

Astell^{Bio} liquid waste autoclaves

supporting aquatic research
without contaminating
aquatic environments



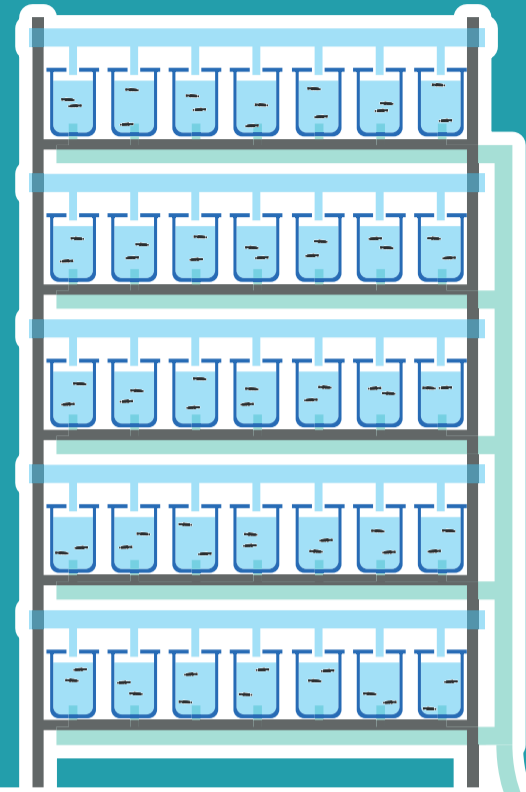
thermal wastewater decontamination



Wastewater decontamination in Containment

Containment Level 2 & 3 Aquatics Facilities

When working with hazard group 2 pathogens or class 2 genetically modified organisms (GMOs), containment within a level 2 facility is required. Higher hazard groups and classes require a higher containment level facility.



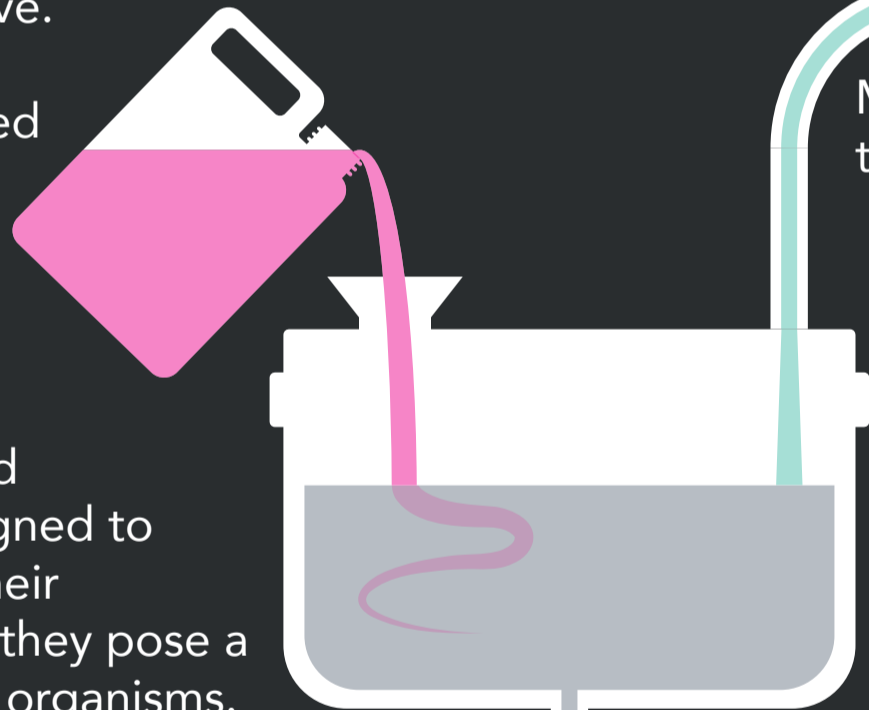
Chemical Decontamination

Chemical decontamination is often used. It is cheap and effective.





Wastewater is collected in a holding tank and mixed with chemical disinfectants or sterilants.

Chemical sterilants and disinfectants are designed to destroy organisms. Their effectiveness ensures they pose a risk to their users and organisms.

To assure validation, an excess of disinfectant must be used, and the liquid waste should be held for a period of time until decontamination has occurred.



Most chemical sterilants are hazardous to their operators. Risks include:

-  Aspiration Hazard
-  Corrosion
-  Poisoning
-  Carcinogen Hazard

Chemical sterilants are often highly reactive, requiring specialist storage and handling. Risks include:

-  Explosion
-  Oxidation

Periodically, wastewater from sewer systems enters waterways. If even low levels of chemical disinfectant remains in the wastewater, it can be toxic to plant and animal life.

