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Julie's Tech Guide on

Should You Use an AUTOCLAVE or a PRESSURE COOKER for Sterilisation?

What is sterilisation?

Sterilisation is the complete removal or elimination of microbes. The most common method used in schools is moist heat, saturated steam under pressure by using an autoclave or pressure cooker. There are four parameters that are important when sterilising products:
Steam, pressure, temperature, and time

Water boils at 100oC and produces steam. The steam needs to be at a pressure of 15psi to reach 121oC and 20psi to reach 126oC and needs to reach these temperatures before timing commences.

Autoclave vs. Pressure Cooker

While pressure cookers are a lot less expensive, they are NOT manufactured to sterilise products in a laboratory environment, they are intended for food. While certain models will reach the required temperatures for sterilisation, the manufacturer will not cover any warranty or safety issues whilst the cooker is being used within a laboratory set up.

If used, a pressure cooker requires a stable heat source and pressure indicator to ensure the correct temperature is reached to sterilize products. They should not be left unattended while in use.

Autoclaves undergo vigorous quality control management and safety procedures during manufacture and are tested to several standards for performance. Small laboratory ones are portable and have an automatic cycle so can be set and left unattended. They also have built in safety features to prevent the lid being opened until the temperature has dropped below 80oC.



For an autoclave to be effective it must reach and maintain a certain temperature for a given number of minutes to achieve successful sterilisation. This is usually 121oC for 15 minutes or 126oC for 10 minutes.

It should be noted that when sterilising bacterial media, you should always follow the CLEAPSS recommendations which is generally 121oC for 15 minutes.

Overheating media may result in denaturing or a reduction in pH, under heating will not achieve sterilisation.