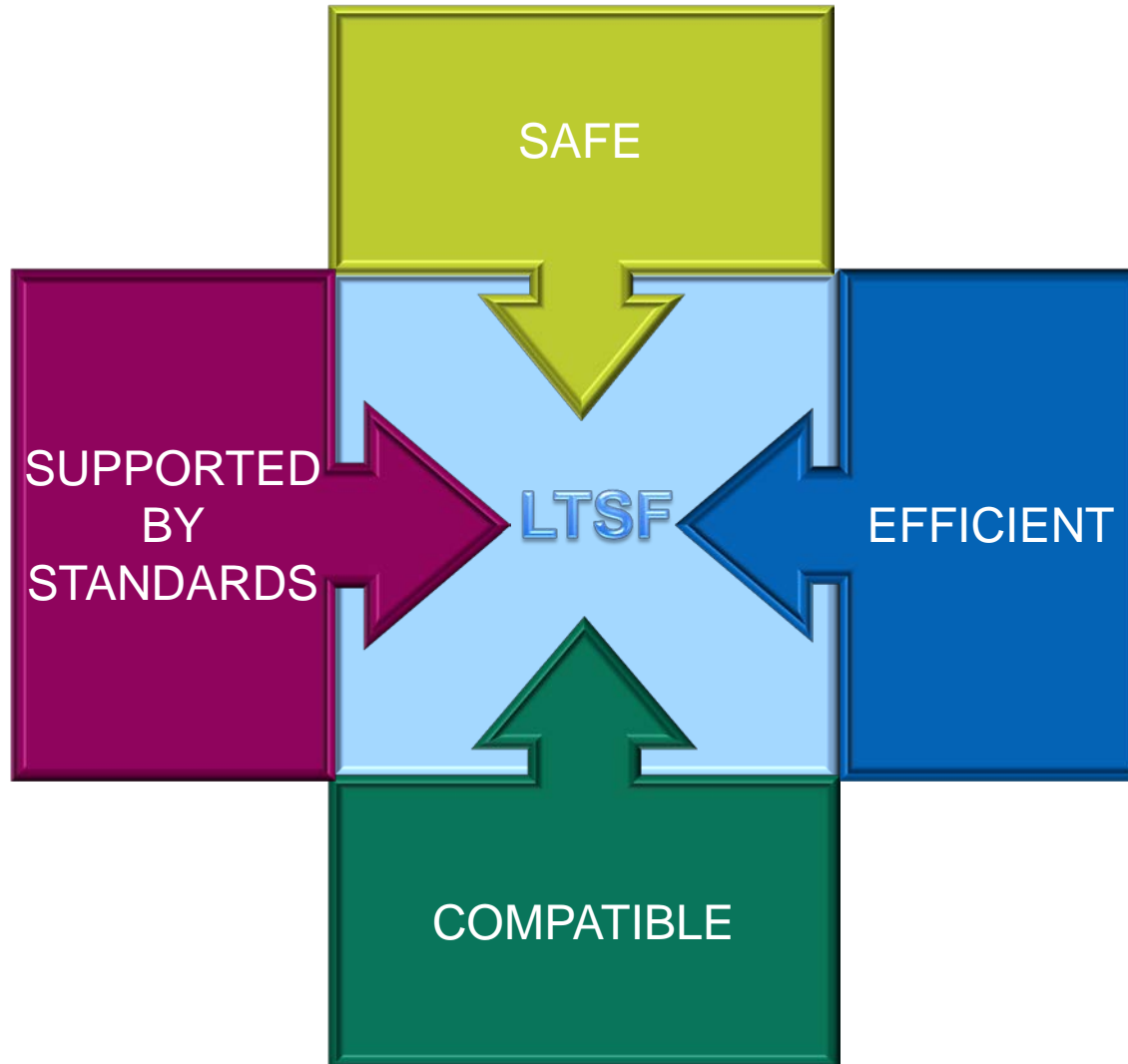


**STERILIZATION WITH LTSF
LOW TEMPERATURE STEAM
FORMALDEHYDE
低温蒸気ホルムアルデヒド滅菌**

