	LABORATORIES		Doc No.	TRB-20	016-124-02	_ 👳			
le	Microbiological Analysis Quantitative suspension chemical disinfectants an (Phase 2 / Step 1)	test for the evalua	(2009) tion of bac	ctericidal	activity of				
oduct	CondenCide	MGS No	224136	SO No	5786	4393			
a) Ident	ification of test laboratory:								
		MGS Laboratories	s Ltd						
Test lab	ooratory	Unit 20 Hoeford F Barwell Lane Gosport Hampshire PO13 0AU	Point						
b) Ident	ification of the Customer:								
Custom	er Name	Advanced Engine	ering Ltd						
Custom	er Address	Guardian House Stroudley Rd Basingstoke Hampshire							
c) Ident	ification of the sample:	RG24 8NL							
Name o	f product	CondenCide							
Batch n availabl	umber (and expiry date if e)	N/A							
Manufa	cturer (or supplier)	Advanced Engine	ering Ltd						
Date of	delivery	01 Sep 16							
Storage	conditions	Room temperatur	e and dark	ness					
	diluent recommended by the cturer for use	Not stated							
	ubstance(s) and their tration(s) (optional)	Didecyl dimethyl a (0.173mol/L).	ammonium	chloride -	Pre-diluted: 6.	.25g/100g			
Appeara	ance of the product	Clear pale blue lic	luid						
d) Test	method and its validation:								
MGS pr	ocedure reference	WIN-1000.050-07							
Method		Dilution neutralisation							
Neutrali	ser	Lecithin 3g/l, polysorbate 80 30g/l, sodium thiosulphate 5g/l, L- histidine1g/l, saponin 30g/l, phosphate buffer powder 0.35g/l							
Details	of validation of the neutraliser	Neutraliser valida 1276:2009.	tion perforr	ned accor	ding to 5.5.2 o	fEN			

Page 1 of 8

NOTE 1: The results relate only to the sample which was tested and cannot be guaranteed to represent the batch from which it was taken.

	ABORATORIE			Doc No.	TRB-20)16-124-02			
tle	Microbiological Analysis Quantitative suspension chemical disinfectants a (Phase 2 / Step 1)	test for	the evalua	(2009) tion of bac	ctericidal	activity of			
oduct	CondenCide		MGS No	224136	SO No	5786	4393		
e) Experir	mental conditions:								
Period of a	analysis	05 Se	p 16 to 12 S	Sep 16					
Product di	luent used during the test	Standard Hardness Water							
Product te	st concentrations	1:6 Di	lution (1-pai	t product:6	6 parts wat	ter)			
Appearan	ce of product dilutions	Clear	pale blue lic	luid					
Contact tir	ne	5 mini	utes ± 10s						
Test temp	erature range	20°C :	± 2°C						
Interfering	substance	3g/l B	ovine album	in					
Stability of	f the mixture	Precipitate absent throughout test							
Temperati	ure of incubation	36°C ± 2°C							
Identificati used	on of the bacterial strains	Pseudomonas aeruginosaATCC 15442Escherichia coliNCTC 10418Staphylococcus aureusATCC 6538Enterococcus hiraeATCC 10541				C 10418 C 6538			
f) Results									
Test result	ts	1) 2)		and validat n of bacter		vity			
g) Conclu	sion:	1 part minute	product: 6 p	oarts water nder dirty	, possesse conditions	es bactericida for the refere			
h) Deviati	ons:	None							
i) Special	remarks:	All controls and validations were within basic limits No precipitate was formed during the test							
J) Comme	ents:	This re	eport replac	es TRB-20	16-124-01				
Re-issued	Iby: Unda Jan	NOS	A	pproved	by:				
Name: Lin		_	P	lame: Kim	Morwood				
Position:	Laboratory Manager		F	Position: Technical Director					
Date:			г)ate:	0 0				
	22 SEPID			-2	2 526	di	Page 2 of 8		

NOTE 1: The results relate only to the sample which was tested and cannot be guaranteed to represent the batch from which it was taken.

Microbiological Services and Consultancy		ES	Doc No.	TRB-20	016-124-02	
Title	Microbiological Analys Quantitative suspension chemical disinfectants (Phase 2 / Step 1)	on test for the evaluat	(2009) tion of bac	tericidal	activity of	
Product	CondenCide	MGS No	224136	SO No	5786	4393

The MGS procedure WIN-1000.050 is a laboratory method based on the EN 1276 (2009) standard; the minor deviations from the standard, which do not affect the overall results, are detailed below:

- EN 1276 states an allowed tolerance of 36°C ±1°C or 37°C±1°C, MGS laboratories equipment is validated to ±2°C therefore MGS procedures state ±2°C. The tests are self validating so any stress caused to the organism will be reflected in the validations.
- Organisms are prepared by swabbing plates and adding to 9ml diluent to form a suspension, rather than adding loopfuls of organism to 10ml diluent with beads, shaking for 3 minutes, aspirating and adding to a new container. Swabbing forms a smooth suspension removing the need to shake with beads.
- The laboratory is regulated at 20°C; therefore for testing at 20°C a water bath is not used.
- Plates are incubated for the full time rather than performing an interim read; in addition the incubation period may be extended to a maximum of 4 due to business hours
- All tests performed include validation of neutralisation, but the neutraliser is not always pre-proved.
- Any part of the method may be altered to meet customer requirements; MGS does not insist on testing the standard conditions or three concentrations of product with replicates of the limiting organism

NOTE 1: The results relate only to the sample which was tested and cannot be guaranteed to represent the batch from which it was taken.

Microbiological Services and Consultancy			Doc No.	TRB-20	016-124-02	
Title	Microbiological Analysi Quantitative suspension chemical disinfectants a (Phase 2 / Step 1)	n test for the evaluation	6 (2009) tion of bac	ctericidal	activity of	
Product	CondenCide	MGS No	224136	SO No	5786	4393

Product batch number: N/A	
Dilution-neutralisation method Pour plate	C Spread plate
Number of plates: 1 / ml	
Neutraliser: Lecithin 3g/l, polysorbate 80 30g/l, sodium t	hiosulphate 5g/l, L-histidine1g/l, saponin 30g/l,
phosphate buffer powder 0.35g/l	
Actual test temperature: 23.5°C	
Test organism: P. aeruginosa ATCC 15442	
Incubation temperature: 36°C ± 2°C	
Interfering substances: 3g/I Bovine albumin	
Date of Test: 05 Sep 16	
Person responsible: Laura Taylor Signate	ure: prene
Diluent used for product test solutions: Standard Hardne	ess Water

Appearance of product test solutions: Clear pale blue liquid

Validation and Controls

Valida (Nv ₀)	ation su	spension	[3] [20] [20] [40] [40] [40] [40] [40] [40] [40] [4	imental tions C	ontrol (A)	Neuti	raliser	Control (B)		od Valid	ation (C)
Vc1	104	x =100	Vc1	90	x =87	Vc1	96	χ =94	Vc1	129	x =127
Vc2	96		Vc2	84		Vc2	92		Vc2	125	
$30 \le \chi \text{ of } Nv_0 \le 160? \qquad \chi \text{ of}$		χ of A Yes	A is $\geq 0.5 \times \chi$ of Nv ₀ ? X No		$\begin{array}{c} \chi \text{ of } B \text{ is } \geq 0.5 \times \chi \text{ of} \\ Nv_0? \\ Yes \qquad \chi \qquad No \qquad \end{array}$			$\begin{array}{c c} \chi \text{ of } C \text{ is } \geq 0.5 \times \chi \text{ of} \\ Nv_0? \\ Yes \qquad \chi \qquad No \qquad \end{array}$			

Test suspension and test

Test suspension	Ν	Vc1	Vc2	$\chi = 42 \times 10^7$; IgN= 8.63	and a second	
(N and N ₀):	10-6	>330	>330	N ₀ = N/10; IgN ₀ = 7.63	[]	[]
	10-7	45	39	7.17 ≤ lg N₀ ≤ 7.70?	Yes X	No

Conc of the product	Vc1	Vc2	Na = x x10	lgNa	lgR	Contact time
1:6	<14	<14	<140	<2.15	>5.48	5 minutes

NOTE 1: The results relate only to the sample which was tested and cannot be guaranteed to represent the batch from which it was taken.

