

Product-name: **Formula #1 Disinfectant 80 % with Lavender Oil and Water** | Batch No.: Product No.1

**Remarks:**

Methods used: Dilution neutralization method, pour plate method  
 Number of plates: 2/mL  
 Neutralizer: Polysorbate 80: 30 g/L; saponin: 30 g/L; lecithin: 3 g/L in diluent  
 Test temperature: 20 °C  
 Test organism: *Pseudomonas aeruginosa*  
 Incubation temperature: 36 °C

Diluent used for product test solutions: distilled water  
 Appearance of the product test solutions: clear

**Validation and controls**

Validation suspension (Nvo)			Neutralizer control (B)			Method validation (C) Product concentration: 80%		
Vc1	98	x̄ = 101	Vc1	93	x̄ = 95	Vc1	82	x̄ = 86
Vc2	103		Vc2	96		Vc2	89	
Is 30 ≤ x̄ of Nvo ≤ 160? - <b>YES</b>			Is x̄ of B ≥ 0,5x of Nvo? – <b>YES</b>			Is x̄ of C ≥ 0,5x x̄ of Nvo? – <b>YES</b>		

**Test suspension**

N	Vc1	Vc2	$\bar{x}_{\text{um}} = 211,81 \times 10^6$ (LOG <sub>10</sub> N = 8,33) No = N/10 (LOG <sub>10</sub> N <sub>0</sub> = 7,33) Is $7,17 \leq \text{LOG}_{10} \text{No} \leq 7,70$ ? - YES
10 <sup>-6</sup>	195	224	
10 <sup>-7</sup>	22	25	

**Test**

Concentration of the product %	Vc1	Vc2	Na = 10 $\bar{x}$	LOG <sub>10</sub> Na	LOG <sub>10</sub> R (N <sub>0</sub> = 7,33)	Contact-time (min)
80	0 (< 14)	0 (< 14)	< 140	< 2,15	> 5,18	5 min

**Explanations**

Vc = count per mL (one plate or more)  
 $\bar{x}$  = average of Vc1 and Vc2  
 $\bar{x}_{\text{um}}$  = weighted mean of  $\bar{x}$   
 R = reduction (LOG<sub>10</sub> R = LOG<sub>10</sub> N<sub>0</sub> - LOG<sub>10</sub> Na)

Product-name: **Formula #1 Disinfectant 80 % with Lavender Oil and Water** | Batch No.: Product No.1

**Remarks:**

Methods used: Dilution neutralization method, pour plate method  
 Number of plates: 2/mL  
 Neutralizer: Polysorbate 80: 30 g/L; saponin: 30 g/L; lecithin: 3 g/L in diluent  
 Test temperature: 20 °C  
 Test organism: *Staphylococcus aureus*  
 Incubation temperature: 36 °C

Diluent used for product test solutions: distilled water  
 Appearance of the product test solutions: clear

**Validation and controls**

Validation suspension (Nvo)			Neutralizer control (B)			Method validation (C) Product concentration: 80%		
Vc1	125	$\bar{x} = 121$	Vc1	112	$\bar{x} = 109$	Vc1	104	$\bar{x} = 100$
Vc2	116		Vc2	105		Vc2	95	
Is $30 \leq \bar{x}$ of Nvo $\leq 160$ ? - <b>YES</b>			Is $\bar{x}$ of B $\geq 0,5x$ of Nvo? – <b>YES</b>			Is $\bar{x}$ of C $\geq 0,5x$ $\bar{x}$ of Nvo? – <b>YES</b>		

**Test suspension**

N	Vc1	Vc2	$\bar{x}_{\text{um}} = 232,73 \times 10^6$ (LOG <sub>10</sub> N = 8,37) No = N/10 (LOG <sub>10</sub> N <sub>0</sub> = 7,37) Is $7,17 \leq \text{LOG}_{10} \text{No} \leq 7,70$ ? - YES
10 <sup>-6</sup>	244	229	
10 <sup>-7</sup>	21	18	

**Test**

Concentration of the product %	Vc1	Vc2	Na = 10 $\bar{x}$	LOG <sub>10</sub> Na	LOG <sub>10</sub> R (N <sub>0</sub> = 7,37)	Contact-time (min)
80	0 (< 14)	0 (< 14)	< 140	< 2,15	> 5,22	5 min

**Explanations**

Vc = count per mL (one plate or more)  
 $\bar{x}$  = average of Vc1 and Vc2  
 $\bar{x}_{\text{um}}$  = weighted mean of  $\bar{x}$   
 R = reduction (LOG<sub>10</sub> R = LOG<sub>10</sub> N<sub>0</sub> - LOG<sub>10</sub> Na)

