



INOCULATED CARRIER SPORE THREADS For Monitoring Ethylene Oxide (EO) and Dry Heat Processes



True Indicating Code: TAB-06 and TA-06

Product Description

Inoculated Carrier Spore Threads for monitoring EO and Dry Heat processes consist of:

- An inoculated carrier, 30mm x 0.1mm thread of *Bacillus atrophaeus* Cell Line 9372
- Primary packaging either in bulk (TAB-06) or in glassine envelopes (TA-06)

Indications for Use

The Spore Threads are designed to be placed directly into a device and utilized to monitor EO and Dry Heat process efficacy. The Spore Threads may be used for equipment or process validation and routine monitoring. The Spore Threads are labelled for laboratory/industrial use only.

Physical Properties

Process	EO & Dry Heat
Thread Dimensions	30mm x 0.1 mm
Glassine Dimensions	TA-06 : 30mm x 38mm
Packaging	100 / Pouch

Monitoring Frequency

For greatest control of sterilized goods it is recommended that a minimum of ten (10) Spore Threads be included with every load.

Instructions for Use

Place Spore Threads (a minimum of 10 per exposure is recommended) inside representative materials to be sterilized. Package or wrap product as usual, if applicable.

Locate the test packages or Spore Threads in areas most difficult to sterilize, as outlined in your specific sterilization validation protocol (usually four corners front, four corners rear, centre-centre and centre-top) or according to standard operating procedure. Run the cycle.

After sterilization or exposure, remove Spore Threads or product from sterilizer

Aseptically transfer the Spore Threads to 5-15 mL of Soybean Casein Digest Broth (SCDB). Conversely, modified growth medium, True Indicating Code GGM-100, may be utilised in place of the SCDB.



Spore threads may be held at room temperature up to 96 hours post-exposure prior to transfer without any impact to the performance. If the processed Spore Threads are not transferred to growth medium within 96 hours of exposure, the cycle should be repeated.





Technical Data Sheet

Transfer one Spore Thread which has not been exposed in a sterilization process as a Positive Control.

Incubation: At least one unused tube of culture medium from the same lot should be incubated with the test series as a Negative Control. Incubate the cultured Spore Threads, the Positive Control and the Negative Control at 30°C to 40°C as outlined in the following table:

Sterilization Process	Media Type	Min. Incubation Time
EO/ Dry Heat	SCDB	7 Days
EO/Dry Heat	GGM-100	48 Hours

Monitoring: Examine the Spore Threads daily, whenever possible during incubation. Record observations.

Interpretation:

Where SCDB (standard or unmodified) was utilized: Tubes which demonstrate turbidity with a cream/orange pellicle are considered positive for growth of *Bacillus atrophaeus*. Tubes which remain clear and without pellicle are considered negative for growth.

Where modified media, True Indicating Code GGM-100, was utilized: Tubes which transition in color from Green to Yellow and/or demonstrate turbidity are considered positive for growth. Tubes which remain Green in color and do not demonstrate turbidity are considered negative for growth.

For unexpected positives, it is recommended that a Gram Stain be performed. Gram positive rods are indicative for the indicator organism.

Positive Control: Tube should demonstrate turbidity with a cream/orange pellicle. If the Positive Control does not result in growth, the exposure is considered invalid. Check the conditions during incubation and verify the capability of the medium to support growth.

Negative Control: Tube of media should remain clear. If the Negative Control results in growth, there is a potential for false positives

Compliance

ISO 11138-1 Sterilization of health care products – Biological indicators- Part 1: General requirements

ISO 11138-2 Sterilization of health care products – Biological indicators- Part 2: Biological indicators for ethylene oxide sterilization processes

ISO 11138-4 Sterilization of health care products – Biological indicators- Part 4: Biological indicators for sterilization processes

USP <55> Biological Indicators—Resistance Performance Tests

True Indicating has a validated method for Total Viable Spore Count. Please inquire for the Technical Bulletin for the outlined methodology.

USP Biological/Official Monographs





Technical Data Sheet

Performance Characteristics

Population	$\geq 1.0 \times 10^6$ per thread
Purity	No evidence of contamination present in sufficient numbers to adversely affect the finished product.
EO Resistance	<i>D</i> value at $54^\circ\text{C} \pm 1^\circ\text{C}$, 600 mg/L \pm 30 mg/L, 60% RH \pm 10% RH \geq 2.0 minutes The EO <i>D</i> value range is based on the requirements outlined in the USP, ISO 11138-2. The EO <i>D</i> Value is determined using 100% EO.
Dry Heat Resistance	<i>D</i> value at $160^\circ\text{C} \pm 1^\circ\text{C}$ \geq 2.0 minutes The Dry Heat <i>D</i> value range is based on the requirements outlined in the USP, Z value $\geq 20^\circ\text{C}$ Determined based on <i>D</i> values at three temperatures in the range of 150°C to 180°C . True Indicating typically uses <i>D</i> values determined at 150°C , 160°C and 180°C for z value calculation.
Survival – Kill Times	Calculated based on the formulations outlined in the USP, ISO 11138-1.
Post Market Criteria	Population: 50% to 300% of certified population <i>D</i> value: \pm 20% of the certified <i>D</i> value Survival Time: All Spore Threads result in growth at the certified survival time Kill Time: All Spore Threads result in no growth at the certified kill time

Storage and Shelf Life

	15°C to 30°C		Keep away from sunlight
	20% to 80% Relative Humidity		Keep Dry
Shelf Life	24 months from the date of manufacture		Protect from heat and radioactive sources
	Short excursions outside the range of temperature and relative humidity recommended will not impact the performance of the Spore Threads. Do not use damaged Spore Threads. Do not use after the expiration date. The Spore Threads contain live cultures and should be handled with care.		

Disposal

Autoclave for not less than 30 minutes at 121°C or per other validated disposal cycle prior to discard.