	LABORATORI		Doc No.	TRB-2	016-124-02	
Title	Microbiological Analys Quantitative suspension chemical disinfectants (Phase 2 / Step 1)	on test for the evaluat		ctericidal	activity of	
Product	CondenCide	MGS No	224136	SO No	5786	4393
Dilution-r Number of Neutralise Actual tes Test orga Incubatio Interfering Date of T Person re Diluent us	oatch number: N/A neutralisation method of plates: 1 / ml er: Lecithin 3g/l, polysorbate phosphate buffer pow st temperature: 23.5°C anism: <i>E. coli</i> NCTC 10418 n temperature: 36°C ± 2°C g substances: 3g/l Bovine al est: 05 Sep 16 esponsible: Laura Taylor sed for product test solutions:	vder 0.35g/l bumin Sig s: Standard Hardness \	sulphate 5g gnature: <i>ρ</i> ι			onin 30g/I,

Validation and Controls

Validation suspension (Nv ₀)			Experimental Conditions Control (A)			Neutraliser Control (B)			Method Validation (C)		
									Prod o	conc: 1:0	6
Vc1	87	χ =82	Vc1	67	χ =61	Vc1	89	χ =80	Vc1	57	x =54
Vc2	76		Vc2	54		Vc2	70		Vc2	51	
$30 \le \chi \text{ of } Nv_0 \le 160?$ $\chi \text{ of } A \text{ is } \ge$		s ≥ 0.5	x χ of Nv₀?	χ of E Nv ₀ ?	} is ≥ 0.	5 x χ of	χ of C Nv₀?	is ≥ 0.5	x χ of		
Yes	X	No	Yes	X	No	Yes	Х	No	Yes	X	No

Test suspension and test

Test suspension	Ν	Vc1	Vc2	χ wm = 285 x 10 ⁶ ; IgN= 8.45
(N and N₀):	10 ⁻⁶	284	281	No = N/10; IgNo = 7.45
	10 ⁻⁷	32	29	$7.17 \le \log N_0 \le 7.70?$ Yes X No

Conc of the product	Vc1	Vc2	Na = χ x10	lgNa	lgR	Contact time
1:6	<14	<14	<140	<2.15	>5.30	5 minutes

NOTE 1: The results relate only to the sample which was tested and cannot be guaranteed to represent the batch from which it was taken.

	LABORATORI		Doc No.	TRB-2	016-124-02	
Title	Title Microbiological Analysis Based on EN 7 Quantitative suspension test for the eva chemical disinfectants and antiseptics (Phase 2 / Step 1)			ctericidal	activity of	
Product	Product CondenCide MGS			SO No	5786	4393
Product I	patch number: N/A					

Pour plate X Spread plate

Number of plates: 1 / ml
Neutraliser: Lecithin 3g/l, polysorbate 80 30g/l, sodium thiosulphate 5g/l, L-histidine1g/l, saponin 30g/l,
phosphate buffer powder 0.35g/l
Actual test temperature: 24.1°C
Test smeniers & surrous ATCC 6520

Test organism: S. aureus ATCC 6538

Incubation temperature: 36°C ± 2°C

Dilution-neutralisation method

Interfering substances: 3g/I Bovine albumin

Date of Test: 08 Sep 16

Person responsible: Edward Webber

Signature: E Work Diluent used for product test solutions: Standard Hardness Water Appearance of product test solutions: Clear pale blue liquid

Validation and Controls

Validation suspensionExperimental(Nv ₀)Conditions Control (A)			Neutraliser Control (B)			Method Validation (C)					
						1			Prod o	conc: 1:0	6
Vc1	44	χ =5	Vc1	72	χ =67	Vc1	62	χ =72	Vc1	58	χ =59
Vc2	55		Vc2	62		Vc2	82	1	Vc2	59	
30 ≤) Yes [(of Nv₀ ≤ X	≤ 160? No			x χ of Nv₀? No	χ of B Nv₀? Yes	3 is ≥ 0.	5 x χ of No	χ of C Nv₀? Yes	is ≥ 0.5 X	x χ of No

Test suspension and test

Test suspension	N	Vc1	Vc2	χ wm = 220 x 10 ⁶ ; IgN= 8.34
(N and N ₀):	10-6	201	239	$N_0 = N/10; IgN_0 = 7.34$
	10 ⁻⁷	21	22	7.17 ≤ lg N₀ ≤ 7.70? Yes X No

Conc of the product	Vc1	Vc2	Na = χ x10	lgNa	lgR	Contact time
1:6	<14	<14	<140	<2.15	>5.19	5 minutes

NOTE 1: The results relate only to the sample which was tested and cannot be guaranteed to represent the batch from which it was taken.

	LABORATORIE		Doc No.	TRB-20	016-124-02	
Title	Microbiological Analysi Quantitative suspension chemical disinfectants a (Phase 2 / Step 1)	6 (2009) tion of bac	ctericidal	activity of		
Product	CondenCide	4393				

Pour plate X Spread plate Dilution-neutralisation method Number of plates: 1 / ml Neutraliser: Lecithin 3g/l, polysorbate 80 30g/l, sodium thiosulphate 5g/l, L-histidine1g/l, saponin 30g/l, phosphate buffer powder 0.35g/l Actual test temperature: 24.1°C Test organism: E. hirae ATCC 10541 Incubation temperature: 36°C ± 2°C Interfering substances: 3g/l Bovine albumin Date of Test: 08 Sep 16 Signature: K. WON Edward Webber Person responsible: Diluent used for product test solutions: Standard Hardness Water

Appearance of product test solutions: Clear pale blue liquid

Validation and Controls

Validation suspension (Nv₀)	Experimental Conditions Control (A)	Neutraliser Control (B)	Method Validation (C) Prod conc: 1:6		
Vc1 71 χ =69	Vc1 67 χ=65	Vc1 74 χ =71	Vc1 45 χ =57		
Vc2 67	Vc2 62	Vc2 67	Vc2 68		
$30 \le \chi \text{ of } Nv_0 \le 160?$ Yes χ No	χ of A is ≥ 0.5 x χ of Nv ₀ ? Yes χ No	χ of B is $\geq 0.5 \times \chi$ of Nv ₀ ? Yes χ No	χ of C is $\geq 0.5 \times \chi$ of Nv ₀ ? Yes χ No		

Test suspension and test

Test suspension	N	Vc1	Vc2	χ wm = 245 x 10 ⁶ ; IgN= 8.39
(N and N ₀):	10-6	261	223	$N_0 = N/10; IgN_0 = 7.39$
	10-7	30	25	7.17 ≤ lg N₀ ≤ 7.70? Yes X No

Conc of the product	Vc1	Vc2	Na = χ x10	lgNa	lgR	Contact time
1:6	<14	<14	<140	<2.15	>5.24	5 minutes

Page 7 of 8

NOTE 1: The results relate only to the sample which was tested and cannot be guaranteed to represent the batch from which it was taken.

Title Microbiological Services and Consultancy Microbiological Services and Consultancy Microbiological Analysis Based on EN Quantitative suspension test for the ev chemical disinfectants and antiseptics (Phase 2 / Step 1)			Doc No.	TRB-2	016-124-02	
		test for the evaluation	(2009) tion of bac	ctericidal	activity of	
Product	CondenCide	MGS No	224136	SO No	5786	4393

Explanations:

- Vc = count per plate (one plate or more)
- χ = average of Vc1 and Vc2 (1. + 2. duplicate)
- χ wm = weighed mean of χ
- $R = reduction (IgR = IgN_0 IgNa)$
- Na = number of survivors in the test mixture
- N = number of cells in the test suspension
- No =N/10
- Nv = number of cells in the validation suspension
- $Nv_0 = Nv/10$

All test results have an associated uncertainty of measurement; for this test the expanded uncertainty is based on the estimated uncertainty multiplied by a coverage factor K=2 providing a level of confidence of approximately 95%. The uncertainty evaluation has been assessed in accordance with MGS laboratories' UKAS Accreditation and is available on request.

NOTE 1: The results relate only to the sample which was tested and cannot be guaranteed to represent the batch from which it was taken.

	ABORATORI	Itancy		Doc No.		016-125-02		
ītle	Microbiological Analys Chemical disinfectants the evaluation of fung disinfectants and antis institutional areas- Tes	UKAS UKAS 4393						
Product	CondenCide		MGS No	24136	SO No	5786		
a) Identificat	ion of test laboratory:							
Test laborato	ry		rt shire					
b) Identificat	ion of the Customer:							
Customer Na	me	Advan	ced Enginee	ring Ltd				
Customer Ad	dress ion of the sample:	Guardi Stroud Basing Hamps RG24	istoke shire					
Name of prod	luct	Conde	nCide					
Batch numbe available)	r (and expiry date if	N/A						
Manufacturer	(or supplier)	Advan	ced Enginee	ring Ltd				
Date of delive	ery	01 Sep 16						
Storage cond	itions	Room	temperature	and darknes	SS			
Product diluer manufacturer	nt recommended by the for use	Not sta	ated					
Active substa concentration	nce(s) and their (s) (optional)	Didecy (0.173)		nmonium ch	loride - Pr	e-diluted: 6.25	ig/100g	
Appearance of	of the product	Clear p	pale blue liqu	lid				
d) Test meth	od and its validation:							
MGS procedu	ure reference	WIN-1	000.051-05					
Method		Dilutio	n neutralisat	ion				
Neutraliser						n thiosulphate uffer powder 0.		
Details of vali	dation of the neutraliser	Neutra A1: 20		on performed	d accordin	ig to 5.5.2 of E	N 1650:2008 +	

Page 1 of 6

NOTE 1: The results relate only to the sample which was tested and cannot be guaranteed to represent the batch from which it was taken.