**Figure S1. Bactericidal activity of Formula #1 Disinfectant 80 % with Lavender Oil and Water.**

Product-name: **Formula #2 Disinfectant 75 % with Lavender Oil and Water** | Batch No.: Product No.2

**Remarks:**

Methods used: Dilution neutralization method, pour plate method  
 Number of plates: 2/mL  
 Neutralizer: Polysorbate 80: 30 g/L; saponin: 30 g/L; lecithin: 3 g/L in diluent  
 Test temperature: 20 °C  
 Test organism: *Pseudomonas aeruginosa*  
 Incubation temperature: 36 °C

Diluent used for product test solutions: distilled water  
 Appearance of the product test solutions: clear

**Validation and controls**

Validation suspension (Nvo)			Neutralizer control (B)			Method validation (C) Product concentration: 80%		
Vc1	98	x̄ = 101	Vc1	93	x̄ = 95	Vc1	82	x̄ = 86
Vc2	103		Vc2	96		Vc2	89	
Is 30 ≤ x̄ of Nvo ≤ 160? - <b>YES</b>			Is x̄ of B ≥ 0,5x of Nvo? – <b>YES</b>			Is x̄ of C ≥ 0,5x x̄ of Nvo? – <b>YES</b>		

**Test suspension**

N	Vc1	Vc2	$\bar{x}_{wm} = 211,81 \times 10^6$ (LOG <sub>10</sub> N = 8,33) $No = N/10$ (LOG <sub>10</sub> N0 = 7,33) Is $7,17 \leq \text{LOG}_{10} No \leq 7,70$ ? - YES
$10^{-6}$	195	224	
$10^{-7}$	22	25	

**Test**

Concentration of the product %	Vc1	Vc2	Na = 10 $\bar{x}$	LOG <sub>10</sub> Na	LOG <sub>10</sub> R (N <sub>0</sub> = 7,33)	Contact-time (min)
80	0 (< 14)	0 (< 14)	< 140	< 2,15	> 5,18	5 min

**Explanations**

Vc = count per mL (one plate or more)  
 $\bar{x}$  = average of Vc1 and Vc2  
 $\bar{x}_{wm}$  = weighted mean of  $\bar{x}$   
 R = reduction (LOG<sub>10</sub> R = LOG<sub>10</sub> N<sub>0</sub> - LOG<sub>10</sub> Na)

Product-name: **Formula #2 Disinfectant 75 % with Lavender Oil and Water** | Batch No.: Product No.2

**Remarks:**

Methods used: Dilution neutralization method, pour plate method  
 Number of plates: 2/mL  
 Neutralizer: Polysorbate 80: 30 g/L; saponin: 30 g/L; lecithin: 3 g/L in diluent  
 Test temperature: 20 °C  
 Test organism: *Staphylococcus aureus*  
 Incubation temperature: 36 °C

Diluent used for product test solutions: distilled water  
 Appearance of the product test solutions: clear

**Validation and controls**

Validation suspension (Nvo)			Neutralizer control (B)			Method validation (C) Product concentration: 80%		
Vc1	125	$\bar{x} = 121$	Vc1	112	$\bar{x} = 109$	Vc1	104	$\bar{x} = 100$
Vc2	116		Vc2	105		Vc2	95	
Is $30 \leq \bar{x}$ of Nvo $\leq 160$ ? - <b>YES</b>			Is $\bar{x}$ of B $\geq 0,5x$ of Nvo? - <b>YES</b>			Is $\bar{x}$ of C $\geq 0,5x$ $\bar{x}$ of Nvo? - <b>YES</b>		

**Test suspension**

N	Vc1	Vc2	$\bar{x}_{wm} = 232,73 \times 10^6$ (LOG <sub>10</sub> N = 8,37) $No = N/10$ (LOG <sub>10</sub> N0 = 7,37) Is $7,17 \leq \text{LOG}_{10} No \leq 7,70$ ? - YES
$10^{-6}$	244	229	
$10^{-7}$	21	18	

**Test**

Concentration of the product %	Vc1	Vc2	Na = 10 $\bar{x}$	LOG <sub>10</sub> Na	LOG <sub>10</sub> R (N <sub>0</sub> = 7,37)	Contact-time (min)
80	0 (< 14)	0 (< 14)	< 140	< 2,15	> 5,22	5 min

**Explanations**

Vc = count per mL (one plate or more)  
 $\bar{x}$  = average of Vc1 and Vc2  
 $\bar{x}_{wm}$  = weighted mean of  $\bar{x}$   
 R = reduction (LOG<sub>10</sub> R = LOG<sub>10</sub> N<sub>0</sub> - LOG<sub>10</sub> Na)

**Figure S2. Bactericidal activity of Formula #1 Disinfectant 75 % with Lavender Oil and Water.**

Product-name: **Formula #3 Disinfectant 70 % with Lavender Oil and Water** | Batch No.: Product No.3