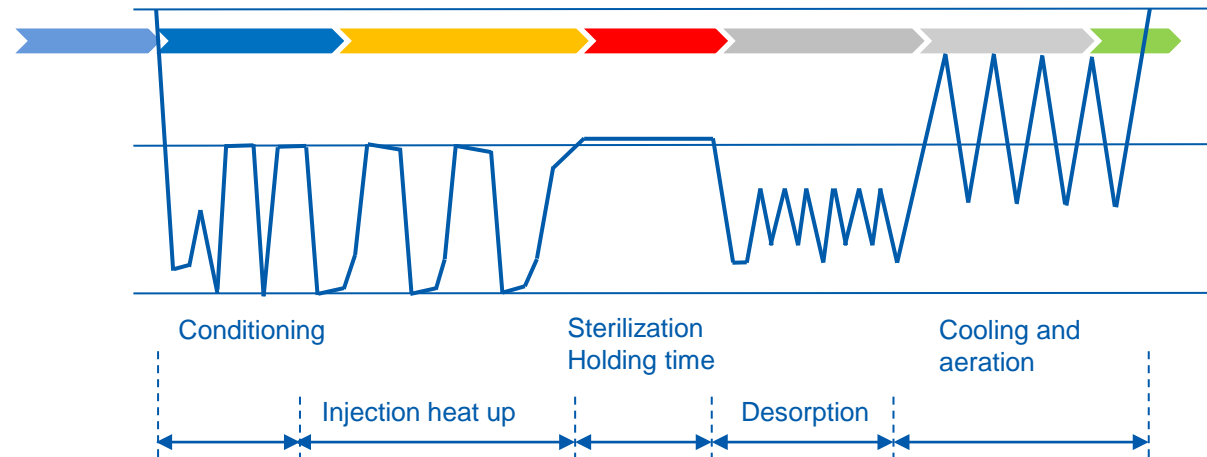
Magnus Uvenfeldt

Quality & Regulatory Director, Specialist LTSF technology, Getinge Sterilization AB