							T			
	ABORATOR obiological Services and Const	ultancy		Doc No.		016-125-02				
Title	Microbiological Analy Chemical disinfectant the evaluation of fung disinfectants and anti institutional areas- Te									
Product	CondenCide		MGS No	24136	SO No	5786	4000			
e) Experimer	ntal conditions:									
Period of ana		09 Sep	16 to 13 Se	ep 16						
Product diluer	nt used during the test	Standa	rd Hardness	s Water						
Product test of	concentrations	1:6 Dilu	ution (1 part	product: 6 p	arts water	.)				
Appearance of	of product dilutions	Clear p	ale blue liqu	uid						
Contact time		15 min	utes ± 10s							
Test tempera	ture range	20°C ±	20°C ± 2°C							
Interfering sul	bstance	0.3g/l Bovine albumin								
Stability and a mixture	appearance of the	Precipi	Precipitate absent throughout test							
Temperature	of incubation	30°C ±	30°C ± 2°C							
Identification used	of the fungal strains		Aspergillus brasiliensis ATCC 16404 Candida albicans ATCC 10231							
f) Results:										
Test results		1) 2)		nd validation of fungicida		cidal activity				
g) Conclusio	n:	tested f	Based on EN 1650:2008 + A1:2013, the product CondenCide, when tested 1 part product: 6 parts water, possesses fungicidal activity in 15 minutes at 20°C under clean conditions for the referenced strains of <i>C. albicans</i> and <i>A. brasiliensis</i>							
h) Deviations		None								
i) Comments		This rep	oort replace	s TRB-2016-	-122-01					
Re-issued by Name: Linda	wind our	mes		oproved by: ame: Kim Mo		25				
Position: Lab	ooratory Manager		Po	osition: Tecl	nnical Dire	ector				
Date:	22 SEP 16		Da	ate: 22	SZPIL					

Page 2 of 6

NOTE 1: The results relate only to the sample which was tested and cannot be guaranteed to represent the batch from which it was taken.

	LABORATOR		Doc No.	TRB-2	016-125-02	
Title	Microbiological Analys Chemical disinfectants the evaluation of fungio disinfectants and antis institutional areas- Tes	and antiseptics- G cidal or yeasticidal eptics used in food	Quantitative activity of education of a construction of a construc	suspensi chemical , domesti	ic and	UKAS UKAS TESTING 4393
Product	CondenCide	MGS No	24136	SO No	5786	

The MGS procedure WIN-1000.051 is a laboratory method based on the EN 1650:2008 + A1:2013 standard; the minor deviations from the standard, which do not affect the overall results, are detailed below:

- Mould spores have been validated for storage at 2-8°C beyond the date of preparation
- Yeast suspensions are prepared by swabbing plates and adding to 9ml diluent to form a suspension, rather than adding loopfuls of organism to 10ml diluent with beads, shaking for 3 minutes, aspirating and adding to a new container. Swabbing forms a smooth suspension removing the need to shake with beads.
- EN 1650 states an allowed tolerance of 30°C ±1°C, MGS laboratories equipment is validated to ±2°C therefore MGS procedures state ±2°C.
- The laboratory is regulated at 20°C; therefore for testing at 20°C a water bath is not used.
- Preparation of hard water is based on the most recently issued standard rather than taking into account minor sterilisation differences between methods
- The incubation period may be extended to a maximum of 4 days (6 for mould) due to business hours
- All tests performed include validation of neutralisation, but the neutraliser is not always pre-proved.
- Any part of the method may be altered to meet customer requirements; MGS does not insist on testing the standard conditions or three concentrations of product with replicates of the limiting organism

Page 3 of 6

NOTE 1: The results relate only to the sample which was tested and cannot be guaranteed to represent the batch from which it was taken.

	ABORATO			Doc No.	TRB-20	16-125-02	
Title	Microbiological An Chemical disinfect the evaluation of fu disinfectants and a institutional areas-	ants and an ingicidal or intiseptics u	tiseptics- Q yeasticidal used in food	uantitative activity of o I, industrial,	suspension chemical , domestion	c and	UKAS UKAS 4393
Product	CondenCide		MGS No	24136	SO No	5786	
Number of plat Neutraliser: Lee Actual test tem Test organism: Incubation tem	isation method	/1 16404		Spread Ilphate 5g/l, I] 1g/l, saponin 3	30g/l, phosphate
Date of Test:	09 Sep 16				-1 -		
Person respons	sible: Edward Web	ober	Sigr	nature: E.	NO	~	

Diluent used for product test solutions: Standard Hardness Water Appearance of product test solutions: Clear pale blue liquid

Validation and Controls

Presence of a high concentration of *A. brasiliensis* spiny spores in the spore suspension Yes X No

Valida (Nv₀)	ation su	spension			mental Neutraliser Control (B)		Neutraliser Control (B) Method Validatio Prod conc: 1:6				
Vc1	41	X =45	Vc1	38	x =42	Vc1	42	x =42	Vc1	51	χ =49
Vc2	49	1	Vc2	46		Vc2	42		Vc2	47	
30 ≤ x Yes	x of Nv₀ :	≤ 160? No			x χ of Nv₀? No	χ of E Nv₀? Yes	3 is ≥ 0.	5 x χ of No	χ of C Nvo? Yes	is ≥ 0.5 X	x χ of No

Test suspension and test

Test suspension	N	Vc1	Vc2	$\chi = 29 \times 10^6$; IgN= 7.46		
(N and N₀):	10 ⁻⁵	>165	>165	$N_0 = N/10$; $IgN_0 = 6.46$		
	10-6	31	26	6.17 ≤ lg N₀ ≤ 6.70?	Yes X	No

Conc of the product	Vc1	Vc2	Na = χ x10	lgNa	lgR	Contact time
1:6	<14	<14	<140	<2.15	>4.31	15 minutes

Page 4 of 6

NOTE 1: The results relate only to the sample which was tested and cannot be guaranteed to represent the batch from which it was taken.

	ABORATORIES		Doc No.	TRB-20	016-125-02	
Title	Microbiological Analysis Base Chemical disinfectants and an the evaluation of fungicidal or disinfectants and antiseptics u institutional areas- Test metho	tiseptics- Q yeasticidal used in food	uantitative activity of o , industrial	suspensi chemical , domesti	c and	UKAS UKAS 1ESTING 4393
Product	CondenCide	MGS No	24136	SO No	5786	
Number of plat Neutraliser: Lee Actual test tem Test organism: Incubation tem Interfering subs Date of Test: Person response Diluent used for	lisation method Pour pla res: 1 / ml cithin 3g/l, polysorbate 80 30g/l, so buffer powder 0.35g/l perature: 23.2°C c <i>C. albicans</i> ATCC 10231 perature: 30°C ± 2°C stances: 0.3g/l Bovine albumin 09 Sep 16	لـــــا odium thiosu Sign Hardness W	ature: <u>E</u>	L-histidine		30g/l, phosphate

Validation and Controls

Valida (Nv ₀)	ation su	spension	1	imental tions Co	ontrol (A)	Neut	raliser	Control (B)		od Valid	lation (C)
Vc1	71	x =71	Vc1	55	x =63	Vc1	74	x =78	Vc1	63	χ =68
Vc2	70		Vc2	70		Vc2	81		Vc2	72	
$VC2$ 70 $VC2$ 70 $30 \le \chi$ of Nv ₀ ≤ 160 ? χ of A is $\ge 0.5 \times \chi$ of NYes χ No			χ of E Nv₀? Yes	3 is ≥ 0. X	5 x	χ of C Nv₀? Yes	is ≥ 0.5 X	x χ of No			

Test suspension and test

Test suspension	N	Vc1	Vc2	χ wm = 274 x 10 ⁵ ; IgN= 7.44
(N and N ₀):	10 ⁻⁵	282	275	$N_0 = N/10; IgN_0 = 6.44$
	10 ⁻⁶	24	21	6.17 ≤ lg N₀ ≤ 6.70? Yes X No

Conc of the product	Vc1	Vc2	Na = x x10	IgNa	lgR	Contact time
1:6	<14	<14	<140	<2.15	>4.29	15 minutes

Page 5 of 6

NOTE 1: The results relate only to the sample which was tested and cannot be guaranteed to represent the batch from which it was taken.

mgs	LABORATORI	ES	Doc No.	TRB-2	016-125-02	
Title	Microbiological Analys Chemical disinfectants the evaluation of fungi disinfectants and antis institutional areas- Tes	and antiseptics- G cidal or yeasticidal septics used in food	Quantitative activity of education of educat	suspensi chemical , domesti	ic and	
Product	CondenCide	MGS No	24136	SO No	5786	

Explanations:

Vc = count per plate (one plate or more)

x = average of Vc1 and Vc2 (1. + 2. duplicate)

 χ wm = weighted mean of χ

R = reduction ($IgR = IgN_0 - IgNa$)

Na = number of survivors in the test mixture

Nv = number of cells in the validation suspension

 $Nv_0 = Nv/10$

All test results have an associated uncertainty of measurement; for this test the expanded uncertainty is based on the estimated uncertainty multiplied by a coverage factor K=2 providing a level of confidence of approximately 95%. The uncertainty evaluation has been assessed in accordance with MGS laboratories' UKAS Accreditation and is available on request.

