



Abbott Analytical



Consulting Scientists to the Disinfectant Industry

Test Report

Product name: TK Swordsman

Batch or ref no:

Manufacturer or supplier: G Shepherd Farm Animal Health Ltd
Wrainhow Business Centre, Lewth Lane, Woodplumpton, Preston,
PR4 0TS

Sample ref: 18C/064 **Date received:** 26 March 2018

Date tested: 4 April 2018 **Certificate date:** 9 April 2018

Certificate no: 18C.064VB.GSH **Page:** 1 of 6

Analysis required: EN 1656:2009, Chemical disinfectants and antiseptics -
Quantitative suspension test for the evaluation of
bactericidal activity of chemical disinfectants and
antiseptics used in the veterinary area - Test method and
requirements (phase 2, step 1)

Storage conditions: Room temperature in darkness

Appearance of product (solution): Dark green liquid

Active substance(s) and their concentration(s): Not disclosed

Notes

The test results in this report relate only to the sample(s) tested.
This test report may not be reproduced except in full, adapted, altered or used
to create a derivative work, without written approval from Abbott Analytical.

D C Watson BSc, CBiol, MRSB

Abbott Analytical Limited
Unit 2, Hickmans Road,
Birkenhead, CH41 1JH, United Kingdom

Registered address: Kemp House, 160 City Road,
London, EC1V 2NX, United Kingdom

Telephone: +44 (0)151 345 6753
email: enqs@abbottanalytical.co.uk
www.abbottanalytical.co.uk

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Experimental conditions

Concentration(s) of product tested: 1:30, 1:100 v/v

Product diluent: Sterile hard water (300 mg/l CaCO₃)

Test organism(s): *Pseudomonas aeruginosa* (DSM 939)
Proteus vulgaris (DSM 30118)
Staphylococcus aureus (DSM 799)
Enterococcus hirae (DSM 3320)

Contact time(s): 30 min ± 10 s

Test temperature: 10 °C ± 1 °C

Test conditions: Low-level soiling

Interfering substance: 3.0 g/l bovine albumin

Method: Dilution-neutralisation

Neutralising solution: 30 g/l Polysorbate 80 + 3 g/l Lecithin +
1 g/l L-histidine + 1 g/l L-cysteine

Incubation temperature: 36 °C ± 1 °C

Conclusion

When tested at a concentration of 1:30 this sample of TK Swordsman meets the requirements of EN 1656:2009 for bactericidal activity in 30 minutes at 10 °C, under low-level soiling conditions, against the referenced strains of *Pseudomonas aeruginosa*, *Proteus vulgaris*, *Staphylococcus aureus* and *Enterococcus hirae*.

When tested at a concentration of 1:100 this sample of TK Swordsman meets the requirements of EN 1656:2009 for bactericidal activity in 30 minutes at 10 °C, under low-level soiling conditions, against the referenced strains of *Pseudomonas aeruginosa*, *Proteus vulgaris* and *Staphylococcus aureus*. However, when tested at a concentration of 1:100 this sample of TK Swordsman does not meet the requirements of EN 1656:2009 for bactericidal activity in 30 minutes at 10 °C, under low-level soiling conditions, against the referenced strain of *Enterococcus hirae*.

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Results: *Pseudomonas aeruginosa* (DSM 939)

Validation and controls:

Validation suspension (Nv_o)			Experimental conditions control (A)			Neutralizer or filtration control (B)			Method validation (C)		
Vc1	56	$\bar{x} =$	Vc1	59	$\bar{x} =$	Vc1	57	$\bar{x} =$	Vc1	60	$\bar{x} =$
Vc2	61	58.5	Vc2	54	56.5	Vc2	62	59.5	Vc2	63	61.5
30 ≤ \bar{x} (Nv_o) ≤ 160 ? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no			\bar{x} (A) ≥ 0.5 × \bar{x} (Nv_o) ? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no			\bar{x} (B) ≥ 0.5 × \bar{x} (Nv_o) ? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no			\bar{x} (C) ≥ 0.5 × \bar{x} (Nv_o) ? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no		

Test suspension: (N and N_o)

N	Vc1	Vc2	\bar{x} (wm) = 4.25 × 10 ⁸ ; lg N = 8.63
10 ⁻⁶	>330	>330	$N_o = N/10$; lg N_o = 7.63
10 ⁻⁷	41	44	7.17 ≤ lg N_o ≤ 7.70 ? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Control of weighted mean counts (N)			Quotient = N/A Between 5 and 15 ? <input type="checkbox"/> yes <input type="checkbox"/> no

Test:

Product test conc.	Contact time	Vc1	Vc2	$N_a =$ (\bar{x} × 10)	lg $N_a =$	lg R = (lg N_o - lg N_a)	Status
1:30	30 min	0	0	< 140	< 2.15	> 5.48	PASS
1:100	30 min	2	0	< 140	< 2.15	> 5.48	PASS

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Results: *Proteus vulgaris* (DSM 30118)

Validation and controls:

Validation suspension (N_{v_o})			Experimental conditions control (A)			Neutralizer or filtration control (B)			Method validation (C)		
Vc1	91	$\bar{x} =$	Vc1	90	$\bar{x} =$	Vc1	94	$\bar{x} =$	Vc1	90	$\bar{x} =$
Vc2	93	92	Vc2	92	91	Vc2	91	92.5	Vc2	90	90
30 ≤ \bar{x} (N_{v_o}) ≤ 160 ? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no			\bar{x} (A) ≥ 0.5 × \bar{x} (N_{v_o}) ? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no			\bar{x} (B) ≥ 0.5 × \bar{x} (N_{v_o}) ? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no			\bar{x} (C) ≥ 0.5 × \bar{x} (N_{v_o}) ? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no		

Test suspension: (N and N_o)

N	Vc1	Vc2	\bar{x} (wm) = 4.05 × 10 ⁸ ; lg N = 8.61
10 ⁻⁶	>330	>330	$N_o = N/10$; lg $N_o = 7.61$
10 ⁻⁷	39	42	7.17 ≤ lg N_o ≤ 7.70 ? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Control of weighted mean counts (N)			Quotient = N/A Between 5 and 15 ? <input type="checkbox"/> yes <input type="checkbox"/> no

Test:

Product test conc.	Contact time	Vc1	Vc2	$N_a =$ (\bar{x} × 10)	lg $N_a =$	lg R = (lg N_o - lg N_a)	Status
1:30	30 min	0	0	< 140	< 2.15	> 5.46	PASS
1:100	30 min	0	0	< 140	< 2.15	> 5.46	PASS

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Results: *Staphylococcus aureus* (DSM 799)

Validation and controls:

Validation suspension (N_{v_o})			Experimental conditions control (A)			Neutralizer or filtration control (B)			Method validation (C)		
Vc1	56	$\bar{x} =$	Vc1	59	$\bar{x} =$	Vc1	62	$\bar{x} =$	Vc1	61	$\bar{x} =$
Vc2	61	58.5	Vc2	60	59.5	Vc2	62	62	Vc2	60	60.5
30 ≤ \bar{x} (N_{v_o}) ≤ 160 ? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no			\bar{x} (A) ≥ 0.5 × \bar{x} (N_{v_o}) ? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no			\bar{x} (B) ≥ 0.5 × \bar{x} (N_{v_o}) ? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no			\bar{x} (C) ≥ 0.5 × \bar{x} (N_{v_o}) ? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no		

Test suspension: (N and N_o)

N	Vc1	Vc2	\bar{x} (wm) = 4.40 × 10 ⁸ ; lg N = 8.64
10 ⁻⁶	>330	>330	$N_o = N/10$; lg N_o = 7.64
10 ⁻⁷	43	45	7.17 ≤ lg N_o ≤ 7.70 ? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Control of weighted mean counts (N)			Quotient = N/A Between 5 and 15 ? <input type="checkbox"/> yes <input type="checkbox"/> no

Test:

Product test conc.	Contact time	Vc1	Vc2	$N_a =$ (\bar{x} × 10)	lg $N_a =$	lg $R =$ (lg N_o - lg N_a)	Status
1:30	30 min	0	0	< 140	< 2.15	> 5.49	PASS
1:100	30 min	0	0	< 140	< 2.15	> 5.49	PASS

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Results: *Enterococcus hirae* (DSM 3320)

Validation and controls:

Validation suspension (N_{v_o})			Experimental conditions control (A)			Neutralizer or filtration control (B)			Method validation (C)		
Vc1	39	$\bar{x} =$	Vc1	40	$\bar{x} =$	Vc1	38	$\bar{x} =$	Vc1	43	$\bar{x} =$
Vc2	42	40.5	Vc2	37	38.5	Vc2	39	38.5	Vc2	40	41.5
30 ≤ \bar{x} (N_{v_o}) ≤ 160 ? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no			\bar{x} (A) ≥ 0.5 × \bar{x} (N_{v_o}) ? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no			\bar{x} (B) ≥ 0.5 × \bar{x} (N_{v_o}) ? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no			\bar{x} (C) ≥ 0.5 × \bar{x} (N_{v_o}) ? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no		

**Test suspension:
(N and N_o)**

N	Vc1	Vc2	\bar{x} (wm) = 3.75 × 10 ⁸ ; lg N = 8.57
10 ⁻⁶	>330	>330	$N_o = N/10$; lg $N_o = 7.57$
10 ⁻⁷	37	38	7.17 ≤ lg N_o ≤ 7.70 ? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Control of weighted mean counts (N)			Quotient = N/A Between 5 and 15 ? <input type="checkbox"/> yes <input type="checkbox"/> no

Test:

Product test conc.	Contact time	Vc1	Vc2	$N_a =$ (\bar{x} × 10)	lg $N_a =$	lg R = (lg N_o - lg N_a)	Status
1:30	30 min	0	0	< 140	< 2.15	> 5.42	PASS
1:100	30 min	102	107	1045	3.02	4.55	FAIL

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