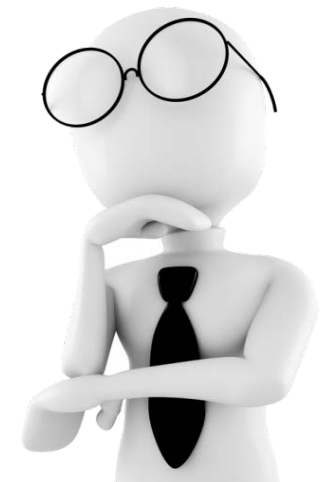
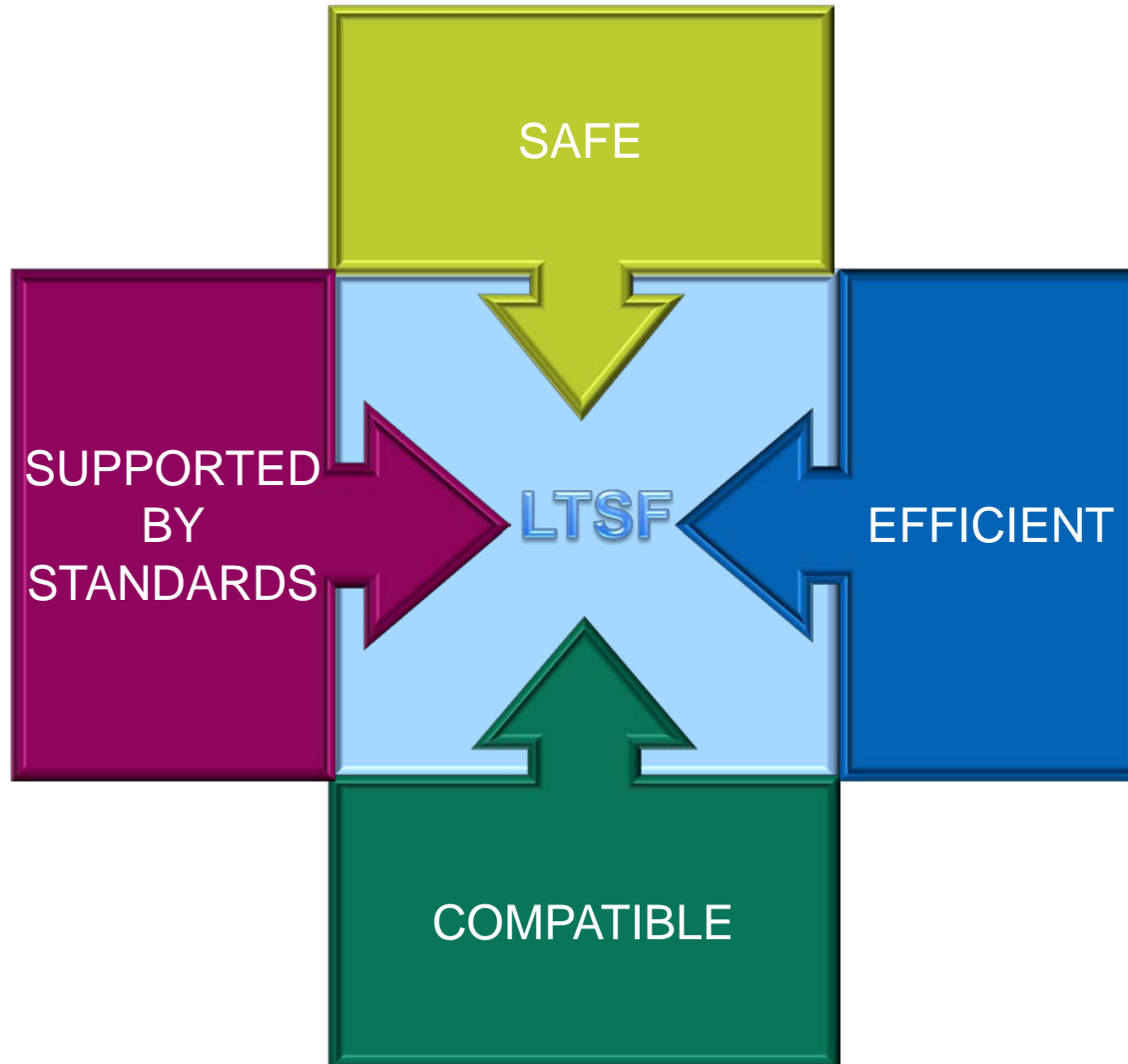