**Remarks:**

Methods used: Dilution neutralization method, pour plate method  
 Number of plates: 2/mL  
 Neutralizer: Polysorbate 80: 30 g/L; saponin: 30 g/L; lecithin: 3 g/L in diluent  
 Test temperature: 20 °C  
 Test organism: *Pseudomonas aeruginosa*  
 Incubation temperature: 36 °C

Diluent used for product test solutions: distilled water  
 Appearance of the product test solutions: clear

**Validation and controls**

Validation suspension (Nvo)			Neutralizer control (B)			Method validation (C) Product concentration: 80%		
Vc1	98	$\bar{x} = 101$	Vc1	93	$\bar{x} = 95$	Vc1	83	$\bar{x} = 89$
Vc2	103		Vc2	96		Vc2	94	
Is $30 \leq \bar{x}$ of Nvo $\leq 160$ ? - <b>YES</b>			Is $\bar{x}$ of B $\geq 0,5x$ of Nvo? - <b>YES</b>			Is $\bar{x}$ of C $\geq 0,5x$ of Nvo? - <b>YES</b>		

**Test suspension**

N	Vc1	Vc2	$\bar{x}_{\text{am}} = 211,81 \times 10^6$ (LOG <sub>10</sub> N = 8,33) $N_0 = N/10$ (LOG <sub>10</sub> N <sub>0</sub> = 7,33) Is $7,17 \leq \text{LOG}_{10} N_0 \leq 7,70$ ? - YES
10 <sup>-6</sup>	195	224	
10 <sup>-7</sup>	22	25	

**Test**

Concentration of the product %	Vc1	Vc2	Na = 10 $\bar{x}$	LOG <sub>10</sub> Na	LOG <sub>10</sub> R (N <sub>0</sub> = 7,33)	Contact-time (min)
80	0 (< 14)	0 (< 14)	< 140	< 2,15	> 5,18	5 min

**Explanations**

Vc = count per mL (one plate or more)  
 $\bar{x}$  = average of Vc1 and Vc2  
 $\bar{x}_{\text{am}}$  = weighted mean of  $\bar{x}$   
 R = reduction (LOG<sub>10</sub> R = LOG<sub>10</sub> N<sub>0</sub> - LOG<sub>10</sub> Na)

Product-name: **Formula #3 Disinfectant 70 % with Lavender Oil and Water** | Batch No.: Product No.3

**Remarks:**

Methods used: Dilution neutralization method, pour plate method  
 Number of plates: 2/mL  
 Neutralizer: Polysorbate 80: 30 g/L; saponin: 30 g/L; lecithin: 3 g/L in diluent  
 Test temperature: 20 °C  
 Test organism: *Staphylococcus aureus*  
 Incubation temperature: 36 °C

Diluent used for product test solutions: distilled water  
 Appearance of the product test solutions: clear

**Validation and controls**

Validation suspension (Nvo)			Neutralizer control (B)			Method validation (C) Product concentration: 80%		
Vc1	125	$\bar{x} = 121$	Vc1	112	$\bar{x} = 109$	Vc1	116	$\bar{x} = 108$
Vc2	116		Vc2	105		Vc2	100	
Is $30 \leq \bar{x}$ of Nvo $\leq 160$ ? - YES			Is $\bar{x}$ of B $\geq 0,5x$ of Nvo? – YES			Is $\bar{x}$ of C $\geq 0,5x$ $\bar{x}$ of Nvo? – YES		

**Test suspension**

N	Vc1	Vc2	$\bar{x}_{\text{am}} = 232,73 \times 10^6$ (LOG <sub>10</sub> N = 8,37) $N_0 = N/10$ (LOG <sub>10</sub> N <sub>0</sub> = 7,37) Is $7,17 \leq \text{LOG}_{10} N_0 \leq 7,70$ ? - YES
10 <sup>-6</sup>	244	229	
10 <sup>-7</sup>	21	18	

**Test**

Concentration of the product %	Vc1	Vc2	Na = 10 $\bar{x}$	LOG <sub>10</sub> Na	LOG <sub>10</sub> R (N <sub>0</sub> = 7,37)	Contact-time (min)
80	0 (< 14)	0 (< 14)	< 140	< 2,15	> 5,22	5 min

**Explanations**

Vc = count per mL (one plate or more)  
 $\bar{x}$  = average of Vc1 and Vc2  
 $\bar{x}_{\text{am}}$  = weighted mean of  $\bar{x}$   
 R = reduction (LOG<sub>10</sub> R = LOG<sub>10</sub> N<sub>0</sub> - LOG<sub>10</sub> Na)

