



NQAC

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
CSM - Aerobic Mesophilic Spore Result*	100C Heat Shock – 30C Incubation	Per g	<10/g
CSM - Anaerobic Mesophilic Spore Result*	100C Heat Shock – 30C Incubation	Per g	<10/g

*\*Note: CSM Aerobic / Anaerobic Mesophilic Spore 100C Heat Shock – 30C Incubation is not ISO17025:2017 accredited.*



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**Enumeration of Bacterial Spores : LI-00.718 : 6392119**

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)			