ALS Technichem (HK) Pty Ltd
11/F, Chung Shun Knitting Centre
1-3 Wing Yip Street
Kwai Chung, N.T., Hong Kong
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CERTIFICATE OF ANALYSIS

CONTACT:	KENNETH CHEUNG	**WORK ORDER:**	HK1773111
CLIENT:	OPTIWAY (ASIA) CO. LTD	**SUB-BATCH:**	0
ADDRESS:	FLAT B, 14/F,	**LABORATORY:**	HONG KONG
ADDRESS:	SHUI WING INDUSTRIAL BUILDING, 12-22 TAI YUEN STREET KWAI CHUNG, N.T. , HONG KONG	**DATE RECEIVED:**	27-Oct-2017
		DATE OF ISSUE:	06-Nov-2017
		SAMPLE TYPE:	LIQUID
		NO. OF SAMPLES:	1

COMMENTS

Sample(s) were picked up from client by ALS Technichem (HK) staff in an ambient condition.
Sample(s) analysed and reported on an as received basis.
Testing period: 27-Oct-2017 to 6-Nov-2017

Method Reference:
BS EN 1276:2009 Incorporating Corrigendum August 2010, Chemical disinfectants and antiseptics - Quantitative suspension test for the evaluation of bactericidal activity of chemical disinfectants and antiseptics used in food, industrial, domestic, and institutional areas - Test method and requirements (phase 2. step 1)

Appearance of the product: Transparent and colorless liquid
Active substance(s) and their concentration(s): Unknown
Product diluent recommended by the manufacturer for use: Not applicable
Method: Membrane filtration

Conclusion:
The bactericidal activity of the submitted sample at original concentration showed greater than 5 lg reduction (lg R) on *Escherichia coli* under dirty condition which standing at 20 °C with 5 minutes contact time, according to the BS EN 1276 standard.

SAMPLE DETAILS

ALS Lab ID	Product Name
HK1773111-001	NICE - CRYSTAL SANITIZER コレスゴ！

NOTES

This is the Final Report and supersedes any preliminary report with this batch number.
Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

Mr Luk Hon Yin, Henry
Microbiologist - Microbiology

CERTIFICATE OF ANALYSIS

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Results:

Test Organism	Validation test				Test suspension				Result	
	Validation suspension (Nv_0)	Experimental conditions **(A)**	Filtration control **(B)**	Method validation **(C)**	N	lg N	N_0= N/10	lg N_0		contact time (min)
										5
Escherichia coli ATCC 8739	35	38	32	33	2.7E+08	8.43	2.7E+07	7.43	Na	1.0E+01
									lg Na	1.00
									lg R	6.43
									R%	99.99%

Nv_0 = number of cfu/mL in the mixtures"A","B" and "C"at the beginning of the contact time (time 0)
A = number of cfu/mL of the experimental conditions control
B = number of cfu/mL of the filtration control control
C = number of cfu/mL of the method validation
N = number of cfu/mL in the test suspension
N_0 = number of cfu/mL in the test mixture at the beginning of the contact time (time 0)
Na = number of cfu/ml in the test mixture at the end of the contact time and before membrane filtration
lg R = reduction expressed in logarithm
R% = reduction expressed in percentage

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Experimental conditions:
Product diluent used during the test: sterile tryptone sodium chloride solution
Contact time : t = 5 mins ± 10 seconds
Test temperature: 20°C±1°C
Interfering substance: 3g/l bovine albumin (dirty condition)
Temperature of incubation for *Escherichia coli:* 36°C+1°C

Basic limits:
For each organism check that:
a) N is between 1.5×10^8 and 5.0×10^8, N_0 is between 1.5×10^7 and 5.0×10^7
b) N_{V0} is between 30 and 160
c) A, B, C are equal to or greater than $0.5 \times N_{V0}$

Remarks regarding the results:
All controls and validation were within the basic limits.
No precipitate during the test procedure (test mixtures were homogeneous).