a) **Identification of test laboratory:**	
Test laboratory	MGS Laboratories Ltd Unit 14, Newlands Drive Poyle 14 Horton Road Poyle Berkshire SL3 0DX
b) **Identification of the Customer:**	
Customer Name	Goldshield Industries (Europe) Ltd
Customer Address	2 Victoria Square Victoria Street St Albans AL1 3TF
c) **Identification of the sample:**	
Name of product	Goldshield 24
Batch number (and expiry date if available)	Not stated
Manufacturer (or supplier)	Goldshield Industries (Europe) Ltd
Date of delivery	22 Nov 11
Storage conditions	Room temperature and darkness
Product diluent recommended by the manufacturer for use	Not stated
Active substance(s) and their concentration(s) (optional)	0.1% BAC
Appearance of the product	
d) **Test method and its validation:**	
MGS procedure reference	WIN-1000.050-05
Method	Dilution neutralisation / Membrane filtration
Neutraliser	Lecithin 3g/l, polysorbate 80 30g/l, sodium thiosulphate 5g/l, L-histidine1g/l, saponin 30g/l, phosphate buffer powder 0.35g/l
Rinsing Liquid	Sterile distilled water
Details of validation of the neutraliser	Neutraliser validation performed according to 5.5.2 of EN 1276:2009, no neutraliser could be determined for tests with *Staphylococcus aureus* or *Enterococcus hirae*, therefore

	membrane filtration was used in these instances.
e) **Experimental conditions:**	
Period of analysis	25 Nov 11 – 05 Dec 11
Product test concentrations	Ready to Use (RTU)
Appearance of product dilutions	Cloudy colourless solution
Contact time	5 minutes ± 10s
Test temperature range	20°C ± 2°C
Interfering substance	0.3g/l Bovine albumin
Stability of the mixture	Precipitate absent throughout test
Temperature of incubation	36°C ± 2°C
Identification of the bacterial strains used	*Escherichia coli* NCTC 10418 *Enterococcus hirae* NCIMB 8192 *Staphylococcus aureus* ATCC 6538 *Pseudomonas aeruginosa* ATCC 15442
f) **Results:**	
Test results	1) Controls and validation 2) Evaluation of bactericidal activity
g) **Conclusion:**	Based on EN 1276 (2009), the product Goldshield 24, when tested at RTU, possesses bactericidal activity in 5 minutes at 20°C under clean conditions for the referenced strains of *E. coli*, *E. hirae*, *S. aureus* and *P. aeruginosa*.
h) **Deviations:**	None
i) Special remarks	All controls and validations were within basic limits No precipitate was formed during the test

Prepared By: Helen Duxbury	**Approved by:**
Name: Miss Helen Duxbury BSc (Hons)	**Name:** Mrs Kim Morwood BSc (Hons) CBiol MIBiol
Position: Laboratory Manager	**Position:** Technical Director
Date: 05 Dec 11	**Date:** 05 Dec 11

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.
- A cryovial bead is added to broth and stored at 2-8°C for a maximum of 7 days; streaks are made from these broths, rather than streaking from stored slopes for 6-9 weeks.
- 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.
- Neutraliser is prepared at 8ml and 9ml taking into account required concentrations so that water does not have to be added to 8ml for Test and NTV aliquots.
- 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

Product batch number: Not stated
Dilution-neutralisation method 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: 20°C
Test organism: *P. aeruginosa* ATCC 15442
Incubation temperature: 36°C ± 2°C
Interfering substances: 0.3g/l Bovine albumin
Date of Test: 30 Nov 11
Person responsible: M. Matynia Signature: Matynia Michal
Appearance of product test solutions: Cloudy colourless solution

Validation and Controls

Validation suspension (Nv_0)			**Experimental Conditions Control (A)**			**Neutraliser Control (B)**			**Method Validation (C)** Prod conc: RTU		
Vc1	44	χ = 53	Vc1	54	χ = 58	Vc1	42	χ = 50	Vc1	54	χ = 55
Vc2	62		Vc2	62		Vc2	57		Vc2	55	
30 ≤ χ of Nv_0 ≤ 160? Yes [X] No [ ]			χ of A is ≥ 0.5 x χ of Nv_0? Yes [X] No [ ]			χ of B is ≥ 0.5 x χ of Nv_0? Yes [X] No [ ]			χ of C is ≥ 0.5 x χ of Nv_0? Yes [X] No [ ]		

Test suspension and test

Test suspension (N and N_0):	**N**	**Vc1**	**Vc2**	χ wm = 152 x 10^6; lgN = 8.18
	10^{-6}	151	153	N_0 = N/10; lgN_0 = 7.18
	10^{-7}	16	11	7.17 ≤ lg N_0 ≤ 7.70? Yes [X] No [ ]

Conc of the product	**Vc1**	**Vc2**	**Na = χ x10**	**lgNa**	**lgR**	**Contact time**
RTU	<14	<14	<140	<2.15	>5.03	5 min

Product batch number: Not stated
Dilution-neutralisation method 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: 20°C
Test organism: *E. coli* NCTC 10418
Incubation temperature: 36°C ± 2°C
Interfering substances: 0.3g/l Bovine albumin
Date of Test: 25 Nov 11
Person responsible: M. Matynia Signature: Matynia Michał
Appearance of product test solutions: Cloudy colourless solution

