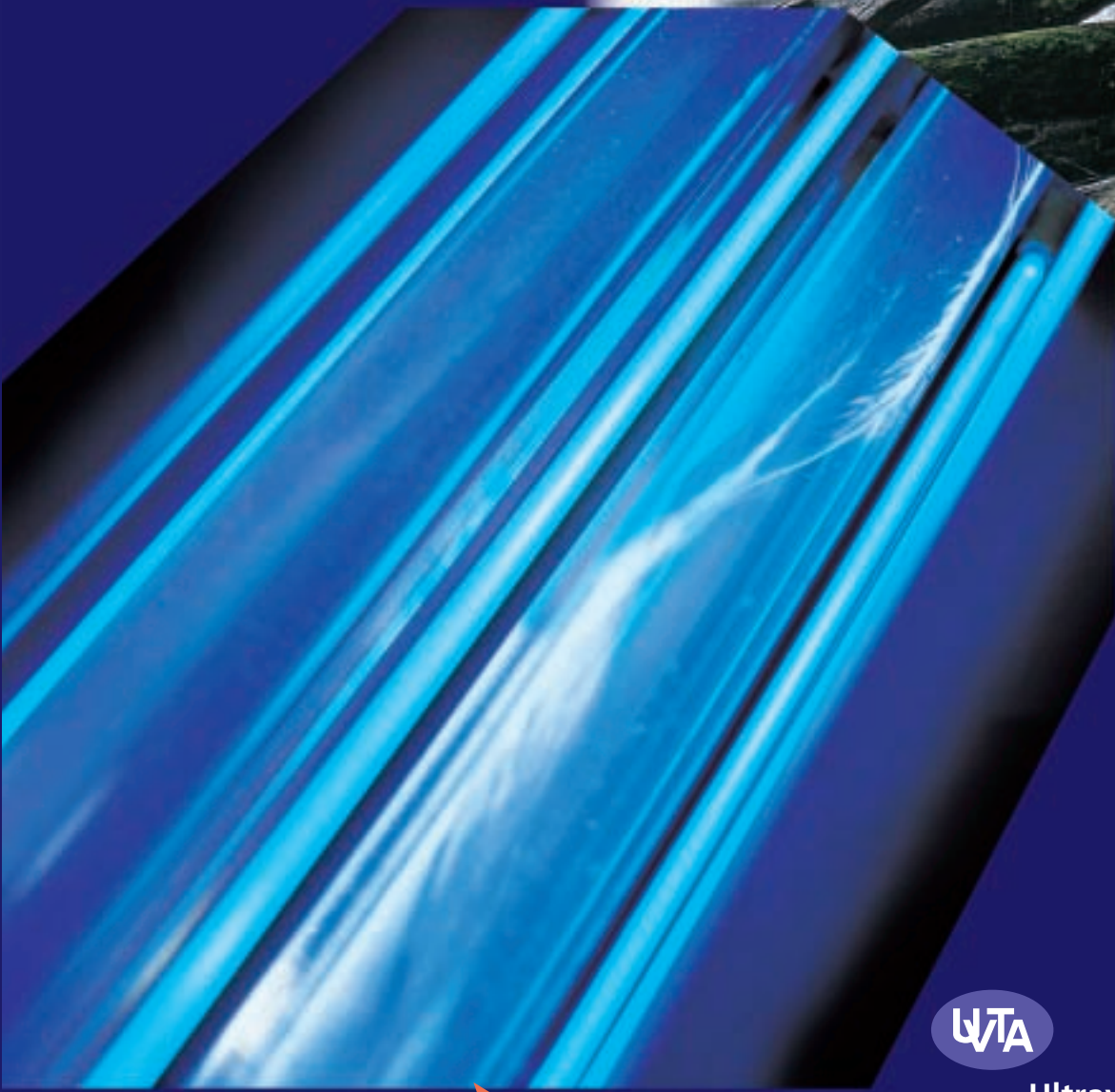