**Figure S3. Bactericidal activity of Formula #1 Disinfectant 70 % with Lavender Oil and Water.**

Product-name: **Formula #5 Disinfectant 80 % with Oregano Oil and Oregano Water** | Batch No.: Product No.5

**Remarks:**

Methods used: Dilution neutralization method, pour plate method  
 Number of plates: 2/mL  
 Neutralizer: Polysorbate 80: 30 g/L; saponin: 30 g/L; lecithin: 3 g/L in diluent  
 Test temperature: 20 °C  
 Test organism: *Pseudomonas aeruginosa*  
 Incubation temperature: 36 °C

Diluent used for product test solutions: distilled water  
 Appearance of the product test solutions: clear

**Validation and controls**

Validation suspension (Nvo)			Neutralizer control (B)			Method validation (C) Product concentration: 80%		
Vc1	98	x̄ = 101	Vc1	93	x̄ = 95	Vc1	80	x̄ = 84
Vc2	103		Vc2	96		Vc2	88	
Is 30 ≤ x̄ of Nvo ≤ 160? - <b>YES</b>			Is x̄ of B ≥ 0,5x of Nvo? – <b>YES</b>			Is x̄ of C ≥ 0,5x of Nvo? – <b>YES</b>		

**Test suspension**

N	Vc1	Vc2	$\bar{x}_{wm} = 211,81 \times 10^6$ (LOG <sub>10</sub> N = 8,33) $N_0 = N/10$ (LOG <sub>10</sub> N <sub>0</sub> = 7,33) Is $7,17 \leq \text{LOG}_{10} N_0 \leq 7,70$ ? - YES
10 <sup>-6</sup>	195	224	
10 <sup>-7</sup>	22	25	

**Test**

Concentration of the product %	Vc1	Vc2	Na = 10 $\bar{x}$	LOG <sub>10</sub> Na	LOG <sub>10</sub> R (N <sub>0</sub> = 7,33)	Contact-time (min)
80	0 (< 14)	0 (< 14)	< 140	< 2,15	> 5,18	5 min

**Explanations**

Vc = count per mL (one plate or more)  
 $\bar{x}$  = average of Vc1 and Vc2  
 $\bar{x}_{wm}$  = weighted mean of  $\bar{x}$   
 R = reduction (LOG<sub>10</sub> R = LOG<sub>10</sub> N<sub>0</sub> - LOG<sub>10</sub> Na)

Product-name: **Formula #5 Disinfectant 80 % with Oregano Oil and Oregano Water** | Batch No.: Product No.5

**Remarks:**

Methods used: Dilution neutralization method, pour plate method  
 Number of plates: 2/mL  
 Neutralizer: Polysorbate 80: 30 g/L; saponin: 30 g/L; lecithin: 3 g/L in diluent  
 Test temperature: 20 °C  
 Test organism: *Staphylococcus aureus*  
 Incubation temperature: 36 °C

Diluent used for product test solutions: distilled water  
 Appearance of the product test solutions: clear

**Validation and controls**

Validation suspension (Nvo)			Neutralizer control (B)			Method validation (C) Product concentration: 80%		
Vc1	125	x̄ = 121	Vc1	112	x̄ = 109	Vc1	111	x̄ = 102
Vc2	116		Vc2	105		Vc2	92	
Is 30 ≤ x̄ of Nvo ≤ 160? - <b>YES</b>			Is x̄ of B ≥ 0,5x of Nvo? – <b>YES</b>			Is x̄ of C ≥ 0,5x x̄ of Nvo? – <b>YES</b>		

**Test suspension**

N	Vc1	Vc2	$\bar{x}_{wm} = 232,73 \times 10^6$ (LOG <sub>10</sub> N = 8,37) $N_0 = N/10$ (LOG <sub>10</sub> N <sub>0</sub> = 7,37) Is $7,17 \leq \text{LOG}_{10} N_0 \leq 7,70$ ? - YES
10 <sup>-6</sup>	244	229	
10 <sup>-7</sup>	21	18	

**Test**

Concentration of the product %	Vc1	Vc2	Na = 10 $\bar{x}$	LOG <sub>10</sub> Na	LOG <sub>10</sub> R (N <sub>0</sub> = 7,37)	Contact-time (min)
80	0 (< 14)	0 (< 14)	< 140	< 2,15	> 5,22	5 min

**Explanations**

Vc = count per mL (one plate or more)  
 $\bar{x}$  = average of Vc1 and Vc2  
 $\bar{x}_{wm}$  = weighted mean of  $\bar{x}$   
 R = reduction (LOG<sub>10</sub> R = LOG<sub>10</sub> N<sub>0</sub> - LOG<sub>10</sub> Na)

Figure S4. Bactericidal activity of Formula #1 Disinfectant 80 % with Oregano Oil and Water.