Page 6 of 6

NOTE 1: The results relate only to the sample which was tested and cannot be guaranteed to represent the batch from which it was taken.

	ICABORATOR	sultancy		Doc N		TRA-20	016-081-01			
Title	industrial, domestic and institutional areas (Phase 2 / Step 2)									
Product	CondenCide		MGS No	24136		SO No	5786			
a) Identifica t	tion of test laboratory:									
Test laborato	pry	Unit 2	shire							
b) Identifica t	tion of the Customer:									
Customer Na	ame	Advar	nced Engine	ering Ltd						
Customer Ad	ldress	Strou								
c) Identifica t	tion of the sample:	NG24	ONL							
Name of proc	duct	Cond	enCide							
Batch numbe	er	N/A								
Manufacture	r	Advar	nced Engine	ering Ltd						
Date of delive	ery	01 Se	p 16							
Storage cond	ditions	Room	temperatur	e and darknes	SS					
	ance(s) and their n(s) (optional)	Not st	ated							
d) Test meth	nod and its validation:		yl dimethyl a 3mol/L).	ammonium ch	lori	de - Pre-	diluted: 6.25g/	100g		
MGS proced	ure reference	WIN-	000.058-08							
Neutraliser				sorbate 80 30 osphate buffer				g/l, L-histidine1g/		
	idation of the neutraliser		aliser validat 7: 2015	tion performed	d ac	cording	to 5.5.2.3 and	5.5.2.4 of EN		
e) Experime	ntal conditions:									
Period of ana	alysis	08 Se	p 16 to 19 S	Sep 16						
Draduat dilua	ent used during the test	Hard	water ≤375n							

Page 1 of 5

NOTE 1: The results relate only to the sample which was tested and cannot be guaranteed to represent the batch from which it was taken.

	ICABORATO	Consultancy			c No.		016-081-01	
Title	Microbiological A Quantitative non- and/or fungicidal industrial, domes (Phase 2 / Step 2)	oorous su activity of	Irface test f f chemical (for the eva disinfecta	luatio	on of bac sed in foc	tericidal od,	UKAS TESTING 4393
Product	CondenCide		MGS No	24136	SO No	5786		
Product test	concentrations							
Appearance	of product dilutions	Clear	colourless	solution				
Contact time)		eria: 5 minut i: 15 minutes					
Test tempera	ature range	18-25	5°C					
Actual test te	emperatures	Enter Stapl Pseu Cano	erichia coli rococcus hir nylococcus a domonas ae lida albicans rgillus brasil	aureus eruginosa s		23.1°C 23.1°C 23.1°C 23.1°C 23.1°C 23.0°C 23.1°C		
Interfering s	ubstance	3.0g/	I Bovine alb	umin				
Stability of the	he mixture	Preci	pitate abser	nt througho	out tes	t		
Temperature	e of incubation		eria: 36°C ± i: 30°C ± 2°					
Identificatior fungal strain	n of the bacterial and is used	Enter Stap Pseu Cano	erichia coli rococcus hir hylococcus idomonas a dida albicans ergillus brasi	aureus eruginosa s		ATCC 105 ATCC 105 ATCC 653 ATCC 154 ATCC 102 ATCC 102	541 38 442 231	
Identification	n of the test surface	Stain	iless steel G	Grade 304				
f) Results:								
Test results		See	tables: 1 & 2	2				
g) Conclus	ion:	Based on EN 13697 (2015), the batch supplied of the product CondenCide when tested 1 part product: 6 parts water, possesses bactericidal activity on surfaces in 5 minutes at 25°C under dirty conditions for the referenced strains of <i>E. coli</i> , <i>E. hirae</i> , <i>S. aureus</i> and <i>P. aeruginosa</i> ; and possesses fungicidal activity in 15 minutes at 20°C under dirty conditions for the referenced strains of <i>C. albicans</i> and <i>A. brasilensis</i>						
h) Deviatio	ns:	None	e					
i) Commen	ts:	None						

Page 2 of 5

NOTE 1: The results relate only to the sample which was tested and cannot be guaranteed to represent the batch from which it was taken.

	LABORATOR licrobiological Services and Cons	sultancy	Doc N		016-081-01	
Title	Microbiological Anal Quantitative non-por and/or fungicidal act industrial, domestic (Phase 2 / Step 2)	ous surface test f ivity of chemical of	or the evaluation of the evalu	ation of bac	tericidal od,	UKAS TESTING 4393
Product	CondenCide	MGS No	24136	SO No	5786	

Prepared by: Vinda James	Approved by:
Name: Linda James	Name: Kim Morwood
Position: Laboratory Manager	Position: Technical Director
Date: 22 Sep 16	Date: 22 See 16
Locality: Hampshire, United Kingdom.	Locality: Hampshire, United Kingdom.

The MGS procedure WIN-1000.058 is a laboratory method based on the EN 13697 (2015) standard; the minor deviations from the standard, which do not affect the overall results, are detailed below:

- Temperature tolerance of ±2°C rather than ±1°C. Validations are performed in tandem with the test, if the temperature has an adverse effect this would be reflected in the validations and the test would be invalid.
- Since the laboratory is maintained at 20°C a water bath is not used for testing at this temperature
 For mould a cryovial bead is added to broth and stored at 2-8°C for a maximum of 7 days; streaks are
- For mould a cryovial bead is added to broth and stored at 2-8°C for a maximum of 7 days, streaks a made from that broth, rather than streaking from stored slopes for 6-9 weeks.
- Organisms are prepared by swabbing plates and adding to diluent which gives a homogenous suspension; rather than adding loopfuls to diluent with beads and vortexing to get a homogenous suspension
- Mould spores have been validated for storage at 2-8°C beyond the date of preparation
- The incubation period may be extended to a maximum of 4 days (6 for mould) due to business hours
- All tests performed include validation of neutralisation; however the neutraliser is not always pre-proved
- Any part of the method may be altered to meet customer requirements; MGS does not insist on testing the standard conditions or three concentrations of product with replicates of the limiting organism

Page 3 of 5

NOTE 1: The results relate only to the sample which was tested and cannot be guaranteed to represent the batch from which it was taken.