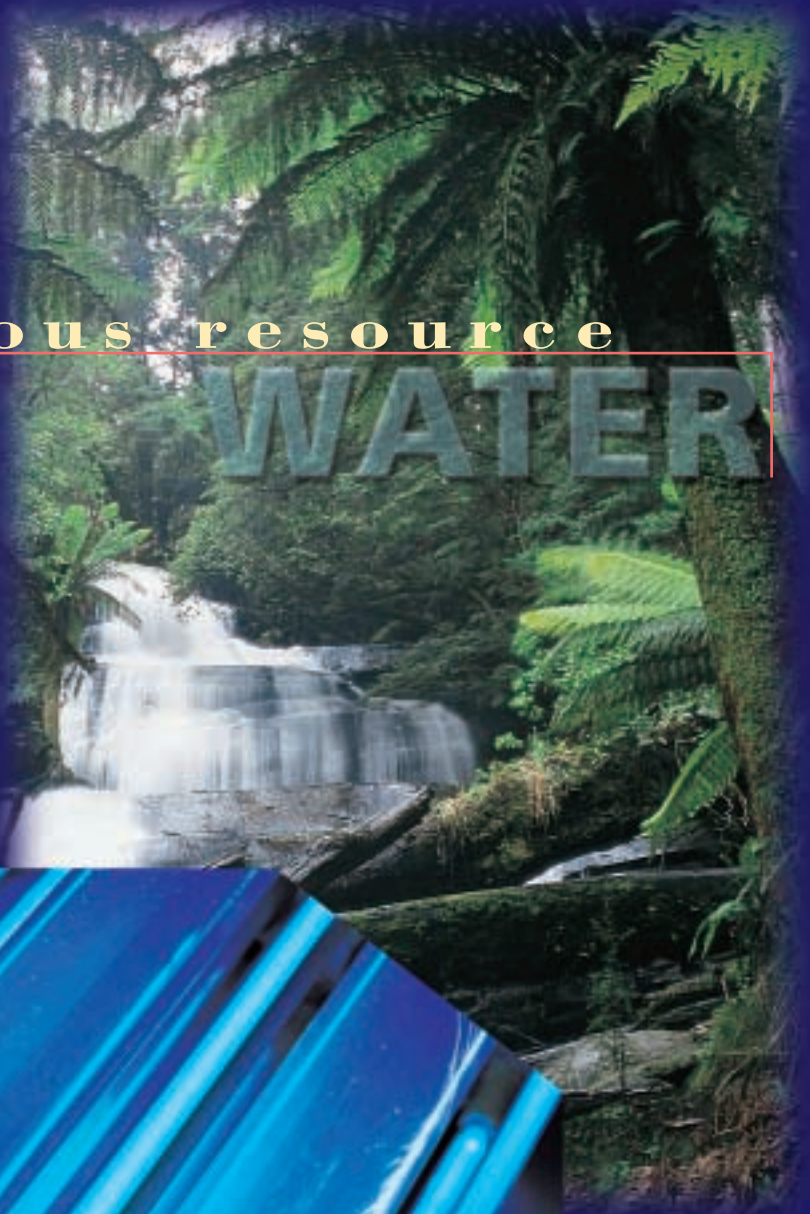