Product-name: **Formula #6 Disinfectant 75 % with Oregano Oil and Oregano Water** | Batch No.: Product No.6

**Remarks:**

Methods used: Dilution neutralization method, pour plate method  
 Number of plates: 2/mL  
 Neutralizer: Polysorbate 80: 30 g/L; saponin: 30 g/L; lecithin: 3 g/L in diluent  
 Test temperature: 20 °C  
 Test organism: *Pseudomonas aeruginosa*  
 Incubation temperature: 36 °C

Diluent used for product test solutions: distilled water  
 Appearance of the product test solutions: clear

**Validation and controls**

Validation suspension (Nvo)			Neutralizer control (B)			Method validation (C) Product concentration: 80%		
Vc1	98	x̄ = 101	Vc1	93	x̄ = 95	Vc1	80	x̄ = 84
Vc2	103		Vc2	96		Vc2	88	
Is 30 ≤ x̄ of Nvo ≤ 160? - <b>YES</b>			Is x̄ of B ≥ 0,5x of Nvo? – <b>YES</b>			Is x̄ of C ≥ 0,5x x̄ of Nvo? – <b>YES</b>		

**Test suspension**

N	Vc1	Vc2	$\bar{x}_{\text{um}} = 211,81 \times 10^6$ (LOG <sub>10</sub> N = 8,33) No = N/10 (LOG <sub>10</sub> N0 = 7,33) Is $7,17 \leq \text{LOG}_{10} \text{No} \leq 7,70$ ? - YES
10 <sup>-6</sup>	195	224	
10 <sup>-7</sup>	22	25	

**Test**

Concentration of the product %	Vc1	Vc2	Na = 10 $\bar{x}$	LOG <sub>10</sub> Na	LOG <sub>10</sub> R (N <sub>0</sub> = 7,33)	Contact-time (min)
80	0 (< 14)	0 (< 14)	< 140	< 2,15	> 5,18	5 min

**Explanations**

Vc = count per mL (one plate or more)  
 $\bar{x}$  = average of Vc1 and Vc2  
 $\bar{x}_{\text{um}}$  = weighted mean of  $\bar{x}$   
 R = reduction (LOG<sub>10</sub> R = LOG<sub>10</sub> N<sub>0</sub> - LOG<sub>10</sub> Na)

Product-name: **Formula #6 Disinfectant 75 % with Oregano Oil and Oregano Water** | Batch No.: Product No.6

**Remarks:**

Methods used: Dilution neutralization method, pour plate method  
 Number of plates: 2/mL  
 Neutralizer: Polysorbate 80: 30 g/L; saponin: 30 g/L; lecithin: 3 g/L in diluent  
 Test temperature: 20 °C  
 Test organism: *Staphylococcus aureus*  
 Incubation temperature: 36 °C

Diluent used for product test solutions: distilled water  
 Appearance of the product test solutions: clear

**Validation and controls**

Validation suspension (Nvo)			Neutralizer control (B)			Method validation (C) Product concentration: 80%		
Vc1	125	$\bar{x} = 121$	Vc1	112	$\bar{x} = 109$	Vc1	111	$\bar{x} = 102$
Vc2	116		Vc2	105		Vc2	92	
Is $30 \leq \bar{x}$ of Nvo $\leq 160$ ? - <b>YES</b>			Is $\bar{x}$ of B $\geq 0,5x$ of Nvo? - <b>YES</b>			Is $\bar{x}$ of C $\geq 0,5x$ $\bar{x}$ of Nvo? - <b>YES</b>		

**Test suspension**

N	Vc1	Vc2	$\bar{x}_{\text{um}} = 232,73 \times 10^6$ (LOG <sub>10</sub> N = 8,37) No = N/10 (LOG <sub>10</sub> N0 = 7,37) Is $7,17 \leq \text{LOG}_{10} \text{No} \leq 7,70$ ? - YES
10 <sup>-6</sup>	244	229	
10 <sup>-7</sup>	21	18	

**Test**

Concentration of the product %	Vc1	Vc2	Na = 10 $\bar{x}$	LOG <sub>10</sub> Na	LOG <sub>10</sub> R (N <sub>0</sub> = 7,37)	Contact-time (min)
80	0 (< 14)	0 (< 14)	< 140	< 2,15	> 5,22	5 min

**Explanations**

Vc = count per mL (one plate or more)  
 $\bar{x}$  = average of Vc1 and Vc2  
 $\bar{x}_{\text{um}}$  = weighted mean of  $\bar{x}$   
 R = reduction (LOG<sub>10</sub> R = LOG<sub>10</sub> N<sub>0</sub> - LOG<sub>10</sub> Na)

