

## **Sterilization of Glass Containers**

Although most types of glass vials and containers are sterilizable by either steam or dry heat, some compositions perform better than others. Most Type I borosilicate glass is suitable, when proper techniques are followed, for sterilization and de-pyrogenation. Type III is not recommended for repeated steam sterilization, although this may be appropriate on a single use basis. Recommended autoclave cycles are 121°C @ 15 psig for 20 minutes. Caps should be left loose on the containers. Proper care must be given when venting back to atmosphere or there may be damage to the containers. Dry heat sterilization can be achieved at a temperature of 160°C for 2 to 3 hours, but glass containers are capable of withstanding sterilization temperatures up to 500°C without noticeable degradation of the glass. Repeated dry heat sterilization of containers containing a fair amount of moisture may be susceptible to glass flaking. Inversion of the container and good ventilation would prevent this from occurring. Inspect glass containers for chips, cracks, and scratches before each use and discard if damage is evident, as breakage may occur during sterilization if used. Glass containers may also be sterilized using gas or chemicals. Ethylene oxide (EtO), formaldehyde, or peroxide gas is generally used when heat and pressure cannot be used due to material limitations. Chemical disinfectants normally used are quaternary ammonium compounds, iodophors, formalin, benzalkonium chloride, and ethanol. Glass containers may also be sterilized using irradiation; however, the process changes the color of the glass, which may not be acceptable for most applications. There is glass tubing available, which will not change color when irradiated. This would be available for those interested in large quantity orders of tubing vials only.

## **Sterilization Procedure for Wells Johnson Glass Bottle Assemblies**

Before sterilizing the rubber stopper assembly remove both tubes from rubber. You do not want to place both the rubber stopper and tubes together or this will melt the rubber. Do not exceed 300°C when autoclaving the rubber stopper. Tubes can also be autoclaved.

If you have any questions regarding the sterilization procedures, please feel free in contacting us @ 800.528.1597.

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