STERILIZATION WITH LTSF
LOW TEMPERATURE STEAM
FORMALDEHYDE
低温蒸気ホルムアルデヒド滅菌
Magnus Uvenfeldt
Quality & Regulatory Director, Specialist LTSF technology, Getinge Sterilization AB
LTSF STERILIZATION

SAFE

SUPPORTED BY STANDARDS

EFFICIENT

COMPATIBLE

January 27, 2013

Sterilization with LTSF - Low Temperature Steam Formaldehyde
LTSF STERILIZATION PROCESS

- Preheating of sterilizer
- Repeated air removals and succeeding steam inlets
- Repeated vacuum pulses and formaldehyde injections
- Sterilization holding time
- Desorption by means of vacuum pulses and steam injections
- Cooling and drying of goods
- Goods ready for usage
LTSF STERILIZATION
SUPPORTED BY INTERNATIONAL STANDARDS

EN 14180:2003+A2

Product standard containing minimum requirements and test methods to ensure a safe and efficient LTSF process

EN ISO 25424:2011

Standard covering requirements for development, validation and routine control of LTSF processes

Harmonized with MDD
LTSF STERILIZATION
AN EFFICIENT STERILIZATION METHOD

• LTSF type test according to EN 14180*
  • Ø=2mm  Length = 1500mm
  • dead end lumens

• LTSF proven by other test to sterilize**
  • Ø=2mm  Length = 4500mm
  • Double wrapped, dead end lumens

• Comparative studies

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* TT according to EN14180
** Tests performed by Getinge Sterilization ABs Q-department
LTSF STERILIZATION
A WIDE RANGE OF GOODS AND PACKING MATERIAL

COMPATIBLE

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LTSF STERILIZATION
FORMALDEHYDE IS BIO-DEGRADABLE

In environment formaldehyde is degraded according to the following formula:
\[ \text{Formaldehyde} \rightarrow \text{Formic acid} \rightarrow \text{Carbon dioxide} + \text{Water} \]

Half-life is a couple of hours.

SAFE
LTSF STERILIZATION
MINIMAL FORMALDEHYDE EXPOSURE

PPM-exposure

- Detectable levels
- 8 hours
- 15 min

OSHA (29 CFR 1910.1048)
EN14180
Inside chamber

SAFE
LTSF STERILIZATION
STEAM WITH FORMALDEHYDE

SAFE

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COMPATIBLE

EFFICIENT