LTSF STERILIZATION PROCESS

- ▶ 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



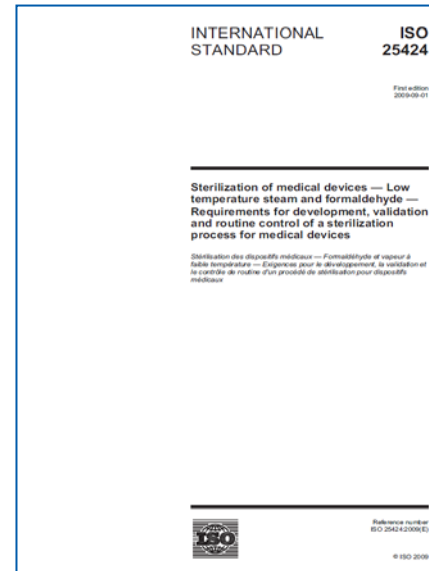
LTSF STERILIZATION



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

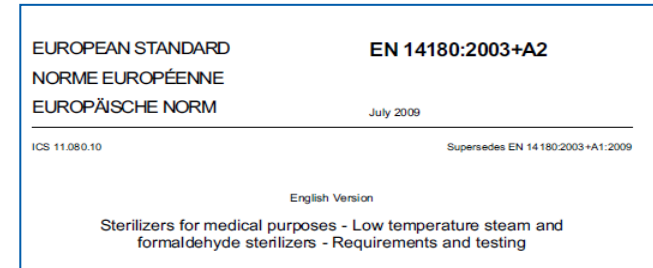
Harmonized with MDD



LTSF STERILIZATION AN EFFICIENT STERILIZATION METHOD

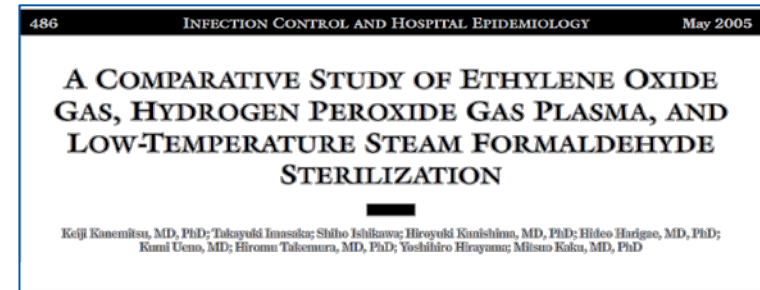
- LTSF type test according to EN 14180*

- 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

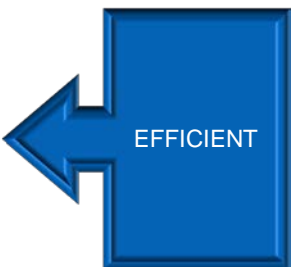
TABLE 4

Sterilization System								
EOG			PLASMA			LTSF		
1	2	3	1	2	3	1	2	3
-	-	-	+	-	+	-	-	-
-	-	-	+	+	+	-	-	-
-	-	-	+	+	+	-	-	-

NEGATIVE PROCESS CHALLENGE DEVICES

ve Control	Sterilization System								
	EOG			PLASMA			LTSF		
	1	2	3	1	2	3	1	2	3
+	-	-	-	+	-	-	-	-	-
+	-	-	-	+	+	+	-	-	-
+	-	-	-	+	+	+	-	-	-

* - low-temperature steam formaldehyde.



* TT according to EN14180
 ** Tests performed by Getinge Sterilization ABs Q-department

LTSF STERILIZATION A WIDE RANGE OF GOODS AND PACKING MATERIAL



OLYMPUS
Your Vision, Our Future

**Compatibility of
Olympus Surgical Endoscopes with
LTSF Sterilizer Sterilisation**

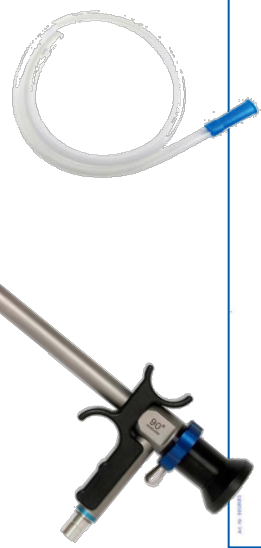
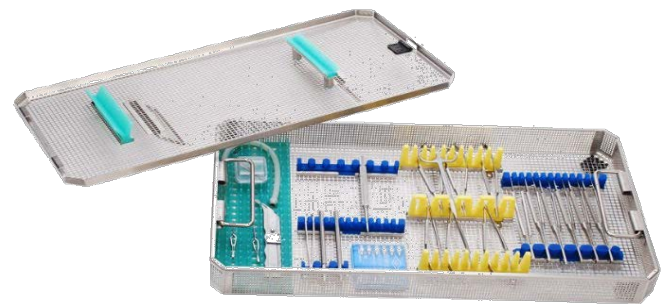
Dear customer,
Olympus Medical Systems Cooperation (OMSC) has completed material compatibility tests for Olympus surgical endoscopes with Getinge's LTSF sterilizer (HS6610). Most of the instruments (see listed groups below) are functionally compatible, if the temperature does not exceed 55°C. Please consider that sterilisation cycles with process temperatures exceeding 55°C have caused damages to the Olympus instruments, and therefore cannot be recommended for use.