a precious resource

WATER



UVTA  
leaders in  
ultraviolet  
disinfection  
systems



**Ultraviolet Technology  
of Australasia Pty Ltd**

*photo shows turbulent water flowing through  
Advanced Fluoropolymer tubes - UV lamps located on outside*



# Ultraviolet Technology of Australasia

UVTA's mission is to manufacture, supply and service a range of water disinfection and treatment equipment, to help improve the overall quality of human water supplies world-wide.

UVTA, based in South Australia, is a leader in ultraviolet technology, development and design which utilises AFP for disinfection of secondary treatment effluent systems and potable water applications.

Since 1981 UVTA has been supplying water purification systems to a broad range of industries in Australia and throughout the world. Most Australian Embassies use UVTA disinfection systems to ensure high quality water.

UVTA is committed to the delivery of the highest standard of manufacture and service.

The UVTA technology is designed using a unique internal flow Advanced Fluoropolymer (AFP) - tube configuration. The effluent flows through the inside of parallel lengths of robust AFP tubing. The mercury vapour (UV) lamps are located on the outside of the AFP tubing. AFP tubing is a non-breakable and fouling-resistant material which therefore allows uniform and optimum UV dosages with low maintenance requirements.



When AFP tubing and ultraviolet light are brought together in one system then a very efficient, simple but extremely effective disinfection unit is the result.

The ultraviolet rays (UV), in a concentrated dose, can destroy a vast range of micro-organisms. Ultraviolet light at the wavelength of 253.7 nanometres, works as a powerful germicide and alters the genetic materials in cells so that bacteria, viruses, algae and other micro-organisms can no longer reproduce.

UVTA water disinfection and treatment systems can effectively destroy bacteria, viruses and other micro-organisms in water and wastewater, without using chemicals.

Ultraviolet disinfection can greatly reduce capital and operating costs, as UV treatment eliminates the need for large chlorine contact tanks designed to hold peak flows.

The AFP system can accommodate a wide variety of flow rates for a range of disinfection applications.

UVTA disinfection units are recognised for their ease of operation, reliability and low maintenance.

Every UVTA disinfection system emits in excess of 30,000 microwatt-second per cm<sup>2</sup> of UV light, almost double the recommended dosage of the USA Public Health Service.

# The UVTA Advantage

The UVTA UV system is vastly superior to

- Chlorination Systems (poisonous)
- Quartz Sleeve UV Light Systems :

The alternative technology to UVTA uses external flow quartz-tube design. The water flows outside bundles or racks of mercury vapour lamps contained inside fragile quartz sleeves. These quartz sleeves will foul and break easily.

Internal flow UV AFP technology has significant advantages over external flow quartz-flow designs:



*photo shows UV light blocked by fouling on one half of the quartz sleeve (A typical problem)*

## UVTA™ UV Technology Advantage

Non use of fragile quartz sleeves.

UV chamber consists of non-wettable, virtually non-fouling AFP\*.

In situ UVTA™ “Autoklyn™”, non-chemical, non-scraping system. Autoklyn is available only in larger units.

Control of UV lamp temperature.

Low maintenance.

Ease of operations.

No short-circuiting.

No critical effluent levels.

Static flow will not damage the UV lamps.

Low electrical power consumption.

Use of high intensity “XUV”, low pressure, UV Mercury Vapour Lamps operating 48°C to 55°C.

Lowest time period to change a UV lamp (less than 1 minute) and is uncomplicated - the lamp is low cost.

No solarizing of AFP tube in UVTA™ UV chamber.

Guaranteed kill rates with lower UV dosages due to effective design.

Proudly Australian designed and built.

## Alternative UV Technology Disadvantage

Use fragile quartz sleeve.

UV chamber uses quartz, which is negatively charged and very susceptible to fouling.

Use of quartz means corrosive acids and scraping devices.

No control of critical UV lamp temperature.

High maintenance.

Complex operations.

Short-circuiting will occur.

Level of effluent in the channel is critical.

Severe damage will occur if effluent flow slows or stops whilst UV lamps still alight.

High power consumption.

