

Everbrite Efficacy Against Listeria monocytogenes using EN 1276 : 1997

Introduction

This test was carried out to assess the efficacy of Everbrite, a sanitiser/disinfectant, against *Listeria monocytogenes*.

The EN1276:1997 efficacy tests were carried out on the disinfectant solutions made up from Everbrite. The concentrations tested were 0.25%, 0.1%, 0.05% & 0.01% v/v of the concentrated product. The contact time was 5 minutes at 20°C.

**Determination of Bactericidal Activity for
Listeria monocytogenes NCTC 11994**

a) **ID Test Lab**.....NCH European Technical Centre

b) ID Samples

Name Everbrite
Batch No..... NP 1679 167/87A
Manufacturer..... NCH
Date of Delivery..... 15/07/05
Storage..... Room Temperature
Active ingredients..... QAC

c) Test Method and its validation

Method..... EN1276:1997 Quantitative Suspension Test for the Evaluation of bactericidal activity of chemical disinfectants and antiseptics used in food, industrial, domestic and institutional areas - Test Method.

Neutraliser 6g/l Lecithin, 60g/l polysorbate 80, 2g/l L-Histidine, 10g/l Sodium Thiosulphate in Maximum Recovery Diluent.

d) Experimental Conditions

Period of analysis..... 01/08/05 - 05/08/05
Product Diluent Sterile hard water 300mg/kg CaCO₃
Test Concentrations..... 0.25%, 0.1%, 0.05%, 0.01% v/v.
Appearance of Dilutions Colourless, clear product
Temperature..... 20°C
Contact time..... 5 mins ± 10s
Interfering substance... 3g/l bovine albumin
Incubation Temp..... 36°C ± 1°C
Bacterial Strain used... Listeria monocytogenes NCTC 11994

e) See Tables 1 and 2

f) Conclusion

According to EN 1276:1997, Everbrite NP1679 167/87A when diluted to 0.1% v/v in hard water possesses bactericidal activity in 5 minutes at 20°C under dirty conditions (3g/l bovine albumin) for the strain Listeria monocytogenes NCTC 11994.

5 min Contact Time

Everbrite 0.1% dilution produced a 5 log reduction in viable count of a strain of Listeria monocytogenes NCTC 11994 and PASSED the EN1276:1997

Results

Pass Rate for EN 1276:1997 is 5 log reduction or 99.999% kill.

Table 1 Verification of the methodology and validation of dilution-neutralisation method for the test concentration of 0.1% of the test product – Everbrite

Test organism	Viable Count (cfu/ml)				
	Bacterial Test suspension (N)	Bacterial Suspension (Nv)	Experimental conditions (A)	Neutraliser toxicity control (B)	Dilution-Neutralisation control (C)
Listeria monocytogenes NCTC 11994	10 ⁻⁶ : 290 10 ⁻⁷ : 24 N: 2.7 x10 ⁸	2.6 x10 ³	2.8 x10 ²	3.0 x10 ²	2.7 x 10 ²

For the strains tested:

N = number of cfu/ml of the bacterial test suspension

Nv = number of cfu/ml of the bacterial suspension

A = number of cfu/ml of the experimental conditions validation

B = number of cfu/ml of the neutraliser toxicity validation

C = number of cfu/ml of the dilution-neutralisation validation

The Neutraliser is validated for the test concentration of 0.1% solution of Everbrite Super for the Listeria monocytogenes NCTC 11994 strain tested.

Table 2 Test Results

Test Organism	Viable counts (cfu/ml) for the test mixture			
	0.25% Everbrite 5 min	0.1% Everbrite 5 min	0.05% Everbrite 5 min	0.01% Everbrite 5 min
Listeria monocytogenes	Vc 0, 0 Na <1.5 x 10 ²	Vc 0, 0 Na <1.5 x 10 ²	Vc 36, 28 Na >3.0 x 10 ³	Vc >300, >300 Na >3.0 x 10 ³
Reduction in viability at test concentration (R) i.e. Log reduction/kill	> 10 ⁵	> 10 ⁵	<10 ⁵	<10 ⁵
Test Result	Pass	Pass	Fail	Fail

Vc = Viable Count

Na = number of cfu/ml in test mixture

R = reduction in viability

CERTIFICATE OF ANALYSIS

EN 1276 : 1997 Chemical Disinfectants and Antiseptics –Quantitative suspension test for the evaluation of bactericidal activity of chemical disinfectant and antiseptics used in food, industrial, domestic, and institutional areas- Test Method and Requirements

SAMPLE: EVERBRITE NP1679 167/87A

Challenge Organism *Listeria monocytogenes* NCTC 11994

Contact Time 5 minutes

Temp 20°C

Soil 3g/l Bovine Albumin

Diluent Hard Water 300mg/kg CaCO₃

PASS Level for EN 1276:1997 - 5 log ↓ in Challenge Organism Inoculum in 5 minutes

Object of Test: To achieve a 5 log reduction in Challenge Organism Inoculum

5 Minute Contact Time

**Everbrite 0.1% Passed EN 1276:1997
Producing a 5 log ↓ Against
Listeria monocytogenes NCTC 11994**

Signed: Joanne Green
Microbiologist

15 August 2005