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JAPANESE INDUSTRIAL STANDARD

Apparatus for the estimation of biochemical oxygen demand (BOD_s) with microbial sensor

JIS K 3602—1990

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In the event of any doubt arising,
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Apparatus for the estimation of
biochemical oxygen demand (BODs)
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1. Scope

This Japanese Industrial Standard specifies the apparatus for estimation (hereafter referred to as the "apparatus for estimation") of the value of biochemical oxygen demand (hereafter referred to as the "BODs") in the waste water of fermentation waste water, sewage, etc. by utilizing the microbial sensor of combining an immobilized microbial membrane with an oxygen electrode.

Remarks: Applicable standards in this Standard are shown in Attached Table 1.

2. Definitions

For the main terms used in this Standard the definitions in JIS K 0211, JIS K 3600, and JIS Z 8103 apply, and the rest of the terms shall be as follows.

- (1) immobilized microbial membrane An immobilized microbial membrane shall be the yeast *Trichosporon cutaneum*, IFO-10466 sealed in a membrane under a state wherein its physiological function is kept.
- (2) oxygen electrode An oxygen electrode shall be an electrode for measurement of dissolved oxygen specified in 7.3 (1) (Electrode) of JIS K 0803.
- (3) microbial sensor A microbial sensor shall be constructed by combining an immobilized microbial membrane with an electrode which detects the variation of the substance concentration to be generated when its microbe has decomposed and ingested organic substance, for example, the decrease of oxygen concentration following the increase of the respiration activity of microbe.

3. Structure of Microbial Sensor and Measuring System

3.1 Immobilized Microbial Membrane An immobilized microbial membrane shall be of the type which covers the surface of an oxygen electrode.

3.2 Oxygen Electrode The oxygen electrode shall be in accordance with either of the following electrodes.

- (1) Diaphragm polarograph type oxygen electrode
- (2) Diaphragm galvanic cell type oxygen electrode

3.3 Measuring Method of BODs Value The measuring method of a BODs value shall be in accordance with either of the following systems.

- (1) Batch system
- (2) Flow system