Technical Data Sheet

INOCULATED CARRIER SPORE THREADS
For Monitoring Steam Processes

True Indicating Codes: TTB-06 and TT-06

Product Description

Inoculated Carrier Spore Threads consist of:

- An Inoculated Carrier, 32 mm x 0.1mm thread of *Geobacillus stearothermophilus* Cell Line 7953
- Primary packaging either in bulk (TTB-06) or in glassine envelopes (TT-06)

Indications for Use

The Spore Threads are designed to be placed directly into a device and utilized to monitor Steam sterilization process efficacy. Spore Threads may be used in equipment or process validations and for routine monitoring. The Spore Threads are labelled for laboratory/industrial use only.

Physical Properties

Process	Steam
Thread Dimensions	32 mm x 0.1 mm
Glassine Dimensions	TT-06: 30 mm x 38 mm
Packaging	100 / Pack

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, center-center and center-top) or according to standard operating procedure. Run the cycle.

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

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.

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

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

Incubation: At least one tube of culture medium (no Spore Thread) 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 55°C to 65°C, as outlined in the following table:

Sterilization Process	Media Type	Min. Incubation Time
Steam	SCDB	7 Days
	PGM-100	24 Hours

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

Interpretation:

Where SCDB (standard or unmodified) was utilized: Tubes which demonstrate turbidity with cream-colored sediment are considered positive for growth of *Geobacillus stearothermophilus*. Tubes which remain clear and without sediment are considered negative for growth.

Where modified media, True Indicating Code PGM-100, was utilized: Tubes which transition in color from Purple to Yellow and/or demonstrate turbidity are considered positive for growth. Tubes which remain Purple 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(s) should demonstrate turbidity and cream-colored sediment or demonstrate a color transition from Purple to Yellow where modified media has been utilized. 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 and Purple in color where modified medium was utilized. If the Negative Control results in growth, there is a potential for false positive results.

Compliance

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

ISO 11138-3 Sterilization of health care products – Biological indicators – Part 3: Biological indicators for moist heat 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 recommended methodology.

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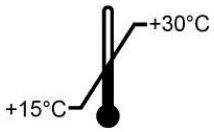
Performance Characteristics

Population	≥ 1.0 x 10^6 per Thread
Purity	No evidence of contamination present in sufficient numbers to adversely affect the finished product.
Steam Resistance	*D* value at 121°C ± 0.5°C ≥ 1.5 minutes The Steam *D* value range is based on the requirements outlined in the USP, ISO 11138-3 and guidance issued by the Food & Drug Administration (FDA). Survival – Kill Times Calculated based on the formulas outlined in the USP, ISO 11138-1 and guidance issued by the FDA. *z* value ≥ 6°C Determined based on three temperatures in the range of 110°C to 130°C. True Indicating typically utilizes *D* values determined at 118°C, 121°C and 130°C for *z* value calculation.
Post Market Criteria	Population: 50% to 300% of certified population *D* value: ± 20% of the certified *D* 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 Disposal

	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.

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