Abbott Analytical

Consulting Scientists to the Disinfectant Industry

Certificate of Analysis

Sample(s):	One sample of Remuvit		
Received from:	Klenitise Ltd. Unit 59, Vale Business Park, Llandow, Cowbridge, CF71 7PF		
Date received:	23 November 2009	**Date tested:**	27 November 2009
Certificate no:	09L.148SB-KR.ENZ	**Certificate date:**	4 December 2009
Sample ref:	9L/148	**Page:**	1 of 2
Analysis required:	EN 13697, Chemical disinfectants and antiseptics - Quantitative non-porous surface test for the evaluation of bactericidal and/or fungicidal activity of chemical disinfectants used in food, industrial, domestic and institutional areas - Test method and requirements without mechanical action (phase 2, step 2)		

Product stored at:	Room temperature
Active substance:	Not declared
Test conditions:	'Clean'
Interfering substance:	0.3g/l bovine albumin + 1g/l tryptone
Product test concentration:	10.0% v/v
Product diluent used during test:	Sterile hard water 300mg/l $CaCO_3$
Contact time:	5 minutes
Test temperature:	20°C ± 0.5°C
Neutralising solution:	30g/l polysorbate 80, 3g/l lecithin, 1g/l histidine, 1g/l cysteine
Incubation temperature:	37°C ± 1°C
Identification of bacterial strain(s) used:	*Pseudomonas aeruginosa* ATCC 15442 *Escherichia coli* NCTC 10418 *Staphylococcus aureus* NCTC 10788 *Enterococcus hirae* ATCC 8043

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Test results:

Test Organism	*Pseudomonas aeruginosa*		*Escherichia coli*		*Staphylococcus aureus*		*Enterococcus hirae*	
10^{-1} **Validation Suspension**	Vc1 654	Vc2 638	Vc1 314	Vc2 426	Vc1 536	Vc2 447	Vc1 411	Vc2 285
	Nv0 6.46 x10^{3}		Nv0 3.70 x10^{3}		Nv0 4.92 x10^{3}		Nv0 3.48 x10^{3}	
10^{0} **Experimental Control**	Vc1 566	Vc2 592	Vc1 350	Vc2 308	Vc1 440	Vc2 412	Vc1 222	Vc2 306
	A 5.79 x10^{2}		A 3.29 x10^{2}		A 4.26 x10^{2}		A 2.64 x10^{2}	
10^{0} **Neutraliser Control**	Vc1 588	Vc2 542	Vc1 372	Vc2 214	Vc1 378	Vc2 400	Vc1 344	Vc2 258
	B 5.65 x10^{2}		B 2.93 x10^{2}		B 3.89 x10^{2}		B 3.01 x10^{2}	
10^{0} **Method Validation**	Vc1 582	Vc2 514	Vc1 300	Vc2 336	Vc1 404	Vc2 362	Vc1 277	Vc2 260
	C 5.48 x10^{2}		C 3.18 x10^{2}		C 3.83 x10^{2}		C 2.69 x10^{2}	
10^{-5} **Surface Inoculum**	Vc1 536	Vc2 468	Vc1 392	Vc2 428	Vc1 356	Vc2 394	Vc1 344	Vc2 272
10^{-6}	Vc1 54	Vc2 46	Vc1 46	Vc2 53	Vc1 44	Vc2 56	Vc1 31	Vc2 46
	N 5.01 x10^{7}		N 4.53 x10^{7}		N 4.38 x10^{7}		N 3.47 x10^{7}	
10^{-1} **Results**	Vc 0		Vc 0		Vc 0		Vc 0	
	Na < 1.00 x10^{1} R > 5.01 x10^{6}		Na < 1.00 x10^{1} R > 4.53 x10^{6}		Na < 1.00 x10^{1} R > 4.38 x10^{6}		Na < 1.00 x10^{1} R > 3.47 x10^{6}	
Log_{10} Reduction	> 6.70		> 6.66		> 6.64		> 6.54	

Vc = Viable count
Nv = cfu/ml in the validation suspension
N = cfu/ml in the surface inoculum
Na = cfu/ml in the test mixture
R = Reduction in viability

Requirements & Conclusion:

To pass EN 13697 a log_{10} reduction of at least 4 is required.

This batch of Remuvit, when diluted to 10.0% v/v, passes the requirements of EN 13697 for bactericidal activity in 5 minutes at 20°C under 'clean' conditions against the reference organisms detailed.

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