**Figure S5. Bactericidal activity of Formula #1 Disinfectant 75 % with Oregano Oil and Water.**

Product-name: **Formula #7 Disinfectant 70 % with Oregano Oil and Oregano Water** | Batch No.: Product No.7

**Remarks:**

Methods used: Dilution neutralization method, pour plate method  
 Number of plates: 2/mL  
 Neutralizer: Polysorbate 80: 30 g/L; saponin: 30 g/L; lecithin: 3 g/L in diluent  
 Test temperature: 20 °C  
 Test organism: *Pseudomonas aeruginosa*  
 Incubation temperature: 36 °C

Diluent used for product test solutions: distilled water  
 Appearance of the product test solutions: clear

**Validation and controls**

Validation suspension (Nvo)			Neutralizer control (B)			Method validation (C) Product concentration: 80%		
Vc1	98	x̄ = 101	Vc1	93	x̄ = 95	Vc1	83	x̄ = 87
Vc2	103		Vc2	96		Vc2	91	
Is 30 ≤ x̄ of Nvo ≤ 160? - <b>YES</b>			Is x̄ of B ≥ 0,5x of Nvo? - <b>YES</b>			Is x̄ of C ≥ 0,5x of Nvo? - <b>YES</b>		

**Test suspension**

N	Vc1	Vc2	$\bar{x}_{\text{wm}} = 211,81 \times 10^6$ (LOG <sub>10</sub> N = 8,33) $N_0 = N/10$ (LOG <sub>10</sub> N <sub>0</sub> = 7,33) Is $7,17 \leq \text{LOG}_{10} N_0 \leq 7,70$ ? - YES
10 <sup>-6</sup>	195	224	
10 <sup>-7</sup>	22	25	

**Test**

Concentration of the product %	Vc1	Vc2	Na = 10 $\bar{x}$	LOG <sub>10</sub> Na	LOG <sub>10</sub> R (N <sub>0</sub> = 7,33)	Contact-time (min)
80	0 (< 14)	0 (< 14)	< 140	< 2,15	> 5,18	5 min

**Explanations**

Vc = count per mL (one plate or more)  
 $\bar{x}$  = average of Vc1 and Vc2  
 $\bar{x}_{\text{wm}}$  = weighted mean of  $\bar{x}$   
 R = reduction (LOG<sub>10</sub> R = LOG<sub>10</sub> N<sub>0</sub> - LOG<sub>10</sub> Na)

Product-name: **Formula #6 Disinfectant 70 % with Oregano Oil and Oregano Water** | Batch No.: Product No.7

**Remarks:**

Methods used: Dilution neutralization method, pour plate method  
 Number of plates: 2/mL  
 Neutralizer: Polysorbate 80: 30 g/L; saponin: 30 g/L; lecithin: 3 g/L in diluent  
 Test temperature: 20 °C  
 Test organism: *Staphylococcus aureus*  
 Incubation temperature: 36 °C

Diluent used for product test solutions: distilled water  
 Appearance of the product test solutions: clear

**Validation and controls**

Validation suspension (Nvo)			Neutralizer control (B)			Method validation (C) Product concentration: 80%		
Vc1	125	x̄ = 121	Vc1	112	x̄ = 109	Vc1	111	x̄ = 105
Vc2	116		Vc2	105		Vc2	99	
Is 30 ≤ x̄ of Nvo ≤ 160? - YES			Is x̄ of B ≥ 0,5x of Nvo? – YES			Is x̄ of C ≥ 0,5x x̄ of Nvo? – YES		

**Test suspension**

N	Vc1	Vc2	$\bar{x}_{\text{wm}} = 232,73 \times 10^6$ (LOG <sub>10</sub> N = 8,37) $N_0 = N/10$ (LOG <sub>10</sub> N <sub>0</sub> = 7,37) Is $7,17 \leq \text{LOG}_{10} N_0 \leq 7,70$ ? - YES
10 <sup>-6</sup>	244	229	
10 <sup>-7</sup>	21	18	

**Test**

Concentration of the product %	Vc1	Vc2	Na = 10 $\bar{x}$	LOG <sub>10</sub> Na	LOG <sub>10</sub> R (N <sub>0</sub> = 7,37)	Contact-time (min)
80	0 (< 14)	0 (< 14)	< 140	< 2,15	> 5,22	5 min

**Explanations**

Vc = count per mL (one plate or more)  
 $\bar{x}$  = average of Vc1 and Vc2  
 $\bar{x}_{\text{wm}}$  = weighted mean of  $\bar{x}$   
 R = reduction (LOG<sub>10</sub> R = LOG<sub>10</sub> N<sub>0</sub> - LOG<sub>10</sub> Na)

