



WHAT IS YOUR LOAD TYPE?

What is a 'mixed discard' load?

A mixed discard load is typically made up of contaminated material of different types and forms that needs to be safely sterilized before disposal. For example, all microbiological laboratory waste should be processed prior to disposal, as must all clinical samples, e.g. blood, tissue samples etc.

Laboratory waste discard loads can consist of a mixture of any of the following items: Plastic bags, containers, fabrics, gloves, paper towels, pipettes, culture plates etc.

Due to the complexity of mixed discard loads, it is very important the autoclave chamber is not over filled as this can prevent effective steam penetration. We recommend multi-point (12 Pen) validation is performed to ensure repeatable, effective sterilization of all items.

Astell can also offer Category III (BSL-3) compliance options for autoclaves dealing with high risk waste sterilization requirements in addition to HEPA filtration and vacuum.

FAQs

Is tap water suitable for supply to an autoclave Steam Generator?

We have supplied a large number of autoclaves with steam generators running on tap water, softened if necessary. Steam generator failure can be accelerated by hard water. We have not encountered any problems with water quality <50ppm TDS. Our autoclaves are designed to work with good quality potable water supplies thereby avoiding the expense of using treated water. We also recommend frequent blow-down of the steam generator as part of the housekeeping routine.

THE CHALLENGES

Challenges of mixed discard loads

Loads consisting of such a wide variety of materials in a broad range of containers will present specific sterilization problems. One of the main problems with such mixed discard loads is that they invariably contain small pockets of trapped air, which present particular air removal problems before steam penetration. Such loads are often contained in special plastic bags and comprise a variety of plastic containers; these are liable to melt and collapse before sterilization, thus increasing the likelihood of trapped air.

An advanced vacuum system is therefore recommended to assist with air removal. It is recommended that discard loads are sterilized in special discard containers to eliminate spills and keep the chamber surfaces free from debris.

Recommended options

- **Load Sensed Process Timing** – allows the sterilization cycle to be controlled via the temperature achieved in the centre of the load. This is identified by locating a wandering probe in to a media bottle or reference item during the sterilization cycle.
- **Advanced Vacuum (AVC001)** – Suitable for all units with an integral steam generator (or external steam supply), the AVC001 vacuum option is Astell's most advanced method of air removal. As well as being ideal for 'difficult' discard loads, this type of 'pulsed' vacuum is suitable for sterilizing porous loads and other materials typically found in dental and medical applications where air pockets could easily form.
- **Integral Steam Generator** – The integral steam generator option removes the heating elements from the chamber and replaces them with an integral generator for improved control over steam production.
- **Multi-Point (12 Pen) Validation** – carried out to UKAS Standards (ISO 17025:2005) by our fully trained engineers.



CHOOSING AN AUTOCLAVE BY LOAD TYPE

LABORATORY WASTE

Mixed discard



ASTELL RECOMMENDED PRODUCTS*



Top Loading Range

95 – 135 litres

- Vertical chamber with gas strut assisted door and fast-action locking mechanism
- Size optimised baskets and discard containers ensuring maximum chamber usage. Optional integral hoist for heavy loads
- Compact design with castors for easy movement
- Full range of options comparable with much larger machines

Front Loading Range

120 – 344 litres

- Horizontal chamber provides easy loading access
- 5 standard chamber sizes up to 344 litres in capacity
- All units feature Astell's 'Swiftlock' secure door closure system
- Optional shelves and discard containers provide chamber loading flexibility

SQUARE Range

125 – 735+ litres

- A choice of 7 standard chamber sizes and either a manual or automatic door
- Integral Steam Generator fitted as standard
- Fully customizable design built to customer requirements
- Ideal for high throughput laboratories

*Please note these are suggested model ranges. Other products and options are available. Please contact us for a personal recommendation, providing a description of the load type(s).

Product highlights

All Astell autoclaves have the following features:

'Heaters in chamber' models have 'media holdwarm', a feature that uses the heaters to hold sterilized media at a set temperature until it is to be used.

Autoclaves are manufactured to the principles of the Medical Devices Directive and in accordance with Pressure Equipment Directive (PED 2014/68/EU) and ISO 9001:2015 quality standards.

5.7" colour touchscreen controller with USB connectivity; allows users to edit cycle parameters, store and recover historic cycle data, add security levels with user passwords and more.

316L-grade stainless steel pressure vessels with electro-polished finish.

LSPT probe features 316L stainless steel conduit to protect the probe whilst inside the autoclave, and during unloading/unloading.

Industry-standard safety features to ensure the well-being of both the sterilizer and its operators; including external pressure gauge, over pressure and over temperature protection, a safety-linked door mechanism and thermally insulated doors.

Optional stainless steel pipework and panel work if required.

Optional controller software that meets the guidelines of FDA 21 CFR Part 11 Electronic Records; Electronic Signature final rule legislation.

When asking for a quotation...

Remember to answer these four questions when asking for a quotation.

- What size of autoclave do you need?
- What items will you (or your customer) be sterilizing?
- Does the load need to be dry at the end of the cycle?
- How many cycles do you wish to run per day?



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