



BIOLOGICAL INDICATOR MINI SPORE STRIPS For Monitoring Ethylene Oxide (EO) and Dry Heat

Crosstex Codes: STN-062, STN-062B and STN-062MG

Product Description

Biological Indicator Mini Spore Strips for monitoring EO and Dry Heat processes consist of:

- An inoculated carrier, 2 mm x 10 mm strip, of *Bacillus atrophaeus* (Cell Line 9372)
- Primary packaging in bulk (STN-062B), a glassine envelope (STN-062) or a mini glassine envelope (STN-062MG)

Intended Use

The Mini Spore Strips may be utilized to monitor EO and Dry Heat sterilization process efficacy. The Mini Spore Strips are labeled For Industrial Use Only.

Instructions for Use

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

Locate the test packages or Mini Spore Strips in areas most difficult to sterilize, as outlined in your specific sterilizer 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 Mini Spore Strips or product from sterilizer.

Aseptically remove the Spore Strip from the primary packaging, if applicable, and transfer to Soybean Casein Digest Broth (SCDB).

Transfer one Mini Spore Strip 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. Place the cultured Mini Spore Strips, the Positive Control and the Negative Control in an incubator set at 30°C to 40°C.

Mini Spore Strips cultured in SCDB should be incubated for a minimum of seven days or per a validated reduced incubation period.

Monitoring: Examine the Mini Spore Strips daily during incubation. Record observations.

Interpretation: Tubes which demonstrate turbidity with an orange pellicle are considered positive for growth of *Bacillus atrophaeus*. Tubes which remain clear and without pellicle formation are considered negative for growth.

For unexpected positives, it is recommended that a Gram stain be performed. Gram positive rods are characteristic of the indicator organism.

Positive Control: Tube should demonstrate turbidity with an 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 medium should remain clear. If the Negative Control results in growth, there is a potential for false positives.

Physical Properties

Process	EO and Dry Heat
Strip Dimensions	2 mm x 10 mm
Glassine Dimensions	STN-062: 25 mm x 50 mm STN-062MG: 25 mm x 25 mm
Packaging	100/Box

Monitoring Frequency

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

Performance Characteristics

Population	1.0 to 5.0 x 10 ⁶ per strip
Purity	No evidence of contamination present in sufficient numbers to adversely affect the finished product.
EO Resistance	<p><i>D</i> value at 54°C ± 1°C, 600mg/L ± 30 mg/L. 60% RH ± 10% RH 2.5 to 5.8 minutes</p> <p>The EO <i>D</i> value range is based on the requirements outlined in the USP and ISO 11138-2. The EO <i>D</i> value is determined using 100% EO.</p> <p>Survival – Kill Times Calculated based on the formulas outlined in the USP and ISO 11138-1.</p>
Dry Heat Resistance	<p><i>D</i> value at 160°C ± 1°C 1.0 to 3.0 minutes</p> <p>The Dry Heat <i>D</i> value range is based on the requirements outlined in the USP.</p> <p>Survival-Kill Times Calculated based on the formulas outlined in the USP and ISO 11138-1.</p> <p>z-value ≥20°C</p> <p>Determined based on <i>D</i> values at three temperatures in range of 150°C to 180°C. Crosstex typically utilizes <i>D</i> values determined at 150°C, 160°C and 170°C for z value calculation.</p>
Post Market Criteria	<p>Population: 50% to 300% of certified population</p> <p><i>D</i> value: ± 20% of the certified <i>D</i> value</p> <p>Survival Time: All Mini Spore Strips result in growth at the certified survival time</p> <p>Kill Time: All Mini Spore Strips result in no growth at the certified kill time</p>

Compliance

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

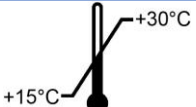





ISO 11138-2 Sterilization of health care products – Biological indicators – Part 2: Biological indicators for ethylene oxide sterilization processes

USP <55> Biological Indicators – Resistance Performance Tests

USP Biological/Official Monographs

Crosstex has a validated method for Total Viable Spore Count. Please inquire for the Technical Bulletin entitled *Population Verification of Paper Carrier Biological Indicators* to ensure consistent methodologies are being utilized when performing verification testing.

Storage and Shelf Life

	15°C to 30°C		Keep away from sunlight
	20% to 70% Relative Humidity		Keep dry
Shelf Life	30 Months from the date of manufacture		Protect from heat and radioactive sources
	<p>Short excursions outside the range of temperature and relative humidity recommended will not impact the performance of the Mini Spore Strips. Do not use damaged Mini Spore Strips. Do not use after the expiration date. The Mini Spore Strips contain live cultures and should be handled with care.</p>		

Disposal

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