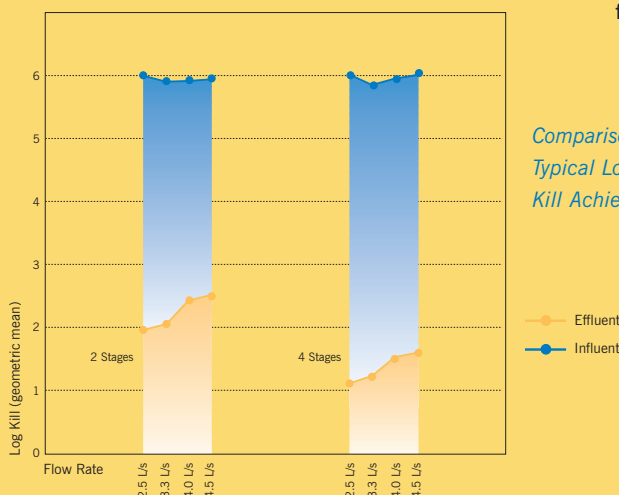
Use of expensive medium pressure UV Lamps operating > 400°C.

Labour intensive and expensive.

Quartz nm within the wavelength UV chamber is solarized by the UV light at 253.7 nm wavelength, thereby causing the quartz sleeve to become opaque and require replacement periodically.

Requires consistent UV overdosing to try and provide UV dose required.

Most of the other UV systems for effluent and water disinfection are foreign imports.



*Comparison of Typical Log Kill Achieved*

Effluent  
Influent



## Wastewater

### Disinfection

UVTA is committed to setting industry standards for excellence in product water and wastewater disinfection systems and in contributing to a cleaner, safer environment for present and future generations.

UVTA has the ideal solution for safe and effective wastewater treatment. Many industries and municipalities have successfully implemented AFP UV disinfection systems as a more reliable and cost-effective alternative to traditional chlorination-dechlorination processes or high-maintenance quartz sleeve UV systems. The UV process eliminates the need for chemicals and their attendant hazards such as transportation, handling and storage.

The UV AFP system does not require constant monitoring or maintenance to ensure correct levels of disinfection are attained, resulting in much lower running costs. Most importantly, UV AFP treated wastewater can be released directly into receiving waters.

#### UVTA TREATED WASTEWATER - TERMINATOR™ TECHNOLOGY

For UV light to be effective it is important that there is as little wastage of emitted lamp energy as practicably possible. The unique design specifications of the Terminator™ unit keep this wastage to a minimum.

The technology employed in the Terminator™ unit involves the flow of water/wastewater through an array of AFP tubes. The UV lamps are situated around the AFP tubes which are transparent to UV germicidal light.

The advantages of the Terminator™ are:

- Maximum contact time between micro-organisms and UV light is assured by incorporation of Turbulators™ in the AFP tubes. These insure complete irradiation of system influent
- Lamp operation is not affected by temperature - lamps are air-cooled
- Easy maintenance - lamp replacement is straightforward (no fragile quartz sleeves) and AFP can be easily cleaned with a high pressure water cleaning system (larger "in channel" UVTA effluent disinfection systems can offer, as an option the UVTA Fully Automatic AUTOKLYN™ cleaning system).

No Scraping, No Acid required

The lamps are arranged in vertical rows and attached to a common rack. An operator can remove each rack from above through access doors on top of each disinfection unit with the disconnection of a single bayonet plug. Lamp replacement can take place while the unit remains in service; only the stage from which lamps are to be replaced needs to be deactivated.



*UVTA Systems specifically planned and custom built to meet our customer requirements*

# AFP Tube Ultraviolet Disinfection

## - the natural alternative

### THE UVTA CLEANING SYSTEM - THE MOST EFFICIENT AND ENVIRONMENTALLY SAFE

Turbulent water flowing through the AFP tubes ensures optimum UV dosage and also provides a continuous self-cleaning action. Although AFP tubes are not fouled by substances present in water under normal operating conditions. If it should occur, they can be easily cleaned with clear water flush or recirculating a mild acid solution e.g. citric acid - no toxic chemicals needed.

The UVTA Autoklyn™ cleaning system has been specifically designed for large wastewater units. When cleaning is required a high-pressure (10,000 kPa approx.) cleaning nozzle on the end of a flexible hose is automatically inserted through the faceplate into the AFP tubes. This exposes the tube surfaces to a high velocity turbulent fluid that removes any fouling materials. The cleaning system which is self feeding within the AFP tubes, does not require chemicals and is highly effective in returning the condition of the tubes to near new.