Validation and Controls

Validation suspension (Nv_0)			**Experimental Conditions Control (A)**			**Neutraliser Control (B)**			**Method Validation (C)** Prod conc: RTU		
Vc1	70	χ = 66	Vc1	75	χ = 68	Vc1	76	χ = 77	Vc1	43	χ = 43
Vc2	61		Vc2	61		Vc2	77		Vc2	42	
30 ≤ χ of Nv_0 ≤ 160? Yes [X] No [ ]			χ of A is ≥ 0.5 x χ of Nv_0? Yes [X] No [ ]			χ of B is ≥ 0.5 x χ of Nv_0? Yes [X] No [ ]			χ of C is ≥ 0.5 x χ of Nv_0? Yes [X] No [ ]		

Test suspension and test

Test suspension (N and N_0):	**N**	**Vc1**	**Vc2**	χ wm = 268 x 10^6; lgN = 8.43
	10^{-6}	285	252	N_0 = N/10; lgN_0 = 7.43
	10^{-7}	29	24	7.17 ≤ lg N_0 ≤ 7.70? Yes [X] No [ ]

Conc of the product	**Vc1**	**Vc2**	**Na = χ x10**	**lgNa**	**lgR**	**Contact time**
RTU	24	25	250	2.40	5.03	5 min

Product batch number: Not stated
Membrane filtration method
Number of plates: 1 / 0.1ml
Rinsing liquid: Sterile distilled water
Actual test temperature: 20°C
Test organism: *S. aureus* ATCC 6538
Incubation temperature: 36°C ± 2°C
Interfering substances: 0.3g/l Bovine albumin
Date of Test: 02 Dec 11
Person responsible: E. Brzosko Signature:
Appearance of product test solutions: Cloudy colourless solution

Validation and Controls

Validation suspension (Nv_0)			**Experimental Conditions Control (A)**			**Filtration Control (B)**			**Method Validation (C)** Prod conc: RTU		
Vc1	60	χ = 57	Vc1	45	χ = 49	Vc1	50	χ = 50	Vc1	32	χ = 30
Vc2	53		Vc2	53		Vc2	49		Vc2	27	
$30 \leq \chi$ of $Nv_0 \leq 160$? Yes [X] No [ ]			χ of A is $\geq 0.5 \times \chi$ of Nv_0? Yes [X] No [ ]			χ of B is $\geq 0.5 \times \chi$ of Nv_0? Yes [X] No [ ]			χ of C is $\geq 0.5 \times \chi$ of Nv_0? Yes [X] No [ ]		

Test suspension and test

Test suspension (N and N_0):	**N**	**Vc1**	**Vc2**	χ wm = 180×10^6; lgN = 8.26 $N_0 = N/10$; $lgN_0 = 7.24$ $7.17 \leq lg\ N_0 \leq 7.70$? Yes [X] No [ ]
	10^{-6}	177	182	
	10^{-7}	<14	19	

Conc of the product	**Vc1**	**Vc2**	**Na = χ x10**	**lgNa**	**lgR**	**Contact time**
RTU	<14	<14	<140	<2.15	>5.11	5 min

Product batch number: Not stated
Membrane filtration method
Number of plates: 1 / 0.1 ml
Rinsing liquid: Sterile distilled water
Actual test temperature: 20°C
Test organism: *E. hirae* NCIMB 8192
Incubation temperature: 36°C ± 2°C
Interfering substances: 0.3g/l Bovine albumin
Date of Test: 02 Dec 11
Person responsible: E. Brzosko Signature: PP
Appearance of product test solutions: Cloudy colourless solution

Validation and Controls

Validation suspension (Nv_0)			**Experimental Conditions Control (A)**			**Filtration Control (B)**			**Method Validation (C)** Prod conc: RTU		
Vc1	65	χ = 72	Vc1	51	χ = 49	Vc1	36	χ = 45	Vc1	56	χ = 52
Vc2	78		Vc2	46		Vc2	53		Vc2	47	
30 ≤ χ of Nv_0 ≤ 160? Yes [X] No [ ]			χ of A is ≥ 0.5 x χ of Nv_0? Yes [X] No [ ]			χ of B is ≥ 0.5 x χ of Nv_0? Yes [X] No [ ]			χ of C is ≥ 0.5 x χ of Nv_0? Yes [X] No [ ]		

Test suspension and test

Test suspension (N and N_0):	**N**	**Vc1**	**Vc2**	χ wm = 252 x 10^6; lgN = 8.40
	10^{-6}	261	245	N_0 = N/10; lgN_0 = 7.40
	10^{-7}	23	26	7.17 ≤ lg N_0 ≤ 7.70? Yes [X] No [ ]

Conc of the product	**Vc1**	**Vc2**	**Na = χ x10**	**lgNa**	**lgR**	**Contact time**
RTU	<14	<14	<140	<2.15	>5.25	5 min

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 ($lgR = lgN_0 - lgNa$)
Na = number of survivors in the test mixture
N = number of cells in the test suspension
N_0 = N/10
Nv = number of cells in the validation suspension
Nv_0 = Nv/10