Endoscopes	Accessories
Videoscopes: CHF/ CYF / ENF / HYF / LF - series	Light Source
Fiberscopes: CHF/ CYF / ENF / HYF / LF / URF - series	Miniature Probe
LTF - series	Video Adapter
	Camera heads: S5, S6, S7, S8, SX2, S3

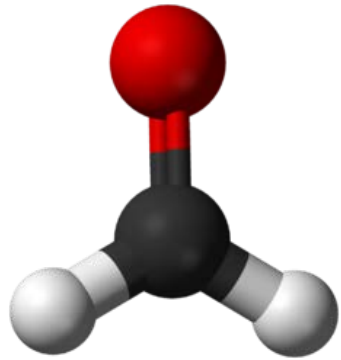
For detailed information about compatibility of special endoscopes, please contact your local Olympus dealer.

Reinhard Blum
Reinhard Blum
Product Management

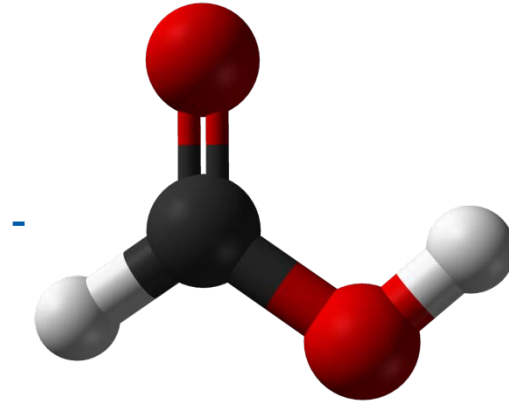
OLYMPUS MEDICAL SYSTEMS EUROPA GMBH
Wendlandstraße 14-18, 20089 Hamburg, E-mail: info@olympus-europe.com, Telefon +49 40 23773-0, Fax +49 40 23773-656
Geschäftsführer: Michael C. Woodford (Vorstand), Luke Calvert, Haruhito Morishima, Masataka Suzuki
Sitz der Gesellschaft: Hamburg, Handelsregister: Amtsgericht Hamburg HRB 35093



