

Arab Water World

عالم المياه العربي



Ultrafiltration Occupies an Established Position
In Water Treatment

BIO-UV Water Treatment for Waste Water



BIO-UV, an innovative industrial SME, leading European manufacturer of ultraviolet light water treatment equipment designs, manufactures and markets systems and concepts of disinfection by ultraviolet light (UV-C) adapted to a large number of applications:

- Domestic and urban water purification,
- Treatment of waste water which is reused or not as the case may be,
- Disinfection of water from industrial processes and ultra-pure water,
- Purification of fresh or salt water in aquariums, aquaculture
- Treatment of legionella,
- Treatment of ballast water: BIO-SEA®
- Disinfection and dechloramination in private and collective swimming pools and spas,
- Production of drinking water in isolated areas using photovoltaic energy,

Since its creation in 2000, BIO-UV has equipped more than:

- 20 000 drinking water and waste water treatment systems
- 8 000 fish ponds
- 200 public aquariums

and works worldwide, in particular in the Middle East area. BIO-UV has developed sanitizers using the most advanced UV technologies for tertiary treatment by disinfecting municipal or industrial waste water. BIO-UV treatment makes it possible to protect the environment downstream of the discharge of treatment plants, particularly when there are bathing areas, white water activities, fishing and aquaculture activities nearby, and reuse the purified waste water for agricultural irrigation, spraying of green open spaces and golf courses, or for industrial processes (washing water etc.) BIO-UV proposes a low and medium pressure technology and various types of reactors in order to adapt to the aims of the treatment and to the installation and maintenance constraints. In certain cases, prior filtration (on a sand bed) may be necessary.

The UV treatment principle

At 254 nanometers, the optimum wavelength for destroying micro-organisms (viruses, bacteria, algae, yeasts, mould...), UV-C rays penetrate to the heart of DNA and disturb the metabolism of cells

until they are totally destroyed. All germs are thus deactivated (including Legionella and Cryptosporidium) and cannot reproduce. The reactors in the BIO-UV ranges are dimensioned according to the flow rate: it is the combination of the contact time in the reactor and the power of the lamp(s), that will ensure that the necessary dose (expressed in mill joules per square centimeter or mJ/cm²) sufficient to kill 99.9% of the micro-organisms (bacteria, viruses, algae in suspension,...) is received.

The UV waste water treatment benefits

- Continuous treatment and immediate effectiveness of the disinfection: the bacteria are destroyed in the reactor. There is therefore no need to provide contact times beyond the disinfection station
- No disinfection by-products are produced that could pollute the environment or restrict the reuse of the water (as in the case of chlorine or ozone)
- Simple technology, economic investment and operation, particularly compared to systems using membranes
- Automatic maintenance and cleaning of quartz sleeves, guaranteeing the efficiency of the BIO-UV equipment
- Continuous monitoring of the efficiency of the disinfection with remote management to meet operating requirements
- Possibility of lamp power regulation in order to save energy. ■



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