp decrease in analytical costs, up to 3-fold
- **High-throughput:** one kit enables to perform up to 80 BOD5 (no replicates) or 40 (with duplicates)
- **Unique:** unique analytical tool for regulatory analysis and WWTPs' operation monitoring



### International validation

Enverdi-BOD has been validated internationally. This validation was performed jointly at the central lab of the Greater Paris Water Authorities (SIAAP, largest WWTP in Europe) and at the central lab of the Milwaukee Metropolitan Sewerage District (MMSD). All validation results comparing reference methods (EN NF 1899-1 in France and 5210 in the US) have been published in Environmental Sciences and Pollution Research (Muller et al., 2014).



Muller et al. (2014) Environmental Science and Pollution Research 21:13642-13645

Photos : Envolve - Karol Audibert - Fotolia.com | Last modification: 29/02/2016

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