

gke – Technical Information	TI 730-149-EN	
Time period between end of process and incubation start (Holding Time of Biological Indicators)	Version 01	
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Background Information:

Biological indicators (BI) are used to monitor sterilization processes. After sterilization the indicators have to be aseptically transferred into a growth medium or self-contained biological indicators (SCBI) have to be activated and incubated at defined temperatures.

The holding time defines the time period at the end of the sterilization process and the start of incubation. The holding time influences the incubation result depending on the sterilization process and spores used.

Influence of the holding time of a BI to monitor chemical low-temperature sterilization processes:

A long holding time has a very strong influence on the result of incubation. At the end of chemical low-temperature sterilization processes residues of sterilizing gases can remain in the packaging and the carrier material of the BIs. Examples are ethylene oxide, formaldehyde and hydrogen peroxide gases.

The residues of these sterilizing gases continuously kill left alive spores in a BI, which would grow after immediate incubation of the BI, if direct transfer into the neutralizing growth medium would occur. In seldom cases a BI incubated directly after the end of the process can still show growth, but would no longer grow when the incubation is delayed.

Recommendation at the beginning of the incubation:

When using BIs, it is always recommended to start incubation as quickly as possible after the sterilization process has been finished. For chemical low-temperature sterilization processes, this must be done with special consideration for personal safety. In thermal processes like as steam or dry heat, the beginning of the incubation can take place within 72 hours after the end of the sterilization process, without changing the result.