Präzisions-Glasinstrumente und Geräte für Arzt und Labor

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Sterilisation and autoclaving of glass devices

To sterilise is the hypernym for what is supposed to be reached – that is to make a medium sterile.
This can take place in different manners, e.g. in a **steriliser** with hot air, in a **chemical** way or moistly in the **autoclave** with overpressure between 2 and 3 mbar.

Autoclaving is often preferred because working with a very high temperature is not necessary (ca. +130 °C/+266 °F).
The sterilisation effect is being reached in connection with **heat** and **overpressure**.
Damages during a**utoclaving** can have several reasons:

1. Not enough water in the autoclave, water vaporises and heat goes beyond the given temperature. The possibly too high temperature in connection with the overpressure can lead to a damage of the glass parts.
2. The autoclave is needed again relatively fast. The device is not being cooled down properly, the pressure is not being lightened slowly enough – damages of glass parts are for sure (fast expansion).
   Correct procedure:
   Shut down the device after ending the autoclaving process, leave to cool down, slowly lighten the overpressure.
   In this way normally nothing should happen.
3. In the glass containers e.g. instruments or the like are being autoclaved at the same time.
   Here one must consider that both different materials have a totally different heat conductivity and one must definitely go about it carefully as described in no. 2 (shut down – leave to cool down – lighten pressure).

Sterilising in the **steriliser** (with hot air) is another possibility to make the medium sterile.
Normally with hot air an automatically higher temperature (ca. + 180 °C/+ 356 °F and more) will be reached than with the autoclave.
This method is more compatible for glass devices, but not always usable.
If e.g., like mentioned before, instruments are supposed to be sterilised in the glass bowl at the same time, these instruments are generally being placed on a cellulose sheet or the like so that the metal does not get directly into contact with the glass. These cellulose sheets are mostly not resistant to such high temperatures like + 180 °C/+ 356 °F and more and therefore one rather uses the method of autoclaving.
Of course also with hot air sterilisation the rule of slowly heating and cooling down the vessels applies. Never expose glass jars to a thermal shock.
Chemical sterilisation is hardly spread because residues of chemicals can influence samples.
A conspecies of the chemical sterilisation is e.g. the **disinfection** (detergent with disinfecting effect).
Application e.g. surface disinfection of floors, work desks etc. in hospitals.