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**Technical requirement for environmental protection products.
Hollow fiber membrane bio-reactor unit
(English Translation)**

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Foreword

To implement the "People's Republic of China Water Pollution Prevention Law" to regulate the hollow fiber membrane bioreactor set design and production, improve hollow fiber Dimensional membrane bioreactor group is quality, the development of this standard.

This standard specifies the definition of the group bioreactor hollow fiber membranes, classification and naming, technical requirements, test methods, inspection rules and standard Chi, packaging, transportation and storage requirements.

This standard is the first release.

This standard by the People's Republic of China Ministry of Environmental Protection Science, Technology organizations to develop.

This standard drafting units. China Environmental Protection Industry Association, Beijing Water Technology Co., Ltd., Chinese Academy of Sciences Ecological Environment Research center.

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 hollow fiber membrane bioreactor control group

1 Scope

This standard specifies the definition of the group bioreactor hollow fiber membranes, classification and naming, technical requirements, test methods, inspection rules and Logo, packaging, transportation and storage.

This standard applies to submerged membrane bioreactor treatment process sewage and industrial wastewater treatment biodegradability.

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 Size GB/T 709 hot rolled steel sheet and strip, shape, weight and tolerance 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 3280 stainless steel cold-rolled steel sheet and strip GB/T 4237 hot-rolled stainless steel sheet and strip GB/T 5750.12 drinking water standard test methods of microbiological criteria GB/T 5836.1 drainage construction with a hard polyvinyl chloride (PVC-U) pipes GB/T 5836.2 drainage construction with a hard polyvinyl chloride (PVC-U) pipe fittings GB/T 8923 steel surface before painting Rust grades and grade GB/T 9969.1 General Industrial Product Manual GB/T 10002.1 water with a hard polyvinyl chloride (PVC-U) pipes Determination of GB/T 11901 Quality of suspended solids - Gravimetric method GB/T 12771 fluid transport stainless steel welded pipe Determination of GB/T 13200 Water turbidity GB/T 13306 signs GB/T 13922.1 water treatment equipment General Performance Test GB/T 14436 General industrial products assurance documents GB/T 19866 general principles of welding procedures and assessment GB/T 20103 membrane separation technology terms GB/T 20207.1 acrylonitrile - butadiene - styrene (ABS) pressure piping systems - Part 1. Pipes GB/T 20207.2 acrylonitrile - butadiene - styrene (ABS) pressure piping systems - Part 1. Fittings GB/T 50235 Industrial metal pipe construction and acceptance JB/T 2932 water treatment equipment and technical conditions

3 Terms and Definitions

The following terms and definitions apply to this standard.

3.1 Hollow fiber membrane bioreactor group is hollow fiber membrane bio-reactor unit

Assembled from the hollow fiber membrane element (referred to as the membrane element), gas distribution apparatus, catchment device, a basic framework into the water

treatment unit, set Biological reaction tank, solid-liquid separation apparatus, referred membrane group.

3.2 Membrane filtration area membrane filtration area

Refers to the effective membrane area of the hollow fiber membrane is a hollow fiber membrane element group and the units of m².

3.3 TMP trans-membrane pressure

The pressure difference between the inlet side and the outlet side of the membrane, the unit is kPa.

4.1 Classification

Membrane group by framing materials and membrane filtration area use classification.

4.2 Naming

The hollow fiber membrane bioreactor group Model group by the bioreactor's film abbreviation (MU), frame material identification (S on behalf of not Stainless steel, C for carbon steel), membrane filtration area (m²) of Arabic numerals and hollow fiber abbreviation (HF) and other components.

Example. HF-MU-S-300 indicates the frame is of stainless steel, membrane filtration area of 300m² hollow fiber membrane bioreactor device group.

5.1 Composition

Film group consists of hollow fiber membrane elements, gas distribution apparatus, catchment device, frame and other components.

5.2 Manufacturing

5.2.1

Film Group shall be in accordance with procedures approved by the drawings and technical documents manufacture, and compliance with this standard. Tolerance should be consistent with GB/T 1804 Provisions.

Parts 5.2.2 film material used by the group, the welding material and the adhesive material shall meet the technical requirements specified in the current national standard, the quality of welding operators Co GB/T 19866, the provisions of GB/T 985.1, the metal pipe installation and welding should be consistent with GB/T 50235 requirements of.

5.2.3

steel membrane group should comply with GB/T 700, GB/T 709, GB/T 3280, GB/T 4237, GB/T 12771 requirements, hard polyethylene Vinyl chloride should be consistent with GB/T 5836.1, GB/T 5836.2, GB/T 10002.1 requirements, ABS should be consistent with GB/T 20207.1, GB/T 20207.2 Frame material identification, S, C Hollow fiber Membrane bioreactor control group HF - MU-- -Membrane filtration area the provisions of other materials shall comply with the provisions of JB/T 2932's.

5.3.1 Hollow fiber membrane element

5.3.1.1

should be used in chemical and mechanical stability, corrosion resistance, high strength, long life, non-toxic, flux membrane material assembled in Hollow fiber membrane element.

5.3.1.2

Select the hollow fiber membrane element should follow the following principles.

Standard a) membrane element pore size between $0.01\mu\text{m}$ ~ $0.4\mu\text{m}$;

b) membrane pore size distribution of the membrane element concentration;

c) hollow fiber membrane filament tensile breaking strength of not less than 7 Newton;

d) good oxidation resistance film element;

e) of the film material trapped solute adsorption is small.

5.3.1.3

hollow fiber membrane element mounted within the membrane group should be easy to clean, repair and replacement.

Hollow fiber membrane element due membrane manufacturer's certificate and instructions for use 5.3.1.4.

5.3.2 Gas distribution means

5.3.2.1

gas distribution device consists of aeration piping and intake pipe composition, the device should be connected to a reliable and easy to remove accumulated sludge and residues and the like.

5.3.2.2

Aeration piping should be evenly arranged below the membrane element, aeration orifice should be smooth and free of burrs, aeration holes should be uniform outlet.