

WEDECO UV Technology – High-Tech for Healthy Water

The deployment of chlorine, chlorine dioxide, oxychloride and other chemical substances to disinfect liquids can result in effects which are detrimental to health and the environment. This has been scientifically demonstrated. UV technology is the better alternative to chlorine disinfection. The intensive research and technologically mature disinfection method with ultraviolet light is adapted from the natural action of sunlight. UV light can be deployed in a versatile fashion. It is suitable for disinfecting water, for destroying harmful microorganisms in other liquids, on surfaces and in air.

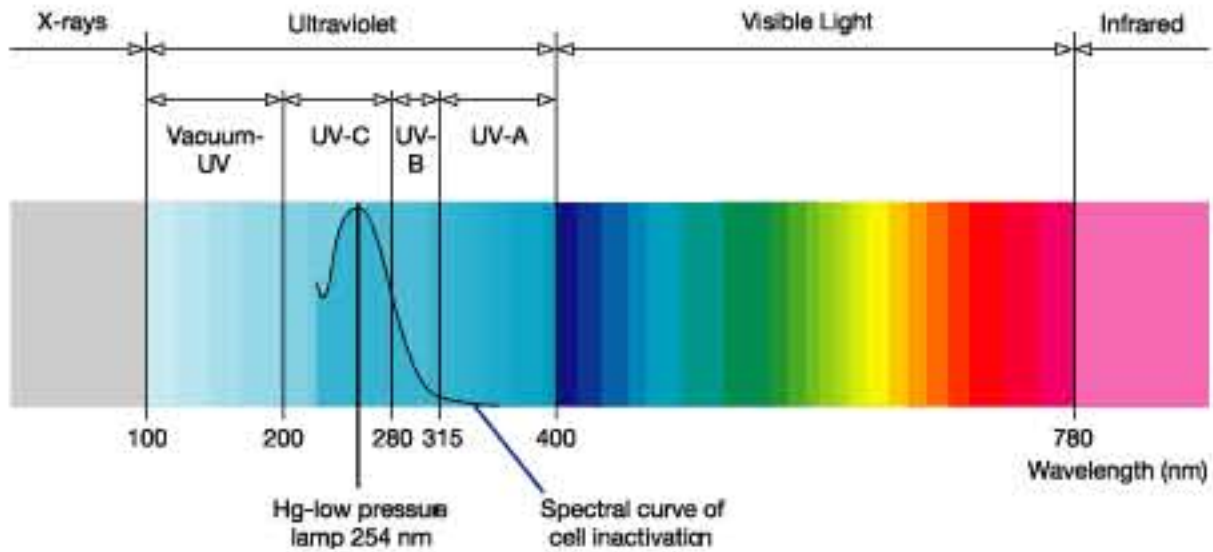


ultraviolet light is adapted from the natural action of sunlight

Using the Sun as Our Example

Today, after many years of research, we recognize that the most effective alternative water disinfection process available is ultraviolet light (UV). UV disinfection mimics the sun's natural behavior: that is, ultraviolet energy destroys the ability of dangerous microorganisms to multiply, rendering them harmless to humans and the environment.

Ultraviolet light is a natural component of the electromagnetic spectrum. It falls to the left of visible light with higher energy levels and wavelengths between 100 and 400 nm. One of the most effective wavelengths and the one most often used for disinfection is at 254 nm.



From the principle...

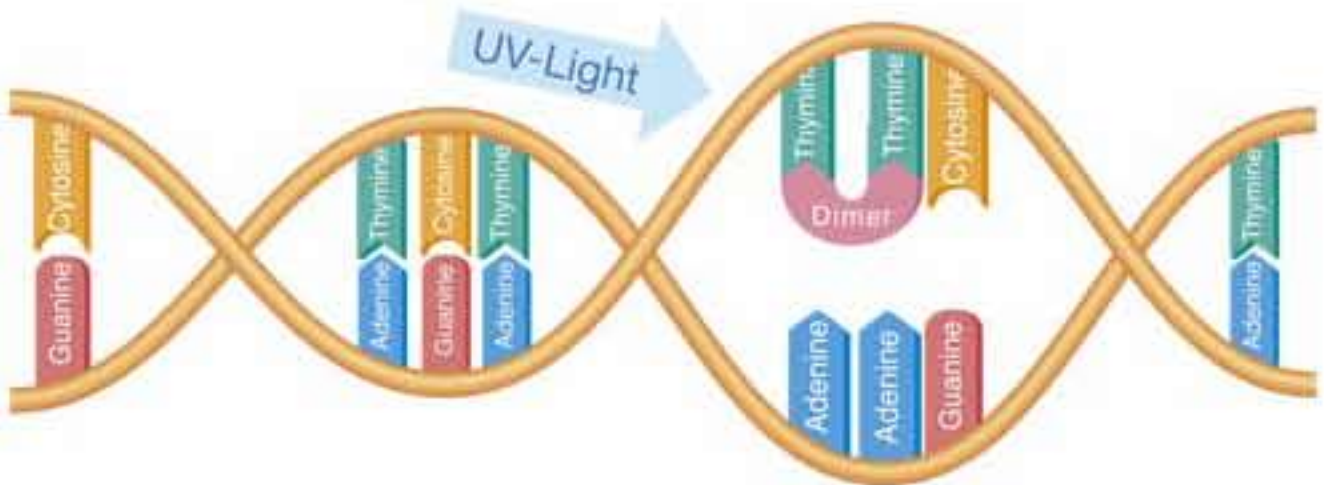
The light necessary for UV disinfection is generated in special UV lamps. A watertight quartz tube surrounds each lamp. The liquid to be disinfected is passed through the quartz tubing. The gas plasma generated in the lamp emits light with a primary wave length of 253.7 nm. This intensive UV light reaches the microorganisms in the water and impacts directly on their DNA.

By changing the DNA the cell division of the microorganism is interrupted – it can no longer reproduce itself and thus loses its pathogenic effect. With WEDECO technology it is possible to destroy more than 99.99% of all pathogens in water, without the addition of chemicals, without harmful side effects, inexpensively, highly efficiently and absolutely reliably.



Legionella pneumophila – The bacteria extremely to chlorine is reliably destroyed in drinking water using WEDECO UV technology

Deactivation of harmful micro-organisms



Ultraviolet light destroys microorganisms by changing their genetic information or DNA

... to the WEDECO system

The core elements of the WEDECO UV systems are very high performance UV lamps developed in house. Their impact is increased by electronic control devices specially coordinated to the lamps. In each system, calibrated sensors monitor and log all material factors for the disinfection process.

Moreover, additional functions such as UV dosage display, automatic cleaning and remote monitoring of all process functions via telemetry and the internet can be integrated. For optimum efficiency, specific computer-based radiation geometries have been developed.



Physical instead of chemical disinfection

UV disinfection is a purely physical process. Micro-organisms such as bacteria, viruses, yeasts, etc. that are exposed to the effective UVC radiation are inactivated within seconds.

The advantages are ...

- no chemicals added
- no environmental problems
- the water retains its natural flavour and smell
- no by-products that might endanger health
- no corrosion problems
- no reaction tanks or secondary pumps
- micro-organisms inactivated within seconds
- a technology tried and tested in thousands of installations
- the process requires little maintenance and is easy to handle
- minimum operating costs
- maximum operating safety
- modular system for adaptability

Criteria for the appropriate design of a UV system

- Field of application, which determines the bacteriological requirements
- Maximum capacity in l/sec UV transmission at the 254 nm wavelength, related to a defined layer thickness
- Pressure and temperature conditions