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Nestlé Quality Assurance Center
Dublin

Technical Datasheet

Analysis Name: Enumeration of Bacterial Spores

Method Number: LI-00.718

Scope of Application: Raw materials, line, and finished products.

Description: A quantitative method for the enumeration of spores. A specified quantity of an initial suspension of the test sample is submitted to a heat treatment that aims at the elimination of all vegetative cells. Depending on the intensity of the heat treatment it may also inactivate spores with a low heat resistance, e.g. to select for spores that are more relevant for the microbiological stability retorted products. Poured Petri dishes are prepared using a specified non-selective culture medium and a specified quantity of the heat-treated initial suspension or decimal dilutions thereof. After incubation, the number of CFU of spores per g or mL of product is calculated from the number of colonies on dishes chosen at dilution levels so as to give a significant result.

**Sample Weight
Required:** 25 g

Method Reference: There is no internationally accepted reference method for the enumeration of spores.

Analytical Platform: Cultural Method

Special Information: See below for method variations.



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Analyte Reported	Test Conditions	Unit of Measure	Limit of Quantification
Aerobic Mesophilic Spore Result	80C Heat Shock – 30C Incubation	Per g/mL	<10/g <1/mL
Anaerobic Mesophilic Spore Result	80C Heat Shock – 30C Incubation	Per g/mL	<10/g <1/mL
Aerobic Mesophilic Spore Result	80C Heat Shock – 42C Incubation	Per g/mL	<10/g <1/mL
Anaerobic Mesophilic Spore Result	80C Heat Shock – 42C Incubation	Per g/mL	<10/g <1/mL
Aerobic Mesophilic Spore Result	100C Heat shock – 42C Incubation	Per g/mL	<10/g <1/mL
Anaerobic Mesophilic Spore Result	100C Heat shock – 42C Incubation	Per g/mL	<10/g <1/mL
Aerobic Thermophilic Spore Result	80C Heat shock – 55C Incubation	Per g/mL	<10/g <1/mL
Anaerobic Thermophilic Spore Result	80C Heat Shock – 55C Incubation	Per g/mL	<10/g <1/mL
Aerobic Thermophilic Spore Result	100C Heat Shock – 55C Incubation	Per g/mL	<10/ g <1/mL
Anaerobic Thermophilic Spore Result	100C Heat Shock – 55C Incubation	Per g/mL	<10/g <1/mL
Flat Sour Spore Result	100C Heat Shock – 55C Incubation	Per g/mL	<10/g <1/mL



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Enumeration of Bacterial Spores : LI-00.718 : 6332119

Test Conditions

80 °C Heat Shock

30 °C Incubation

Aerobic Mesophilic Spore Result

2300

CFU/g

Date Analyzed

04/13/2018

Heat treatment	Incubation Temperature	Incubation Time	Atmosphere
10 min 80 °C	30 °C ± 1 °C	72 h ± 3 h	aerobic
10 min 80 °C	42 °C ± 1 °C	48 h ± 2 h	
30 min 100 °C			
10 min 80 °C	55 °C ± 1 °C	48 h ± 2 h	anaerobic
30 min 100 °C			
10 min 80 °C	30 °C ± 1 °C	72 h ± 3 h	
10 min 80 °C		48 h ± 2 h	anaerobic
30 min 100 °C			
10 min 80 °C	55 °C ± 1 °C	48 h ± 2 h	
30 min 100 °C	55 °C ± 1 °C	48 h ± 2 h	aerobic
(Flat Sours)			