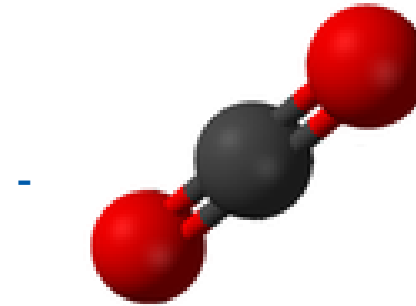
LTSF STERILIZATION FORMALDEHYDE IS BIO-DEGRADABLE



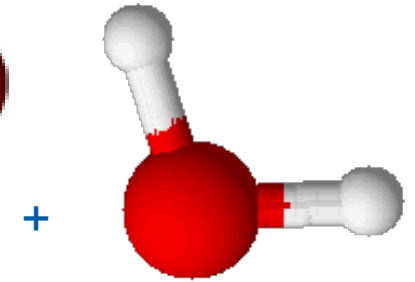
Formaldehyde



Formic acid



Carbon dioxide



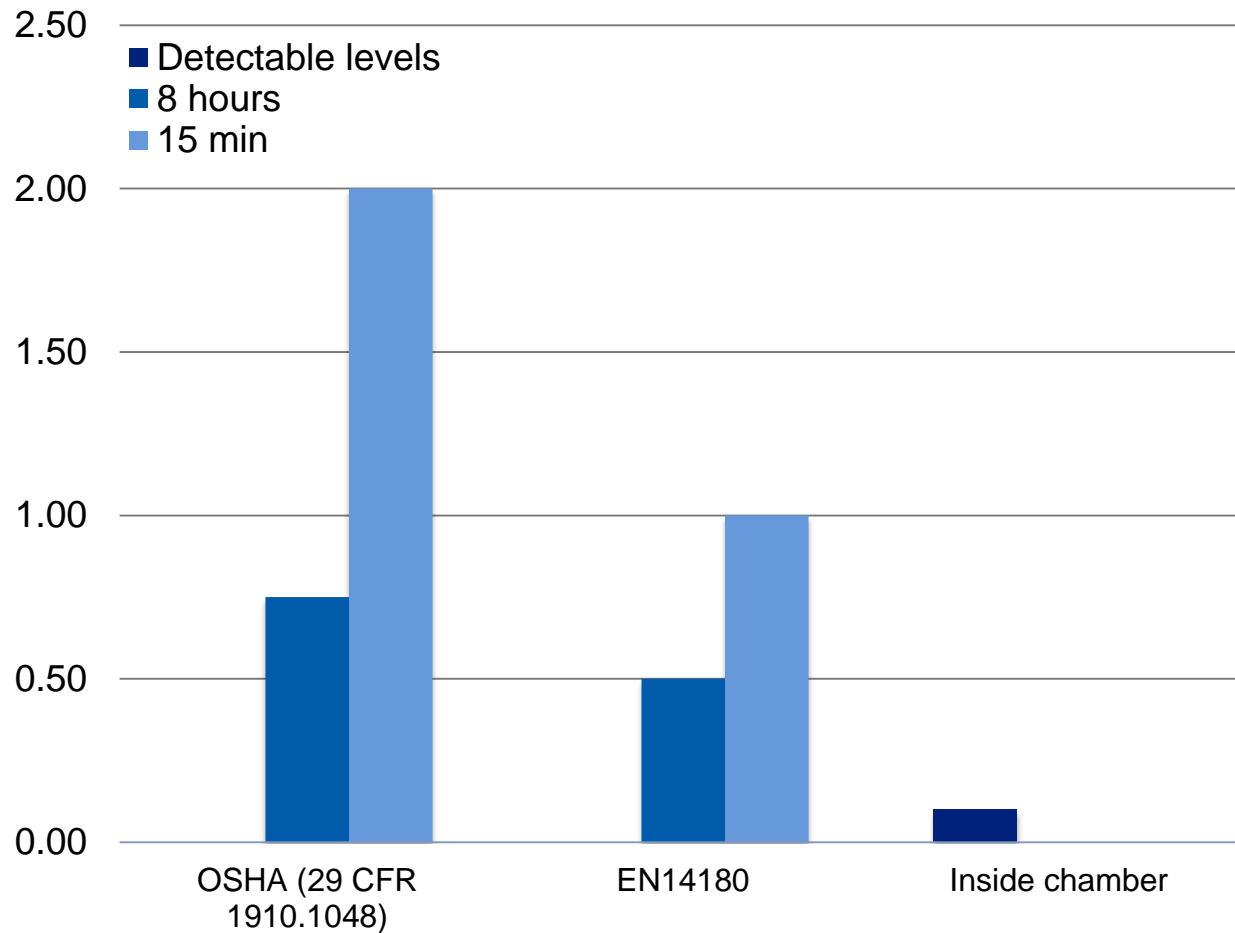
Water

In environment formaldehyde is degraded according to the following formula
Half-life is a couple of hours