-  Environmental Hazard

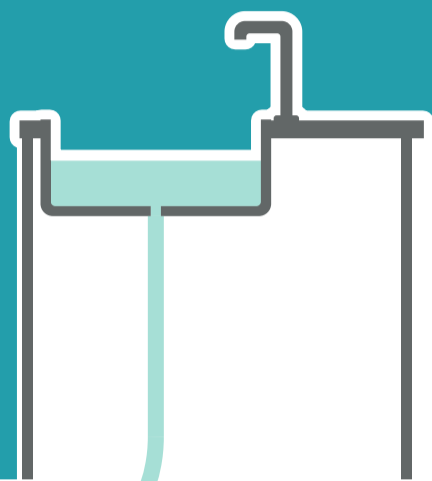




Before it leaves the Containment Level 2 facility, any liquid that has had opportunity to become contaminated with hazard group 2 pathogens or class 2 GMOs must be decontaminated.

For aquatics facilities this means wastewater from fish tanks and dirty zone sinks must be sterilized or decontaminated.

There are multiple methods of sterilising wastewater. Chemical and thermal are two common methods.



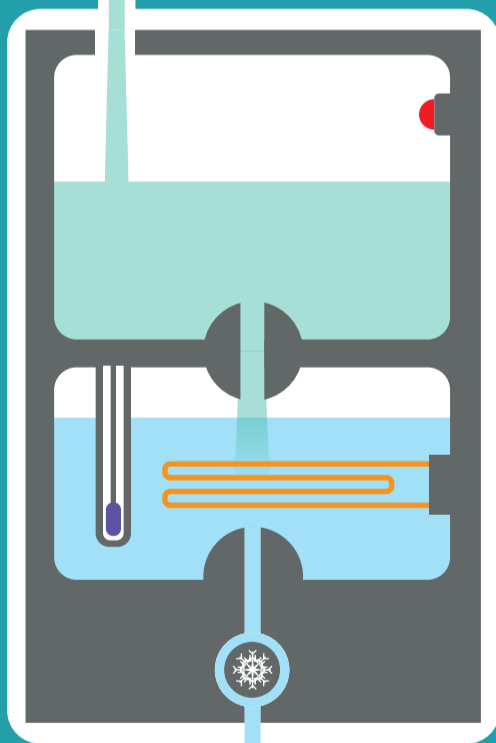
AstellBio Micro EDS

The AstellBio Micro EDS uses only electrically-generated heat to sterilize wastewater. Capable of operating to containment level 2 and 3 standards, it adds nothing to the wastewater and functions automatically.

Liquid waste collects in a 25L holding tank

A biowell allows any sterilisation to be biologically validated using spore bioindicator capsules

A drain cooler ensures sterile waste leaving the AstellBio Micro is at a temperature lower than 60°C

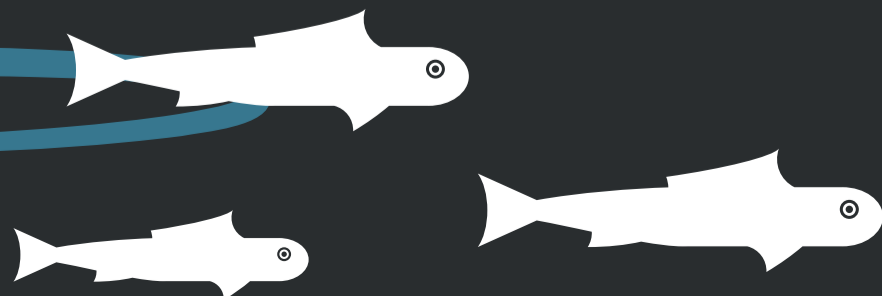


A sensor sends an alert if the holding tank is full

A self-cleaning ball valve automatically allows 9L at a time into the sterilisation tank

A heating element raises the temperature of liquid waste under pressure to 132°C, sterilising it.

As thermal wastewater treatment does not add chemicals to the water, it is no more hazardous after treatment than before.



meet the Astell^{Bio} sink range



Astell^{Bio} sink

The AstellBio sink is an autoclave designed for sterilising liquid waste. Compared with chemical sterilisation methods, it provides a safer, cleaner, and more validatable method of sterilising biologically hazardous liquids, up to and including containment level 3 / biosafety level 3. Each model in the stellBio Sink range can sterilize 9 Litres of wastewater every 45 mins, more than 280 Litres a day.



Astell^{Bio} micro EDS (effluent decontamination system)

The AstellBio Micro EDS (effluent decontamination system) is a versatile unit that can be plumbed into a variety of wastewater-producing equipment, ensuring effluent is sterile before it reaches the sewer.



email Sales@AstellBio.com or visit AstellBio.com to find out more