		4393
TRA-2016-081-01	ivity of chemical	5786
Doc No.	ıl and/or fungicidal act nstitutional areas	SO No
	2015) valuation of bactericida ustrial, domestic and ii	24136
	Microbiological Analysis Based on EN 13697 (2015) Quantitative non-porous surface test for the evaluation of bactericidal and/or fungicida disinfectants and antiseptics used in food, industrial, domestic and institutional areas (Phase 2 / Step 2)	MGS No
MGSLABORATORIES Microbiological Services and Consultancy	Microbiological Analysis Based on EN 13697 (2015) Quantitative non-porous surface test for the evaluation of bactericidal and/or fungicidal activity of chemical disinfectants and antiseptics used in food, industrial, domestic and institutional areas (Phase 2 / Step 2)	CondenCide
MgS LABC	Title	Product

1: Bacterial	
1: Bacterial surface	results
1: Bacterial s	testing
1: Bacterial	surface
ole 1:	
	ble 1:

	Bacterial test	Validation test:	on test:	Water control		Test procedure a	Test procedure at concentrations	
l est organisms	suspension: N	NT	NC	Nc		1:6		
					10-0:	<1, <1		
	000 000	10-3:213,217	10-3: 202, 228	10 ⁻³ : >330, >330	10-1:	<1, <1		
Escherichia coli	10~: >330, >330	10-4:20,23	10-4:26,28	10-4:38,28	10-2:	<1, <1		
ATCC 10536	10'': 10/, 116	10-5:3,3	10-5:2, <1	10-5:8,3	Nd :	<1.00		
	N: /.45	NT: 6.33	NC: 6.34	Nc: 6.52	Nts :	4		
					 К	>5.52		
					10-0:	<1, <1		
	000 LJC - 000		10 ⁻³ : >330, >330	10-3: >330, >330	10-1:	4, <1		
Enterococcus hirae	10-0: 25/, 290		10-4:68,64	10-4:73,68	10 ⁻² :	<1, <1		
ATCC 10541	10': 24, 28	10-5:7,9	10-5:9, 3	10-5:7,3	.: pN	<1.00		
	N: 0.04		NC: 6.82	Nc: 6.85	Nts :	V		
					 Ƙ	>5.85		
					10-0:	<1, <1		
	100 000 901	-330	10-3: >330, >330	10-3: >330, >330	10-1 :	<1, <1		
Stapnylococcus	10 ⁻⁰ : 329, 28/		10-4:102,105	10-4:70,90	10-2:	<1, <1		
aureus	10-1:28, 30	10-5:6,9	10-5:10,12	10-5:14,13	: pN	<1.00		
A1CC 0038	N. 0.03		NC: 7.02	Nc: 6.92	Nts :	<1		
					 œ	>5.92		
					10-0:	<1, <1		
	40.6.00r 00r	10-3: 39, 52	10 ⁻³ : 93, 101	10-3:201,198	10-1 :	<1, <1		
Fseudomonas	10~: 280, 280	10-4:5.5	10-4:7,14	10-4:27,18	10-2 :	<1, <1		
aeruginosa	10-': ZU, 3/	10-5: <1, <1	10-5: <1, <1	10-5:1,3	Nd :	<1.00		
AICC 10442	N. 0.00	NT: 5.66	NC: 6.00	Nc: 6.31	Nts :	V		
					 Ƙ	>5.31		

NOTE 1: The results relate only to the sample which was tested and cannot be guaranteed to represent the batch from which it was taken.

NOTE 2: This report may not be reproduced except in full, without written approval of MGS Laboratories Ltd.

Page 4 of 5

ø			4393
	TRA-2016-081-01	ivity of chemical	5786
	Doc No.	al and/or fungicidal act institutional areas	SO No
		I EN 13697 (2015) set for the evaluation of bactericidal and/or fungicida in food, industrial, domestic and institutional areas	24136
		Microbiological Analysis Based on EN 13697 (2015) Quantitative non-porous surface test for the evaluation of bactericidal and/or fungicidal activity of chemical disinfectants and antiseptics used in food, industrial, domestic and institutional areas (Phase 2 / Step 2)	MGS No
ATODICO	Microbiological Services and Consultancy	Microbiological Analysis Based on Quantitative non-porous surface te disinfectants and antiseptics used (Phase 2 / Step 2)	CondenCide
	Microbiologica	Title	Product

Table 2. Fundal curface testing results

- Fundal test	Fungal test	Validati	Validation test:	Water control		Test procedure at concentrations	ns
Test organisms	suspension: N	N	NC	Nc		1.6	
					10-0:	<1, <1	
	10-5. 1000 1000	10 ⁻² : 172, 220	10-2:147,175	10-2:266,274	10-1:	<1, <1	
Candida albicans	10°. / 330, / 330	10 ⁻³ : 16, 15	10-3: 15, 22	10-3:24,24	10-2:	<1, <1	
ATCC 10231	N - 6 04	10-4:4,3	10-4:4,1	10-4:3,2	. pN	<1.00	
	N . 0.04	NT: 5.28	NC: 5.21	Nc: 5.43	Nts :	<u>۲</u>	
					 Ƙ	>3.28	
					10-0:	3,2	
A	40-5.464 460	10 ⁻² : >165, >165	10 ⁻² : >165, >165	10 ⁻² : >165, >165	10-1:	<1, <1	
Asperglilus	10 - 104, 100	10-3:41,36	10-3:73,51	10-3:58,63	10-2 :	<1, <1	
Drasiliensis	10-0: 24, 20	10-4:14,10	10-4:14,13	10-4:13,15	. pN	1.48	
AI00 10404	10.C . N	NT: 5.64	NC: 5.82	Nc: 5.81	Nts :	< <u>-</u>	
					 Ƙ	4.33	

Weighted means are used in all calculations where appropriate.

- = log₁₀ number of cfu applied to test surface;
- = log₁₀ number of cfu per test surface of the neutralisation test;
- = log₁₀ number of cfu per test surface of the neutralisation control;
 - = log₁₀ number of cfu per test surface of the water control;
- = log₁₀ number of cfu per test surface of the disinfectant test;
- = number of residual colony forming units remaining on the test surface;
 - = Log Reduction achieved.

coverage factor K=2 providing a level of confidence of approximately 95%. The uncertainty evaluation has been assessed in accordance with MGS laboratories' All test results have an associated uncertainty of measurement; for this test the expanded uncertainty is based on the estimated uncertainty multiplied by a UKAS Accreditation and is available on request.

Page 5 of 5

NOTE 1: The results relate only to the sample which was tested and cannot be guaranteed to represent the batch from which it was taken.

	LABORATORI		Doc No.	TRB-20	016-126-02		
ītle	Microbiological Analys Chemical Disinfectant the Evaluation of Bact and Requirements (ph	and Antiseptics - Quericidal Activity in th	antitative	Suspensi Area - Te	ion Test for st Method	UKAS UKAS 4393	
Product	CondenCide	MGS No	24136	SO No	5786	4393	
a) Identific a	ation of test laboratory:						
Test laboral	tory	MGS Laboratories L Unit 20 Hoeford Poin Barwell Lane Gosport Hampshire PO13 0AU					
b) Identific	ation of the Customer:						
Customer N	lame	Advanced Engineeri	ng Ltd				
Customer A	address	Guardian House Stroudley Rd Basingstoke Hampshire RG24 8NL					
Name of pro	oduct	CondenCide					
Batch numb available)	per (and expiry date if	N/A					
Manufactur	er	Advanced Engineer	ng Ltd				
Date of deli	very	01 Sep 16					
Storage cor	nditions	Room temperature and darkness					
Product dilu manufacture	lent recommended by the er for use	Not stated					
	tance(s) and their on(s) (optional)	Didecyl dimethyl am (0.173mol/L).	monium ch	loride - Pr	e-diluted: 6.25g	/100g	
Appearance	e of the product	Clear pale blue liquid					
d) Test met	thod and its validation:						
MGS proce	dure reference	WIN-1000.053-05					
Method		Dilution neutralisatio	n				
Neutraliser		Lecithin 3g/l, polyson histidine1g/l, saponin					
Details of va	alidation of the neutraliser	Neutraliser validation	n performe	d accordin	g to 5.5.2 of EN	I 13727:2012.	

Page 1 of 7

NOTE 1: The results relate only to the sample which was tested and cannot be guaranteed to represent the batch from which it was taken.

	ABORATOR			Doc No.	TRB-20	016-126-02		
Title	Microbiological Analy Chemical Disinfectant the Evaluation of Bac and Requirements (ph	sis Based t and Antis tericidal A	septics - Qua Activity in the	intitative	Suspensi Area - Tes	ion Test for st Method		
Product	CondenCide		MGS No	24136	SO No	5786	4393	
e) Experimer	tal conditions:			** 1 0 = 1: *				
Period of ana		05 Sep	16 16 to 15 S	ep 16				
Product dilue	nt used during the test	Standar	d Hardness V	Vater				
Product test of	concentrations	1:6 Dilu	tion (1-part pr	oduct:6 pa	arts water)			
Appearance of	of product dilutions	Clear pa	ale blue liquid					
Contact time		1 minute	e ± 10s					
Test tempera	ture range	20°C ± 2	2°C					
Interfering su	vine albumin +	- 3ml/l bloc	od erythro	cytes				
Stability and appearance of the mixture Precipitate absent throughout test								
Temperature of incubation 36°C ± 2°C								
Identification used	ion of the bacterial strains <i>Pseudomonas aeruginosa</i> ATCC 15442 <i>Staphylococcus aureus</i> ATCC 6538 <i>Enterococcus hirae</i> ATCC 10541							
f) Results:								
Test results		/		ontrols and validation valuation of bactericidal activity				
g) Conclusio) Conclusion: Based on EN 13727 (2012), the product CondenCide, when ter 1 part product:6 parts water, possesses bactericidal activity in at 20°C under dirty conditions for the referenced strains of <i>P. aeruginosa, S. aureus</i> and <i>E. hirae.</i>					tivity in 1 minute		
h) Deviations	5:	This rep	oort replaces T	FRB-2016-	-126-01			
Re-issued by	" Unda Jan	res	Арри	roved by:		250		
Name: Linda	James		Nam	ie: Kim Mo	brown			
Position: Lab	poratory Manager		Posi	tion: Tech	nnical Dire	ector		
Date:	22 SEP16		Date	: 22 5	SPIL			

Page 2 of 7

NOTE 1: The results relate only to the sample which was tested and cannot be guaranteed to represent the batch from which it was taken.