### THE FULL RANGE OF WATER DISINFECTION SYSTEMS AND PRODUCTS

#### WARM WATER LOOPS (NSW Health Department Approval No. PDA 088)

For ablutions - The UVTA Warm Water Loop ultraviolet disinfection system effectively controls bacteria, viruses and destroys Legionella pneumophila.

#### COOLING TOWERS (NSW Health Department Approval No. PDA 001)

Cooling towers are the most widely used method of dissipating waste heat from industrial and commercial processes. Micro-organism growth is profuse in cooling towers. The UVTA system effectively controls bacteria and destroys Legionella pneumophila.

#### DRINKING WATER

Municipalities around the world, including many developing nations, have implemented multi-pass UVTA AFP UV disinfection systems to provide high quality drinking water supplies.

'Drinksafe'™, a drinking water dispenser unit, is another UVTA high quality product.

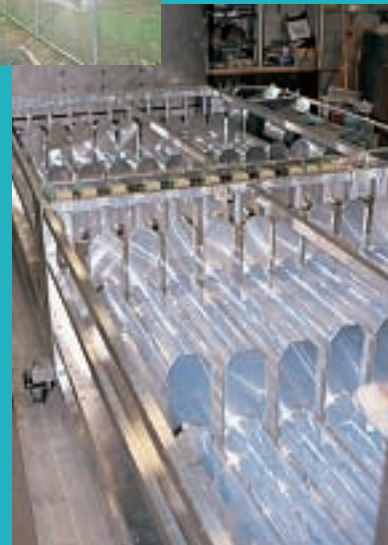
With 'Drinksafe'™ you are assured of safe, healthy drinking water. This product has been tested by the South Australian Institute of Medical and Veterinary Science, a NATA registered laboratory.

#### SWIMMING POOLS, SPAS AND HYDROTHERAPY POOLS

The skin irritation and obnoxious smell and corrosion associated with chlorination can be eliminated by a combination of hydrogen peroxide and UV light disinfection.

AFP UV/Hydrogen peroxide, the natural alternative, disinfects pools and spas through a simple easily maintained, two-fold process. First, a minimum 40ppm residual of hydrogen peroxide is maintained. Second process, filtered water flows through the AFP tube UV unit exposing any bacteria and virus to the germicidal wavelength UV light emitted from the lamps.

*NOTE "UVTA UV systems can also work with chlorine if desired"*



PLACES WHERE UVTA & IWT WASTE WATER UV UNITS HAVE BEEN INSTALLED

Castlemaine, Vic

Moyne Shire Council, Port Fairy, Vic

Port Pirie District Council, Napperby, SA

Yankalilla, SA

Lake St. Clair, Cynthia Bay WWTP, Tas

Roseworthy, SA

Byron Shire Council, Ocean Shores, NSW

Walleroo City Council, SA

BHP, Port Headland, WA

Mount Saint John, Townsville City Council, Qld

Delta Charter Township, Lansing, USA

WA Water Authority, Pemberton, WA

Veterans Administration, Togas, USA

Murwillumbah Tweed Shire Council, NSW

Ballina Shire Council, Wardell, Ballina, NSW

Kings Lynn STW, Norfolk, England

Mundaring WWTP, Mundaring, WA

Southend, England

Tumbulgum Tweed Shire Council NSW

New Haven Village, SA

Dunedin City Council, South Island, NZ

Sydney Water Board, Cronulla STP, NSW

P&O Resorts, Cradle Mountain, Tas

Elkins Wastewater Plant, Elkins, USA

National Parks & Wildlife, Kosciusko, NSW

Federal Airport Commission, Hobart, Tas



ISO/AS 9002 Lic 2792  
Standards Australia



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