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**Technical requirement for environmental protection products.
Ultraviolet disinfection equipment
(English Translation)**

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Foreword

To implement the "People's Republic of China Water Pollution Prevention Law" to regulate the production, manufacturing ultraviolet disinfection equipment, improve the means of UV disinfection Quality home, the development of this standard.

This standard specifies the basic requirements for ultraviolet disinfection equipment, performance requirements, test methods, inspection rules and signs, packaging, transportation and storage.

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 Committee), Environmental Protection Technology Co., Fujian Newland Division, Tsinghua University, China Disease Prevention and Control Center.

This standard MEP July 31, 2012 for approval.

This standard since November 1, 2012 implementation.

The standard explanation by the Ministry of Environmental Protection.

Environmental protection product UV disinfection device

1 Scope

This standard specifies the basic requirements for ultraviolet disinfection equipment, performance requirements, test methods, inspection rules and signs, packaging, transportation and storage and other technical requirements.

This standard applies to drinking water, urban waste water, recycling water, hospital waste water, sewage and other livestock farms ultraviolet disinfection process Line sterilizing apparatus.

2 Normative references

This standard incorporates the following documents contain provisions. For undated references, the effective version applies to this standard.

GB/T 191 Packaging - Pictorial signs GB 4208 housing protection (IP Code) GB 5749 drinking water health standards GB/T 9969 Industrial Product Manual General GB/T 13306 signs GB/T 13384 mechanical and electrical products packaging General technical conditions GB/T 15464 instrumentation packaging technology GB 18466 medical institutions water pollutant discharge standards GB 18596 livestock and poultry breeding pollutant emission standards GB 18918 Municipal Wastewater Treatment Plant Pollutant Emission Standards GB/T 18920 urban recycling urban miscellaneous water quality GB/T 19837-2005 urban drainage ultraviolet disinfection equipment "Drinking water disinfectants and disinfection equipment health safety evaluation norms" (Trial) health supervision [2005] No. 336

3 Terms and Definitions

The following terms and definitions apply to this standard.

3.1 UV ultraviolet (UV)

Wavelength of 100 nm ~ 400 nm electromagnetic waves, which means that ultraviolet germicidal wavelength of 200 nm ~ C-band ultraviolet light of 280 nm (UVC).

3.2 UV disinfection equipment Ultraviolet disinfection equipment

The use of ultraviolet disinfection of water treatment equipment.

3.3 Closed ultraviolet disinfection device closed-vessel ultraviolet disinfection equipment

Also known as pressure pipe UV disinfection device disinfection within a closed pipe flow

UV disinfection device, including. Closed Consumers Poison chamber, UV lamp, quartz tube, ballast, UV intensity sensors, quartz tube cleaning equipment, cleaning power unit (such as a pneumatic Machines, hydraulic pumps, etc.), electrical power distribution and control systems.

3.4 Open Channel UV disinfection device open-channel ultraviolet disinfection equipment

Also known as canal ultraviolet disinfection device is installed in the open channel flow UV disinfection equipment, including. UV lamp module, Module holder, visor, repair rack module, the module manual cleaning tank, automatic quartz sleeve cleaning device, the cleaning power plant (such as air compressors, Hydraulic pumps, etc.), module lifting device, ballast, UV intensity sensors, electrical power distribution and control systems.

3.5 UV lamp module Ultraviolet lamp module

Several branch UV lamp and quartz sleeve fixedly mounted on the frame of a standardized structure.

3.6 UV intensity ultraviolet intensity (I)

UV and UV power per unit area perpendicular to the direction of propagation on the units of mW/cm².

3.7 UV efficiency ultraviolet efficiency

UV germicidal UV lamp power to its input power ratio.

3.8 UV dose ultraviolet dose (Dose)

Ultraviolet energy per unit area, obtained by multiplying the intensity of ultraviolet irradiation time, in units of mJ/cm².

3.9 UV dose - response curve of ultraviolet dose-response curve

UV dose and test organisms indicates loss curve relationship between the two levels of living. Inactivation level logarithmic inactivation rate I_g (N_0/N) or Number residual rate I_g (N/N_0) representation. N_0 is the concentration of microorganisms before UV irradiation, N is the concentration of microorganisms after ultraviolet irradiation. Test Methods See Appendix A.

3.10 Biometric dose biodosimetry dose

Also known as RED dose (reduction equivalent dose). Characterization of UV disinfection device under certain water conditions can be achieved UV dose, an ultraviolet lamp unit

doses each having a flow rate of representation.

3.11 UV transmittance of ultraviolet transmittance (UVT)

UV transmission percentage of a certain wavelength and intensity ultraviolet transmittance before UV intensity after a specific thickness of the dielectric. If not specified Medium thickness, the default is medium thickness 1cm. The ultraviolet transmittance of 254 nm wavelength is written as T254.

3.12 Quartz tube quartz sleeve

To suit the UV lamp, so that the UV lamp and the water separated from the quartz tube.

3.13 Low-voltage lights low pressure lamp

Working pressure of 0.13 Pa ~ 1.3 Pa mercury vapor lamp. Low-voltage lights input electric power per cm of arc length of approximately 0.5 W, output Main to single 254nm UV spectrum.

3.14 High-strength low-pressure lamps low pressure high output lamp

It refers to the input electric power per cm of arc length of approximately 1.5 W ~ 10 W low-pressure mercury vapor lamp. High-strength low-pressure amalgam lamp is mainly lamps (mercury steam Vapor from amalgam), the output is mainly 254 nm single-spectrum ultraviolet light, the unit arc output UV power greater than low pressure lamps.

3.15 Medium pressure lamps medium pressure lamp

Working pressure of 0.013 MPa ~ 1.3 MPa mercury vapor lamp. Medium pressure lamp input electric power per cm of arc length of approximately 50 W ~ 150 W, the output is a wide spectrum of ultraviolet and visible light.

3.16 UV lamp life operation life of ultraviolet lamp

Under normal conditions, UV light disinfection UV power drops to a certain value (low voltage 70% of rated power, low High-strength light pressure is 80% of rated power, medium pressure lamps is 70% of rated power) when the accumulated run time.

3.17 UV lamp aging factor lamp aging factor

UV germicidal UV lamp power and the new end of life when the UV lamp operation to the specified operating 100h after UV germicidal power of Ratio, expressed by CLH.