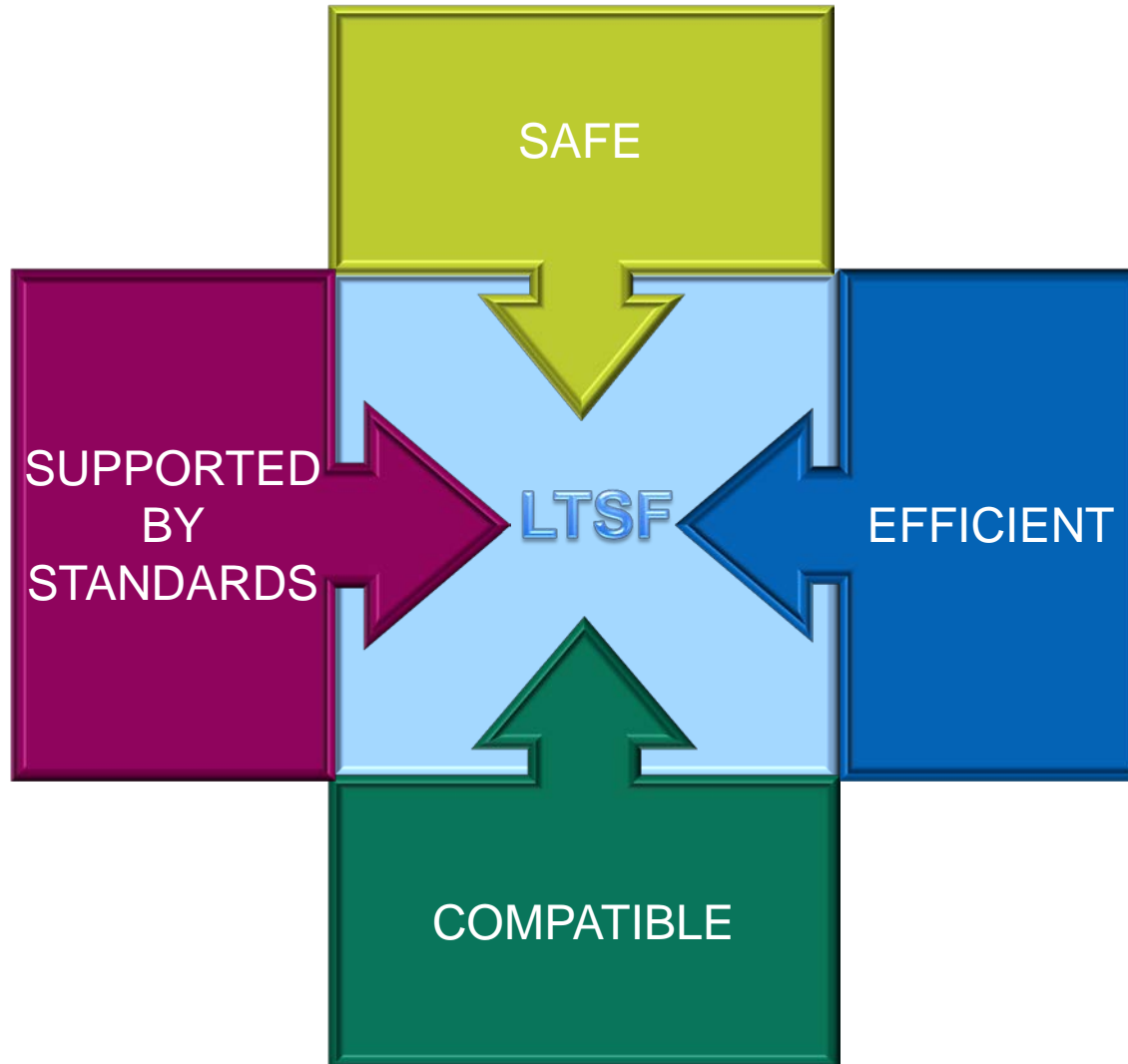


LTSF STERILIZATION MINIMAL FORMALDEHYDE EXPOSURE

PPM-exposure



LTSF STERILIZATION STEAM WITH FORMALDEHYDE



LTSF



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