**Figure S6. Bactericidal activity of Formula #1 Disinfectant 70 % with Oregano Oil and Water.**

Product-name: Essential oil of Lavender | Batch No.: Product No.4

Product-name: **Essential oil of Lavender** | Batch No.: Product No.4

#### Remarks:

Methods used: Dilution neutralization method, pour plate method  
 Number of plates: 2/mL  
 Neutralizer: Polysorbate 80: 30 g/L; saponin: 30 g/L; lecithin: 3 g/L in diluent  
 Test temperature: 20 °C  
 Test organism: *Pseudomonas aeruginosa*  
 Incubation temperature: 36 °C

Diluent used for product test solutions: distilled water  
 Appearance of the product test solutions: clear

#### Validation and controls

Validation suspension (Nvo)			Neutralizer control (B)			Method validation (C) Product concentration: 80%		
Vc1	98	$\bar{x} = 101$	Vc1	93	$\bar{x} = 95$	Vc1	69	$\bar{x} = 73$
Vc2	103		Vc2	96		Vc2	77	
Is $30 \leq \bar{x}$ of Nvo $\leq 160$ ? - <b>YES</b>			Is $\bar{x}$ of B $\geq 0,5x$ of Nvo? – <b>YES</b>			Is $\bar{x}$ of C $\geq 0,5x$ $\bar{x}$ of Nvo? – <b>YES</b>		

#### Test suspension

N	Vc1	Vc2	$\bar{x}_{\text{wm}} = 211,81 \times 10^6$ (LOG <sub>10</sub> N = 8,33) $N_0 = N/10$ (LOG <sub>10</sub> N <sub>0</sub> = 7,33) Is $7,17 \leq \text{LOG}_{10} N_0 \leq 7,70$ ? - YES
10 <sup>-6</sup>	195	224	
10 <sup>-7</sup>	22	25	

#### Test

Concentration of the product %	Vc1	Vc2	Na = 10 $\bar{x}$	LOG <sub>10</sub> Na	LOG <sub>10</sub> R (N <sub>0</sub> = 7,33)	Contact-time (min)
80	0 (< 14)	0 (< 14)	< 140	< 2,15	> 5,18	5 min

#### Explanations

Vc = count per mL (one plate or more)  
 $\bar{x}$  = average of Vc1 and Vc2  
 $\bar{x}_{\text{wm}}$  = weighted mean of  $\bar{x}$   
 R = reduction (LOG<sub>10</sub> R = LOG<sub>10</sub> N<sub>0</sub> - LOG<sub>10</sub> Na)

Product-name: **Essential oil of Lavender** | Batch No.: Product No.4

#### Remarks:

Methods used: Dilution neutralization method, pour plate method  
 Number of plates: 2/mL  
 Neutralizer: Polysorbate 80: 30 g/L; saponin: 30 g/L; lecithin: 3 g/L in diluent  
 Test temperature: 20 °C  
 Test organism: *Staphylococcus aureus*  
 Incubation temperature: 36 °C

Diluent used for product test solutions: distilled water  
 Appearance of the product test solutions: clear

#### Validation and controls

Validation suspension (Nvo)			Neutralizer control (B)			Method validation (C) Product concentration: 80%		
Vc1	125	$\bar{x} = 121$	Vc1	112	$\bar{x} = 109$	Vc1	97	$\bar{x} = 91$
Vc2	116		Vc2	105		Vc2	85	
Is $30 \leq \bar{x}$ of Nvo $\leq 160$ ? - <b>YES</b>			Is $\bar{x}$ of B $\geq 0,5x$ of Nvo? - <b>YES</b>			Is $\bar{x}$ of C $\geq 0,5x$ $\bar{x}$ of Nvo? - <b>YES</b>		

#### Test suspension

N	Vc1	Vc2	$\bar{x}_{\text{wm}} = 232,73 \times 10^6$ (LOG <sub>10</sub> N = 8,37) $N_0 = N/10$ (LOG <sub>10</sub> N <sub>0</sub> = 7,37) Is $7,17 \leq \text{LOG}_{10} N_0 \leq 7,70$ ? - YES
10 <sup>-6</sup>	244	229	
10 <sup>-7</sup>	21	18	

#### Test

Concentration of the product %	Vc1	Vc2	Na = 10 $\bar{x}$	LOG <sub>10</sub> Na	LOG <sub>10</sub> R (N <sub>0</sub> = 7,37)	Contact-time (min)
80	0 (< 14)	0 (< 14)	< 140	< 2,15	> 5,22	5 min

#### Explanations

Vc = count per mL (one plate or more)  
 $\bar{x}$  = average of Vc1 and Vc2  
 $\bar{x}_{\text{wm}}$  = weighted mean of  $\bar{x}$   
 R = reduction (LOG<sub>10</sub> R = LOG<sub>10</sub> N<sub>0</sub> - LOG<sub>10</sub> Na)

Figure S7. Bactericidal activity of Lavender Oil.

