

Ultraviolet Technology

UV Disinfection in Brewing

How Does Ultraviolet Work?

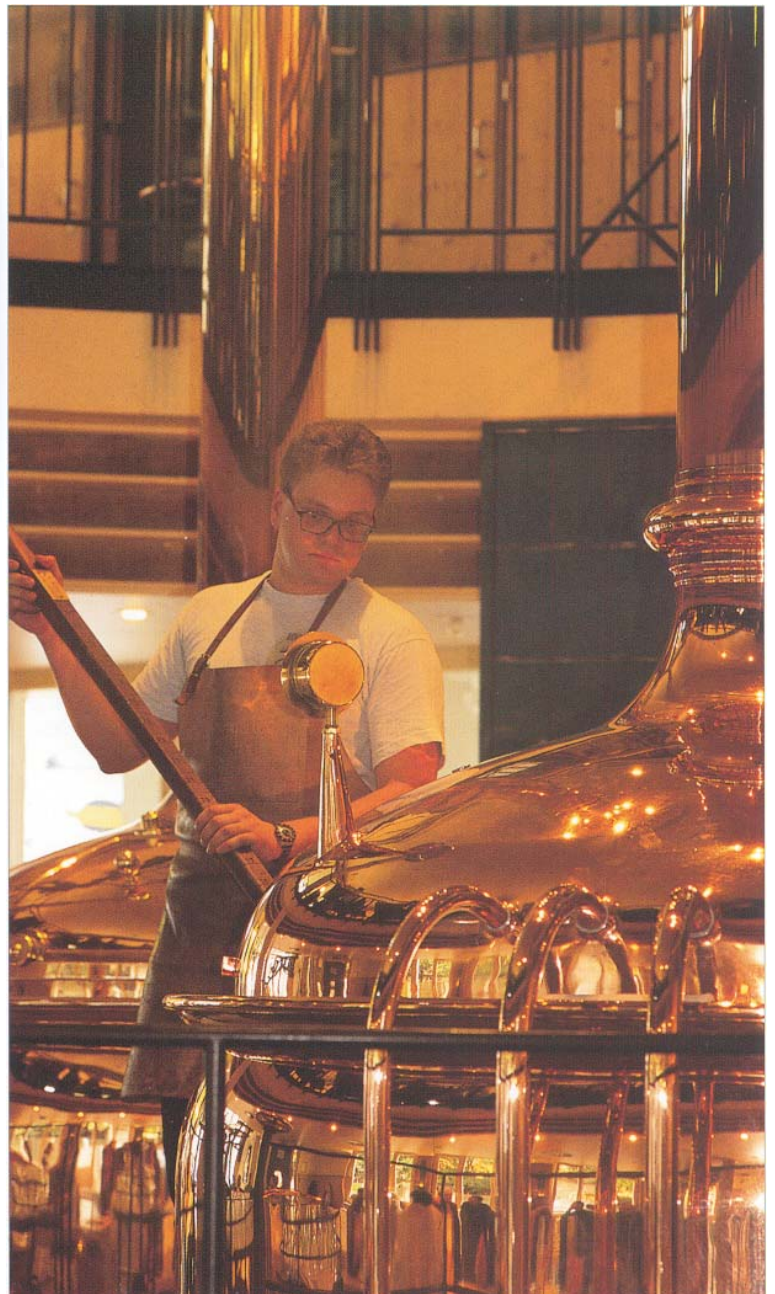
Ultraviolet light causes permanent inactivation of micro-organisms by disrupting DNA. It is effective against all bacteria and fungi, as well as spores and viruses, which are normally present in the air. The maximum effectiveness occurs between 240 and 280 nm and the Hanovia high-intensity Arc Tube produces these wavelengths in abundance.

The Role of UV in Brewing

Water is one of the raw ingredients that gives each beer its distinctive taste.

UV disinfection systems safeguard the water used in breweries from the risk of water-borne biological contamination. UV disinfects the water and is effective against all water-borne micro-organisms such as bacteria, yeasts, moulds and algae.

Other applications for UV in the breweries include the treatment of caps and cans and the disinfection of air in packaging areas.



Why Do Leading Brewers Choose UV Treatment?

Brewers world-wide trust UV to protect their product from contamination and so enhance quality, stability and shelf life. It is far superior to more traditional methods :-

- ▶ No beer spoilage organisms survive UV treatment
- ▶ UV is the most cost effective method of water disinfection
- ▶ UV has no effect on pH, colour, flavour or aroma
- ▶ UV has no detrimental effect on beer stability
- ▶ UV leaves no residue
- ▶ No hazardous or toxic chemicals are produced
- ▶ Permanent accurate treatment records are available

Applications

Water

Town's water should be free from micro-organisms. However, well water may be contaminated and town's water can pick up infection in storage and in the brewery. Use UV for:

- ▶ Disinfection of incoming water from mains or borehole
- ▶ Disinfection of filter, RO or resin bed product water
- ▶ Final CIP rinse water - leaving no taint
- ▶ Water used for yeast propagation and preparation
- ▶ Liquor used to chase beer in pipework
- ▶ Additive and brewing aid make-up water
- ▶ Pasteuriser recycle water

Packaging Plant

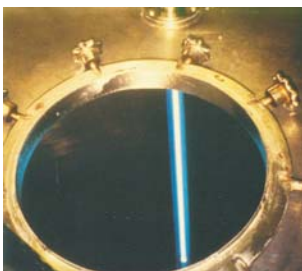
- ▶ Surface disinfection of caps, cans and bottle necks
- ▶ Water for jetting
- ▶ Water for rinsing out cleaning fluids



Hanovia Photon Disinfection System

Air Disinfection

- ▶ Disinfection of head space in water storage tanks
- ▶ Disinfection of air entering plants
- ▶ Disinfection of air supply to yeast preparation area



Hanovia UV-I System

Hanovia UV Systems

Compact and Easy to install

- ▶ Hanovia UV systems conveniently fit into existing pipework in most process areas
- ▶ Minimum site preparation
- ▶ Pre-assembled units available pre-wired and skid mounted, requiring only connection to electrical supply
- ▶ Silent operation
- ▶ Can interface with most computer controlled continuous and batch processes

Inexpensive and Simple to Maintain

- ▶ Simple and safe operation easily understood by operators
- ▶ Designed for remote operation
- ▶ Replacement of Arc Tubes is quick and simple

Rigorous Quality Control ISO 9001

- ▶ All Hanovia stainless steel chambers and Arc Tubes built to the highest possible standards
- ▶ Every Arc Tube is individually checked and each completed system tested and run before despatch
- ▶ Test certificates always supplied

All Hanovia Liquor Disinfection Systems Include:

- ▶ Disinfection Chamber
- ▶ Arc Tube
- ▶ Control / Power Supply Cabinet
- ▶ UV Monitor
- ▶ Automatic Cleaning Mechanism (optional)

Why is Hanovia the Leading UV Supplier?

- ▶ Hanovia has pioneered the use of UV in various applications for over 75 years
- ▶ Hanovia manufactures its own stainless steel chambers, quartz sleeves and arc tubes to the highest possible standards
- ▶ Hanovia is the only system manufacturer which also makes Arc Tubes
- ▶ Hanovia has a world-wide network of distributors who stock a complete range of spares





UV Dose for the Brewery

The UV dose required for the application should be decided in conjunction with a Hanovia specialist, who will also advise on installation.

Hanovia

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