	LABORATORI		Doc No.	TRB-2	016-126-02	
Title	Microbiological Analys Chemical Disinfectant the Evaluation of Bact and Requirements (pha	and Antiseptics - Quericidal Activity in th	antitative	Suspens Area - Te	ion Test for st Method	
Product	CondenCide	MGS No	24136	SO No	5786	4393

The MGS procedure WIN-1000.53 is a laboratory method based on the EN 13727 (2012) standard; the minor deviations from the standard, which do not affect the overall results, are detailed below:

- Any part of the method may be altered to meet customer requirements; MGS does not insist on testing the standard conditions or three concentrations of product with replicates of the limiting organism.
- EN 13727states an allowed tolerance of 36°C ±1°C or 37°C±1°C, MGS laboratories equipment is validated to ±2°C therefore MGS procedures state ±2°C.
- Organisms are prepared by swabbing plates and adding to 9ml diluent to form a suspension, rather than adding loopfuls of organism to 10ml diluent with beads, shaking for 3 minutes, aspirating and adding to a new container. Swabbing forms a smooth suspension removing the need to shake with beads.
- The laboratory is regulated at 20°C; therefore for testing at 20°C a water bath is not used.
- Preparation of hard water is based on the most recently issued standard rather than taking into account minor sterilisation differences between methods.
- Plates are incubated for the full time rather than performing an interim read; in addition the incubation period may be extended to a maximum of 4 days due to business hours.
- All tests performed include validation of neutralisation, but the neutraliser is not always pre-proved

NOTE 1: The results relate only to the sample which was tested and cannot be guaranteed to represent the batch from which it was taken.

	ABORATORIES		Doc No.	TRB-20)16-126-02	
Title	Microbiological Analysis Base Chemical Disinfectant and Ant the Evaluation of Bactericidal and Requirements (phase 2 / s	tiseptics - Qu Activity in the	antitative			
Product	CondenCide	MGS No	24136	SO No	5786	4393
Number of plat Neutraliser: Actual test tem Test organism: Incubation tem Interfering subs Date of Test: Person respons Diluent used fo Appearance of	lisation method Pour pla es: 1 / 0.1 ml Lecithin 3g/l, polysorbate 80 30g phosphate buffer powder 0.35g/l perature: 23.5°C <i>P. aeruginosa</i> ATCC 15442 perature: 36°C ± 2°C stances: 3.0ml/l sheep erythrocyte	/I, sodium thio s and 3.0g/l B Signature: ⊭ Hardness Wa blue liquid	ovine albur 	g/I, L-histi] dine1g/l, sapo	nin 30g/l,

Validation suspension NvR0, NvB and Test suspension (NR0)

Va		suspension VR0)	Validation suspension (Nv _B)	N _R	10-7	10 ⁻⁸	$\chi = 39 \times 10^8$ Log N _R = 9.59
Vc1 Vc2	94 97	X = 96	Nv _B = 9.6 x x10 ⁴ (Nv _B = Nv _{R0} x 1000)	Vc1	>330	38	$N_{0R} = N_R/100; \ IgN_{0R} = 7.59$ 7.17 $\leq IgN_{0R} \leq 7.70?$
30 ≤) Yes	(of NvRo X No	≤ 160	$3 \times 10^4 \le Nv_B \le 1.6 \times 10^5$ Yes X No	Vc2	>330	39	Yes X No

Controls

Experimental Conditions Control (A)			Neutra	aliser Cont Contro	trol / Filtration I (B)	Method Validation (C) Prod conc: 1:6		
Vc1	55		Vc1	76	75	Vc1	88	00
Vc2	61	_ χ =58	Vc2	74	χ =75	Vc2	92	X =90
$\begin{array}{c c} \chi \text{ of A is} \geq 0.5 \text{ x } \chi \text{ of Nv}_{R0}? \\ Yes \qquad \chi \qquad No \qquad \end{array}$		χ of B is Yes	≥0.5 x x o	f Nv _{R0} ?		≥ 0.5 x x o x No	of Nv _{R0} ?	

Test

Conc of the product	Dilution	Vc1	Vc2	Na = χ x10	lgNa	lgR	Contact time
1:6	10 ⁰	<14	<14		.0.45		
	10 ⁻¹	<14	<14	<140	<2.15	>5.44	1 minute

Page 4 of 7

NOTE 1: The results relate only to the sample which was tested and cannot be guaranteed to represent the batch from which it was taken.

	ABORATORIES		Doc No.	TRB-20)16-126-02	_
Title	Microbiological Analysis Based Chemical Disinfectant and Antis the Evaluation of Bactericidal A and Requirements (phase 2 / st	septics - Qu ctivity in the	antitative			
Product	CondenCide	MGS No	24136	SO No	5786	4393
Number of plat Neutraliser: Actual test tem Test organism: Incubation tem Interfering subs Date of Test: Person response Diluent used fo	lisation method Pour plat es: 1 / 0.1 ml Lecithin 3g/l, polysorbate 80 30g/l phosphate buffer powder 0.35g/l perature: 21.9°C <i>S. aureus</i> ATCC 6538 perature: 36°C ± 2°C stances: 3.0ml/l sheep erythrocytes 13 Sep 16	نيسا , sodium thio and 3.0g/l B Signature: ۲ lardness Wa	ovine albui	g/I, L-histi] dine1g/l, sapo	nin 30g/l,

Validation suspension Nv_{R0}, Nv_B and Test suspension (N_{R0})

Validation suspension (Nv _{R0})		and the second statement of the second se	Validation suspension (Nv _B)	NR	10 ⁻⁷	10 ⁻⁸	$\chi = 40 \times 10^8$ Log N _R = 9.60	
Vc1	86	70	Nv _B = 7.90 x10 ⁴		> 220	33	$N_{0R} = N_R/100; IgN_{0R} = 7.60$	
Vc2 72 X = 79		$\chi = 79$	(Nv _B = Nv _{R0} x 1000)	Vc1	>330	33	$7.17 \le IgN_{0R} \le 7.70?$	
30 ≤ ; Yes [X Of NVRO		$3 \times 10^4 \le \text{Nv}_{\text{B}} \le 1.6 \times 10^5$ Yes X No	Vc2	>330	46	Yes X No	

Controls

Experimental Conditions Control (A)		Neutra	aliser Con Contro	trol / Filtration ol (B)	Method Validation (C)				
					>= 10	Prod co	nc: 1:6		
Vc1	78	× -75	Vc1	62	-70	Vc1	66		
Vc2	72	_ χ =75	Vc2	94	χ =78	Vc2	53	χ =60	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $		χ of B is Yes	≥0.5 x x c	of Nv _{R0} ?	χ of C is $\ge 0.5 \times \chi$ of NVR0? Yes χ				

Test

Conc of the product	Dilution	Vc1	Vc2	Na = χ x10	lgNa	lgR	Contact time
1:6	10 ⁰	<14	<14		0.45	5.45	
	10-1	<14	<14	<140	<2.15	>5.45	1 minute

Page 5 of 7

NOTE 1: The results relate only to the sample which was tested and cannot be guaranteed to represent the batch from which it was taken.

