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**Technical requirement for environmental protection products.
Membrane bioreactor
(English Translation)**

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Foreword

To implement the "People's Republic of China Water Pollution Prevention Law" to regulate membrane bioreactor manufacturing, improve membrane bioreactor Quality should be the enactment of this standard.

This standard specifies the definition of membrane bioreactor, classification and nomenclature, basic requirements, performance requirements, test methods, Inspection rules and signs, packaging, transportation and storage requirements.

This standard is the first release.

This standard is developed by the Ministry of Environmental Protection Science, Technology organization.

This standard drafting units. China Environmental Protection Industry Association (Water Pollution Control Commission), Tianjin-source environment Technology Engineering Company Limited.

This standard is approved by the Ministry of Environmental Protection July 31, 2012.

This standard since November 1, 2012 implementation.

The standard explanation by the Ministry of Environmental Protection.

Environmental protection product membrane bioreactor

1 Scope

This standard specifies the definition of membrane bioreactor, classification and nomenclature, basic requirements, performance requirements, test methods, inspection rules and signs, packaging, transportation and storage.

Or industrial wastewater treatment is applicable to the day of treated water is not greater than 500m³/d of domestic sewage and biological treatment Reuse of membrane bioreactor.

2 Normative references

The standard content of the following documents cited in the articles. For undated references, the effective version applies to this standard.

GB/T 191 Packaging - Pictorial signs GB/T 700 carbon structural steel GB/T 985.1 gas welding, arc welding, gas welding and beam welding Recommended groove GB/T 1804 General tolerances Tolerances for linear and angular dimensions without individual tolerance GB/T 3091 low pressure liquid delivery welded steel pipe GB/T 3280 stainless steel cold-rolled steel sheet and strip GB/T 3797-2005 Electric Control Equipment GB 4208 housing protection (IP Code) GB/T 4219.1 Industrial Part 1 with a hard polyvinyl chloride (PVC-U) piping systems. Pipes GB/T 4237 hot-rolled stainless steel sheet and strip GB 5226.1-2008 Safety of machinery electrical equipment Part 1. General requirements HJ 535 Water quality - Determination of ammonia Nessler reagent spectrophotometric HJ 536 Water quality - Determination of ammonia acid spectrophotometric method GB/T 8923 steel surface before painting Rust grades and grade GB 11901 Water quality Determination of suspended solids - Gravimetric method Determination of GB/T 11914 Quality of potassium dichromate method COD GB/T 12771 fluid transport stainless steel welded pipe GB/T 13306 signs GB/T 13384 mechanical and electrical products packaging General technical conditions HJ 637-2012 quality oil and animal and vegetable oils determination of the infrared spectrophotometry GB 50235 industrial metal pipeline engineering construction and acceptance HJ/T 251 environmental protection product Roots Blower HG/T 3183 fluorine plastic lining single stage single suction chemical centrifugal pump technology conditions HJ/T 336 environmental protection product submersible sewage pump HJ/T 366 environmental protection product pipeline ultrasonic flowmeter HJ/T 367 environmental protection product pipeline electromagnetic flowmeter HJ 505 water quality BOD (BOD₅) - Dilution and seeding method JB/T 6170 Pressure Sensors JB/T 7256 self-priming centrifugal pump types and basic parameters JB/T 7392 digital pressure gauge JB/T 9273 electrical contacts JB/T 10203 Remote pressure gauge JC/T 658.1-2007 glass fiber reinforced plastic water tanks - Part 1 SMC combined water storage tanks JC/T 658.2-1997 glass fiber reinforced plastic tanks - Part 2 hand lay-piece tank HG 20520 GRP/PVC (FRP/PVC) composite pipe design requirements

3 Terms and Definitions

The following terms and definitions apply to this standard.

3.1 Membrane bioreactor membrane bioreactor (MBR)

A film as the carrier, the biological response (effect) and separation combined with progress of the reaction can change and improve the reaction efficiency provided Preparation.

3.2 Membrane module

The membrane element within the coupling member, the end plates and seals and other components of practical devices.

3.3 TMP trans-membrane pressure (TMP)

The pressure difference between the inlet side and the outlet side of the membrane. Units of kPa.

4.1 Classification

Membrane bioreactor by membrane bioreactor and the relative position of the classification, membrane placed inside the bioreactor for submerged membrane bioreactor (submerged membrane bioreactor, SMBR); membrane bioreactor placed External to external membrane bioreactor (side-stream membrane bioreactor, SSMBR).

4.2 Naming

Membrane bioreactor membrane bioreactor model by the abbreviation (MBR), classification abbreviation (S representatives dip no membrane bioreactor, SS on behalf of external membrane bioreactor) and treated water (m³/d) and a membrane area (m²) the Arabic numerals.

Example. MBR-SS-300/1200 Represents external membrane bioreactor, treated water is 300 m³/d, membrane area of 1200 m².

5.1 Composition

Membrane bioreactor from the reactor shell, membrane, pumps, fans, piping, instrumentation, and electrical backwash cleaning system Control and other components.

5.2 Manufacturing

5.2.1

membrane bioreactor drawings and documents shall be in accordance with procedures

approved by the manufacturer, and in accordance with this standard. No Note Dimensional tolerances shall comply with GB/T 1804's.

5.2.2

reactor shell can be manufactured by welding and assembling. Welding should close no leakage, no slag, porosity, crack Marks, shrinkage, weld defects such as undercut. Interior parts, such as welding should be solid and reliable, no cracks pattern, shrinkage and other welding defects. Weld Groove shall comply with GB/T 985.1 and GB/T 1804's.

5.3.1 Pump

Self-priming centrifugal pump shall comply with the provisions of JB/T 7256's; submersible sewage pump shall comply with HJ/T 336; the wash pump should break Co-HG/T 3183 requirements.

5.3.2 Fan

The fans shall comply with HJ/T 251's.

5.3.3 Electrical Control

5.3.3.1

Electrical cabinet body protection not less than GB 4208 in IP55.

5.3.3.2

Electrical cabinet selection yuan, the device shall comply with the provisions of GB/T 3797-2005 in 4.4.1.

5.3.3.3

Electrical wiring inside and outside the cabinet shall comply with GB/T 3797-2005 in the 4.12.4.

5.3.3.4

should have a level control, aeration control, membrane fouling detection warning, out of the water control and fault alarm protection Membrane electrical and automatic protection.

5.3.4 Instrumentation

5.3.4.1

Pressure measuring instrument selection pressure sensors, digital pressure gauge, pressure gauge and remote pressure as needed Tables, etc., and shall conform to JB T 6170, JB/T 7392, JB/T 9273, JB/T 10203 requirements /.