Product-name: **Essential oil of Oregano** | Batch No.: Product No.8

**Remarks:**

Methods used: Dilution neutralization method, pour plate method  
 Number of plates: 2/mL  
 Neutralizer: Polysorbate 80: 30 g/L; saponin: 30 g/L; lecithin: 3 g/L in diluent  
 Test temperature: 20 °C  
 Test organism: *Pseudomonas aeruginosa*  
 Incubation temperature: 36 °C

Diluent used for product test solutions: distilled water  
 Appearance of the product test solutions: clear

**Validation and controls**

Validation suspension (Nvo)			Neutralizer control (B)		Method validation (C) Product concentration: 80%			
Vc1	98	$\bar{x} = 101$	Vc1	93	$\bar{x} = 95$	Vc1	60	$\bar{x} = 66$
Vc2	103		Vc2	96		Vc2	71	
Is $30 \leq \bar{x}$ of Nvo $\leq 160$ ? - <b>YES</b>			Is $\bar{x}$ of B $\geq 0,5x$ of Nvo? – <b>YES</b>		Is $\bar{x}$ of C $\geq 0,5x$ $\bar{x}$ of Nvo? – <b>YES</b>			

**Test suspension**

N	Vc1	Vc2	$\bar{x}_{\text{wm}} = 211,81 \times 10^6$ (LOG <sub>10</sub> N = 8,33) $N_0 = N/10$ (LOG <sub>10</sub> N <sub>0</sub> = 7,33) Is $7,17 \leq \text{LOG}_{10} N_0 \leq 7,70$ ? - YES
10 <sup>-6</sup>	195	224	
10 <sup>-7</sup>	22	25	

**Test**

Concentration of the product %	Vc1	Vc2	Na = 10x	LOG <sub>10</sub> Na	LOG <sub>10</sub> R (N <sub>0</sub> = 7,33)	Contact-time (min)
80	0 (< 14)	0 (< 14)	< 140	< 2,15	> 5,18	5 min

**Explanations**

Vc = count per mL (one plate or more)  
 $\bar{x}$  = average of Vc1 and Vc2  
 $\bar{x}_{\text{wm}}$  = weighted mean of  $\bar{x}$   
 R = reduction (LOG<sub>10</sub> R = LOG<sub>10</sub> N<sub>0</sub> - LOG<sub>10</sub> Na)

Product-name: **Essential oil of Oregano** | Batch No.: Product No.8

**Remarks:**

Methods used: Dilution neutralization method, pour plate method  
 Number of plates: 2/mL  
 Neutralizer: Polysorbate 80: 30 g/L; saponin: 30 g/L; lecithin: 3 g/L in diluent  
 Test temperature: 20 °C  
 Test organism: *Staphylococcus aureus*  
 Incubation temperature: 36 °C

Diluent used for product test solutions: distilled water  
 Appearance of the product test solutions: clear

**Validation and controls**

Validation suspension (Nvo)			Neutralizer control (B)			Method validation (C) Product concentration: 80%		
Vc1	125	$\bar{x} = 121$	Vc1	112	$\bar{x} = 109$	Vc1	86	$\bar{x} = 79$
Vc2	116		Vc2	105		Vc2	72	
Is $30 \leq \bar{x}$ of Nvo $\leq 160$ ? - <b>YES</b>			Is $\bar{x}$ of B $\geq 0,5x$ of Nvo? - <b>YES</b>			Is $\bar{x}$ of C $\geq 0,5x$ $\bar{x}$ of Nvo? - <b>YES</b>		

**Test suspension**

N	Vc1	Vc2	$\bar{x}_{\text{wm}} = 232,73 \times 10^6$ (LOG <sub>10</sub> N = 8,37) $N_0 = N/10$ (LOG <sub>10</sub> N <sub>0</sub> = 7,37) Is $7,17 \leq \text{LOG}_{10} N_0 \leq 7,70$ ? - YES
10 <sup>-6</sup>	244	229	
10 <sup>-7</sup>	21	18	

**Test**

Concentration of the product %	Vc1	Vc2	Na = 10x	LOG <sub>10</sub> Na	LOG <sub>10</sub> R (N <sub>0</sub> = 7,37)	Contact-time (min)
80	0 (< 14)	0 (< 14)	< 140	< 2,15	> 5,22	5 min

**Explanations**

Vc = count per mL (one plate or more)  
 $\bar{x}$  = average of Vc1 and Vc2  
 $\bar{x}_{\text{wm}}$  = weighted mean of  $\bar{x}$   
 R = reduction (LOG<sub>10</sub> R = LOG<sub>10</sub> N<sub>0</sub> - LOG<sub>10</sub> Na)

**Figure S8. Bactericidal activity of Oregano Oil.**