	ABORATORIES		Doc No.	TRB-20)16-126-02	
Title	Microbiological Analysis Based Chemical Disinfectant and Antis the Evaluation of Bactericidal A and Requirements (phase 2 / st					
Product	CondenCide	MGS No	24136	SO No	5786	4393
Test organism: Incubation tem Interfering subs Date of Test: Person respons Diluent used fo	isation method Pour plate es: 1 / 0.1 ml Lecithin 3g/l, polysorbate 80 30g/l phosphate buffer powder 0.35g/l perature: 21.9°C <i>E. hirae</i> ATCC 10541 perature: 36°C ± 2°C stances: 3.0ml/l sheep erythrocytes 13 Sep 16	, sodium thios and 3.0g/l Bo Signature: <i>h</i> lardness Wat	ovine albun	g/l, L-histic] dine1g/l, sapo	nin 30g/l,

Validation suspension Nv_{R0} , Nv_B and Test suspension (N_{R0})

Va		suspension	Validation suspension (Nv _B)	N _R	10 ⁻⁷	10 ⁻⁸	χ wm = 169 x 10 ⁷ Log N _R = 9.23
Vc1	31		Nv _B = 3.20 x10 ⁴		101		$N_{0R} = N_R/100$; $IgN_{0R} = 7.23$
VEST		$\chi = 32$	(Nv _B = Nv _{R0} x 1000)	Vc1	184	14	$7.17 \le IgN_{0R} \le 7.70?$
30 ≤) Yes [X No		$3 \times 10^4 \le Nv_B \le 1.6 \times 10^5$ Yes X No	Vc2	160	14	Yes X No

Controls

Experimental Conditions Control (A)		Neutra	aliser Con Contro	trol / Filtration ol (B)	Method Validation (C) Prod conc: 1:6				
Vc1	23	× -26	Vc1	26		Vc1	27		
Vc2	29	χ =26	Vc2	21	χ =24	Vc2	24	χ =26	
	χ of A is $\geq 0.5 \times \chi$ of Nv _{R0} ?		χ of B is Yes	≥0.5 x x c x No	of Nv _{Ro} ?	χ of C is Yes	s≥0.5 x χ α χ Νο	of Nv _{R0} ?	

Test

Conc of the product	Dilution	Vc1	Vc2	Na = χ x10	lgNa	lgR	Contact time
1:6	10 ⁰	<14	<14				
	10 ⁻¹	<14	<14	<140	<2.15	>5.08	1 minute

Page 6 of 7

NOTE 1: The results relate only to the sample which was tested and cannot be guaranteed to represent the batch from which it was taken.

a characterized with the second se	LABORATORIE		Doc No.	TRB-2	016-126-02	
Title	Microbiological Analysis Chemical Disinfectant a the Evaluation of Bacter and Requirements (phas	nd Antiseptics - Qu ricidal Activity in th	antitative	Suspens Area - Te	ion Test for st Method	
Product	CondenCide	MGS No	24136	SO No	5786	4393

Explanations:

Vc = count per plate (one plate or more)

X = average of Vc1 and Vc2 (1. + 2. duplicate)

 χ wm = weighed mean of χ

 $R = reduction (IgR = IgN_{0R} - IgNa)$

Na = number of survivors in the test mixture

All test results have an associated uncertainty of measurement; for this test the expanded uncertainty is based on the estimated uncertainty, multiplied by a coverage factor K = 2, providing a level of confidence of approximately 95%. The uncertainty evaluation has been assessed in accordance with MGS laboratories' UKAS Accreditation and is available on request.

Page 7 of 7

NOTE 1: The results relate only to the sample which was tested and cannot be guaranteed to represent the batch from which it was taken.



BS EN 14476:2013+A2:2019

Study Title: Quantitative suspension test for evaluation of virucidal activity in the medical area (Phase 2 Step1)

Microbiological Solutions Limited (MSL) Gollinrod, Walmersley, Bury, BL9 5NB, UK

Angela Davies, CEO

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<u>Scope</u>

The standard method BS EN 14476 describes a test method and the minimum requirements for virucidal activity of a chemical disinfectant and antiseptic products that form a homogenous physically stable preparation when diluted with hard water – or in the case of ready to use products that are not diluted when applied, - with water. Products can only be tested at a concentration of 80% (97% with a modified method for special cases) as some dilution is always produced by adding the test organisms and interfering substances. This European Standard applies to products that are used in the medical area in the fields of hygienic handrub, hygienic handwash, instrument disinfection by immersion, surface disinfection by wiping, spraying, flooding or other means and textile disinfection.

This European standard applies to areas and situations where disinfection is medically indicated. Such indication occurs in patient care, for example: In hospitals, in community medical facilities and in dental institutions or in clinics of schools, of kindergartens and of nursing homes, and may occur in the workplace and in the home. It may also include services such as laundries and kitchens supplying products directly for patients.

Outline of Test Method (Obligatory Test Conditions)

A sample of the test product is diluted in synthetic hard water in products diluted at point of use or water in the case of ready to use products is added to a test suspension of viruses in a solution of interfering substance. The mixture is maintained at one of the temperatures and contact times specified in the standard. At the end of this contact time, an aliquot is taken; the virucidal action in this portion is immediately suppressed by a validated method (dilutions of the sample in ice-cold cell maintenance medium). The dilutions are transferred into cell culture units either using monolayer or cell suspension. Infectivity tests are done either by plaque test or quantal tests. After incubation, the titres of infectivity are calculated according to Spearman and Käber or by plaque counting. Reduction of virus infectivity is calculated from differences of Ig virus titres before (virus control) and after treatment with the product. The standard minimum spectrum of test organisms is Poliovirus, Adenovirus and Murine Norovirus.

Acceptance Criteria

The product when tested as above shall demonstrate at least a 4 log₁₀ reduction against the test virus. The test is deemed valid where all control requirements are met.

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BS EN 14476:2013+A2:2019

	Test information	Deviation
Name of Product	CondenCide	
Batch Number & Expiry Date	29/06/2025 0082906	
Date of Delivery	13/07/2020	
Period of Analysis	28/07/2020-	
Manufacturer / Supplier	Advanced Engineering Ltd	
Storage Conditions	Ambient	
Appearance of the Product	Pale blue liquid	
Neutralisation Method	Dilution	
Product Diluent	Synthetic hard water	
Test Concentrations	Neat (56700ppm), 1:6 (8110ppm), 1:13 (4050ppm)	
Experimental Conditions	Clean	
Interfering Substance	Clean 0.3g/l Bovine Albumin	
Test Temperature	20°C ± 1°C	
Temperature of Incubation	37°C ±1°C	
Identification of the Viral Strains:	Modified vaccinia virus Ankara (MVA), ATCC VR-1508	
Contact Times	15 minutes <u>+</u> 10s	
Stability and Appearance During Test	No Change Observed (Homogenous)	

Deviations from Standard Method

There were no deviations from the standard method

Test Result Summary

The test product received has achieved to achieve a 4-log reduction against Vaccinia virus, when tested under the condition stipulated in this report.

See page 2 for acceptance criteria and raw data tables below for complete test results.

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Summary

Controls					
MSL					
Conditions SOLUTION PROVIDERS	Concentration	Contact time	log TCID50	log reduction	Control validation
Virus control (water)	N/A	15 minutes	7.71	N/A	Validated
Cytotoxicity (product)	Neat	N/A	3.00	N/A	Validated
Product supression control	Neat	Neat	7.38	0.33	Validated
Reference virus inactivation (formaldyehyde)	1.4%	5 minutes	4.46	3.25	Validated
Reference virus inactivation (formaldyehyde)	1.4%	15 minutes	3.75	3.96	Validated
Cytotoxicity (formaldehyde)	1.4%	N/A	2.50	N/A	Validated

Interference controls	SOLUTION PROVIDERS					
Condition		Concentration	Contact time	log TCID50	Log difference	Control validation
Interference control (unt	reated)	N/A	N/A	8.58	N/A	N/A
Interference control (trea	ated)	Neat	N/A	8.50	0.08	Validated



Test Results	SOLUTION PROVIDERS					
Condition		Concentration	Contact time	log TCID50	log reduction	Pass/Fail
Test product		Neat	15 minutes	3.58	>4	Pass
Test product		1 in 6	15 minutes	3.50	>4	Pass
Test product		1 in 13	15 minutes	3.50	>4	Pass

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Raw data

Virus cont	trol (water)			Contact ti	me	15 minutes		
Dilution	Counts						% CPE	p(1-p)
-2	4	4	4	4	4	4	1	0
-3	4	4	4	4	4	4	1	0
-4	4	4	4	4	4	4	1	0
-5	4	4	4	4	4	4	1	0
-6	4	4	4	4	4	4	1	0
-7	4	4	4	4	4	2	0.91666667	0.076389
-8	2	2	1	0	1	1	0.29166667	0.206597
-9	0	0	0	0	0	0	0	0

Organism	Vacciniavirus	
	ATTC VR-1508	
d	1	
sum px	2.21	
n	8	
SD50	-7.71	
SE	0.20	
хр	-6	

Cytotoxic	ity (produc	t)		Product co	oncentratio	on	Neat	
Dilution	Counts						% CPE	p(1-p)
-2	4	4	4	4	4	4	1	0
-3	2	2	2	2	2	2	0.5	0.25
-4	0	0	0	0	0	0	0	0
-5	0	0	0	0	0	0	0	0
-6	0	0	0	0	0	0	0	0
-7	0	0	0	0	0	0	0	0
-8	0	0	0	0	0	0	0	0
-9	0	0	0	0	0	0	0	0

Product concentration

Neat

% CPE

p(1-p)

Vacciniavirus	
ATTC VR-1508	
1	
1.50	
8	
-3.00	
0.19	
-2	
	ATTC VR-1508 1 1.50 8 -3.00 0.19

Organism	Vacciniavirus	
	ATTC VR-1508	
d	1	
sum px	1.88	
n	8	
SD50	-7.38	
SE	0.21	
хр	-6	

Organism	Vacciniavirus	
	ATTC VR-1508	
d	1	
sum px	2.0833	
n	10	
SD50	-8.583	
SE	0.1746	
хр	-7	

-2	4	4	4	4	4	4	1	0
-3	4	4	4	4	4	4	1	0
-4	4	4	4	4	4	4	1	0
-5	4	4	4	4	4	4	1	0
-6	4	4	4	4	4	4	1	0
-7	2	2	3	3	4	4	0.75	0.1875
-8	1	1	1	0	0	0	0.125	0.109375
-9	0	0	0	0	0	0	0	0
Interferer	nce control	(untreate	d)	Product co	oncentratio	on	Neat	
Dilution	Counts						% CPE	p(1-p)

Interrerer	ice control	(untreated	(ב	Product co	oncentratic	on	Neat	
Dilution	Counts						% CPE	p(1-p)
-1	4	4	4	4	4	4	1	0
-2	4	4	4	4	4	4	1	0
-3	4	4	4	4	4	4	1	0
-4	4	4	4	4	4	4	1	0
-5	4	4	4	4	4	4	1	0
-6	4	4	4	4	4	4	1	0
-7	4	4	4	4	4	4	1	0
-8	4	4	3	4	3	3	0.875	0.109375
-9	1	1	2	1	0	0	0.20833333	0.164931
-10	0	0	0	0	0	0	0	0

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Product supression control

Dilution Counts

Tel: 0844 824 6003 Email: info@mls.io Web: www.msl.io Company number: 4218514

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Raw data

Interferer	terference control (treated)				oncentratio	Neat		
Dilution	Counts						% CPE	p(1-p)
-1	4	4	4	4	4	4	1	0
-2	4	4	4	4	4	4	1	0
-3	4	4	4	4	4	4	1	0
-4	4	4	4	4	4	4	1	0
-5	4	4	4	4	4	4	1	0
-6	4	4	4	4	4	4	1	0
-7	4	4	4	4	4	4	1	0
-8	3	3	3	4	4	4	0.875	0.109375
-9	2	1	0	0	0	0	0.125	0.109375
-10	0	0	0	0	0	0	0	0

Organism	Vacciniavirus						
	ATTC VR-1508						
d	1						
sum px	2						
n	10						
SD50	-8.5						
SE	0.1559						
хр	-7						

Reference	e virus inac	tivation (fo	ormaldyeh	yde)	Contact tir	me	5 minutes	
Dilution	Counts						% CPE	p(1-p)
-2	4	4	4	4	4	4	1	0
-3	4	4	4	4	4	4	1	0
-4	3	3	3	3	3	3	0.75	0.1875
-5	2	2	1	0	0	0	0.20833333	0.164931
-6	0	0	0	0	0	0	0	0
-7	0	0	0	0	0	0	0	0
-8	0	0	0	0	0	0	0	0
-9	0	0	0	0	0	0	0	0

Reference	eference virus inactivation (formaldyehyde)					me	15 minutes	
Dilution	Counts						% CPE	p(1-p)
-2	4	4	4	4	4	4	1	0
-3	4	4	4	4	4	4	1	0
-4	2	2	1	0	1	0	0.25	0.1875
-5	0	0	0	0	0	0	0	0
-6	0	0	0	0	0	0	0	0
-7	0	0	0	0	0	0	0	0
-8	0	0	0	0	0	0	0	0
-9	0	0	0	0	0	0	0	0

Organism	Vacciniavirus	
	ATTC VR-1508	
d	1	
sum px	1.96	
n	8	
SD50	-4.46	
SE	0.22	
хр	-3	

Organism Vacciniavirus					
	ATTC VR-1508				
d	1				
sum px	1.25				
n	8				
SD50	-3.75				
SE	0.16				
хр	-3				

Organism Vacciniavirus					
	ATTC VR-1508				
d	1				
sum px	1.00				
n	8				
SD50	-2.50				
SE	0.00				
хр	-2				

Cytotoxicity (formaldehyde) Dilution Counts 4 -2 4 4 4 4 -3 0 0 0 0 0

-2	4	4	4	4	4	4	1	0
-3	0	0	0	0	0	0	0	0
-4	0	0	0	0	0	0	0	0
-5	0	0	0	0	0	0	0	0
-6	0	0	0	0	0	0	0	0
-7	0	0	0	0	0	0	0	0
-8	0	0	0	0	0	0	0	0
-9	0	0	0	0	0	0	0	0

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Gollinrod Walmersley Bury, BL9 5NB Tel: 0844 824 6003 Email: info@mls.io Web: www.msl.io Company number: 4218514 % CPE

p(1-p)

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Raw data

Test prod	t product Product concentration			Neat Contact time			15 minutes	
Dilution	Counts						% CPE	p(1-p)
-2	4	4	4	4	4	4	1	0
-3	4	4	4	4	4	4	1	0
-4	1	1	0	0	0	0	0.08333333	0.076389
-5	0	0	0	0	0	0	0	0
-6	0	0	0	0	0	0	0	0
-7	0	0	0	0	0	0	0	0
-8	0	0	0	0	0	0	0	0
-9	0	0	0	0	0	0	0	0

Organism	Vacciniavirus				
	ATTC VR-1508				
d	1				
sum px	1.08				
n	8				
SD50	-3.58				
SE	0.10				
хр	-3				

Test prod	uct	Product concentration		1 in 6 Contact time			15 minutes	
Dilution	Counts						% CPE	p(1-p)
-2	4	4	4	4	4	4	1	0
-3	4	4	4	4	4	4	1	0
-4	0	0	0	0	0	0	0	0
-5	0	0	0	0	0	0	0	0
-6	0	0	0	0	0	0	0	0
-7	0	0	0	0	0	0	0	0
-8	0	0	0	0	0	0	0	0
-9	0	0	0	0	0	0	0	0

Vacciniavirus	
ATTC VR-1508	
1	
1.00	
8	
-3.50	
0.00	
-3	
	1 1.00 8 -3.50 0.00

Test produ	oduct Product concentration			1 in 13	1 in 13 Contact time			
Dilution	Counts						% CPE	p(1-p)
-2	4	4	4	4	4	4	1	0
-3	4	4	4	4	4	4	1	0
-4	0	0	0	0	0	0	0	0
-5	0	0	0	0	0	0	0	0
-6	0	0	0	0	0	0	0	0
-7	0	0	0	0	0	0	0	0
-8	0	0	0	0	0	0	0	0
-9	0	0	0	0	0	0	0	0

Organism	Vacciniavirus				
Organisin					
ATTC VR-1508					
d	1				
sum px	1.00				
n	8				
SD50	-3.50				
SE	0.00				
хр	-3				

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<u>KEY</u>

CPE Counts	Cytopathic effect 0-4 indicating degree of cytopathic effect					
counts	0 = No effect, 1 = 25% CPE, 2 = 50% CPE, 3 = 75% CPE, 4 = 100% CPE					
d	Dilution factor (log)					
Sum px	Sum of % CPE from the highest dilution showing 100% CPE to the lowest dilution assessed.					
n	Number of dilutions					
SD50	Dilution showing 50% of the end point according to Spearman-Kärber method					
SE	Standard error					
хр	Lowest dilution showing 100% CPE					
TCID50	Titre causing 50% of the end point according to Spearman-Kärber					
PASS	=	lg R greater than or equal to 4				
FAIL	=	lg R less than 4				
>	greater than		≥	equal to or greater than		
<	less than		≤	equal to or less than		

Calculation notes

In cases where the highest dilution assessed has not shown 100% CPE, the value has been calculated assuming the dilution above this would give 100% CPE and the corresponding value has been assigned as <x.

The standard requires the product suppression control to show a <0.5 log reduction in viral titre. In cases where the product has failed to achieve the required 4 log reduction, but the product suppression control shows a >0.5 log reduction the result has been deemed as valid for fail as the consequence of inadequate suppression would be a partially extended contact time which would generate false positives, but not false negatives.

A similar approach has been taken in regards to the cytotoxicity controls. The standard requires a 4-log difference between the cytotoxicity level and the viral titre. In cases where this is not obtained, but the log reduction observed by the product is within the difference between the cytotoxicity levels and the viral titre the result is deemed acceptable for a fail as there will be no impact on the determination of efficacy.

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