



TAIWAN CLEAN  
BIOCHEMICAL TECHNOLOGY CO., LTD.

NO.17, ZHUYE LN., RENWU DIST., KAOHSIUNG CITY  
814, TAIWAN (R.O.C.)  
TEL : 07-3741238  
FAX: 07-3742939



## Test Report

Date Issued : 2012-04-20  
Report No. : 10154C00631-1-2-02  
Version : A

Service Item : ClO<sub>2</sub> Content

Client

Company Name : Taiwan-Clean Biochemical Technology Co.,Ltd.  
Address : No.17, Zhuye Ln., Renwu Dist., Kaohsiung City 814,  
Taiwan

Result of Service Item, performed by ITRI Laboratory, is specified on the next/ following page(s).  
This report, including a signature page and content, is a total of 2 pages.  
The validity of this report no longer exists if signature page and content are separated.



Vice President and General Director  
Material and Chemical Research  
Laboratories

Department Manager



Test Item : ClO<sub>2</sub> Content

Name of Article: Taiwan-Clean Electrolyzed gaseous chlorine dioxide solution

### Test Results and Descriptions

#### I. Test results

Service Items	Result
ClO <sub>2</sub> Content	(2274 ± 20) ppm (m/m)

#### II. Test Descriptions

1. Testing Date and Location of Test

performed at Industrial Technology Research Institute—Material and Chemical Research Laboratories—Chemical Analysis Dept. during the period from March 26, 2012 to April 18, 2012.

2. Test method

Refer JIS K8920

3. Test Standard/Test Instrument

Titration(Metrohm 665 Dosimate) 、 Balance(Sartorius A210P)

4. Environmental Conditions

The test items in this report are not affected by the environmental condition. Therefore, no specification on the environment is needed.

5. Evidence of Standards Traceability

Merck : KIO<sub>3</sub>—99.79%

Sartorius A210P Report No. A00-09-103-01 、 A00-09-203-09



# CENPRO TECHNOLOGY CO., LTD.

8F-1, No.286-8 Hsinya Rd., Chyan Jenn Dist., Kaohsiung, Taiwan, R.O.C. Tel.: (07)8152248 Fax: (07) 8152250

## Sample Analysis Report


Client: Taiwan-Clean Biochemical Technology Co., Ltd. Date Collected: Oct 02, 2012

Sample ID: Taiwan-Clean Gaseous Chlorine Dioxide Solution Date Received: Oct 03, 2012 09:50AM

Client Lab Sample ID: NWD1010387-01 Date Reported: Oct 15, 2012

Collected by: Taiwan-Clean Biochemical Technology Co., Ltd. Report No: NWD1010387

Sampling site: No.17, Zhuye Ln., Renwu Dist., Kaohsiung City 814, Taiwan(R.O.C)

Analytes	Unit	Analytical Results	Analytical Method
Chlorite	mg/L	<0.01	NIEA-W415.52B
Remarks: All sample information provided by the client. ND: Not Detected MDL: Method detection limits			
Reviewed by:  Shu-Teh Pan Laboratory Director			

**ACUTE ORAL TOXICITY STUDY IN RATS (STUDY NO.: T61712001-GN)**

**Taiwan Clean Gaseous Chlorine Dioxide Solution**

**1. SPONSOR**

Name Taiwan Clean Biochemical Technology Co., Ltd.  
Address No.17, Zhuye Ln., Renwu Dist., Kaohsiung City 814, Taiwan (R.O.C.)  
Phone: +886-7-3741-1238  
Fax: +886-7-3742-2939  
Email: a8684.a5556@msa.hinet.net

**2. TESTING FACILITY**

Name: Center of Toxicology and Preclinical Sciences (CTPS), QPS Taiwan  
Address: No. 103, Lane 169, Kangning St., Xizhi Dist., New Taipei City 22180,  
Taiwan

**3. RESULTS**

No mortality or any other clinical signs were observed for rats receiving a single dose of 2000 mg/kg "Taiwan Clean Gaseous Chlorine Dioxide Solution" in the study. The body weight changes of all test animals were normal throughout the study, and there was no onset of gross lesions at the end of the study.

**EYE IRRITATION TEST IN RABBITS (STUDY NO.: T61712002-IR)**

**Taiwan Clean Gaseous Chlorine Dioxide Solution**

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**2. TESTING FACILITY**

Name: Center of Toxicology and Preclinical Sciences (CTPS), QPS Taiwan  
Address: No. 103, Lane 169, Kangning St., Xizhi Dist., New Taipei City 22180,  
Taiwan

**3. RESULTS**

After given as a single dose (0.1 mL) of 20% (v/v) "Taiwan Clean Gaseous Chlorine Dioxide Solution" to the rabbits, no clinical signs were observed. The weight changes were normal for all study animals before and after dosing. There were no observable irritation responses of the eye within 72 hours post-dosing. Based on these results, the 20% (v/v) "Taiwan Clean Gaseous Chlorine Dioxide Solution" was determined as non-irritant.

**DERMAL SENSITIZATION TEST – GUINEA PIG MAXIMIZATION TEST  
(GPMT) (STUDY NO.: T61712003-IR)**

**Taiwan Clean Gaseous Chlorine Dioxide Solution**

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**2. TESTING FACILITY**

Name: Center of Toxicology and Preclinical Sciences (CTPS), QPS Taiwan  
Address: No. 103, Lane 169, Kangning St., Xizhi Dist., New Taipei City 22180,  
Taiwan

**3. RESULTS**

All study animals were alive under the dermal sensitization test of the test article, “Taiwan Clean Gaseous Chlorine Dioxide Solution”, by the guinea-pig maximization test method (GPMT) without any symptoms of systemic toxicity. Weight changes throughout the study period were normal for all animals tested. After induction and challenge exposures to the test article, the highest skin reaction score by Magnusson sensitization scoring standard was “1” for the test group animals, identical to the skin reaction of control group animals (control article: water), indicating an absence of allergic responses to the test article. The test article sensitization rate is 0%. Based on these results, we have classified the test article, “Taiwan Clean Gaseous Chlorine Dioxide Solution” (undiluted) as a “Non-sensitizer”, with sensitizing activities comparable to water.



食品實驗室-台北  
FOOD LAB-TAIPEI  
檢驗報告  
Test Report

Taiwan-Clean Biochemical Technology Co., Ltd.  
No. 17, Zhuye Ln., Renwu Dist., Kaohsiung City 814,  
Taiwan (R.O.C.)

Report No.: FA/2012/30007A-03  
Page : 1 Of 2  
Date : March 14, 2012



The following merchandise was submitted & identified by the client as:

**Product Name:** Taiwan-Clean Gaseous Chlorine Dioxide Solution  
**Application:** Taiwan-Clean Biochemical Technology Co., Ltd.  
**Date of Sample Received:** March 01, 2012  
**Date of Testing:** March 07, 2012  
**Date of Reissuing Report:** December 22, 2012

**Test Requested & Method:**

Reference U.S.PHARMACOPEIA MICROBIAL ANTIMICROBIAL PRESERVATIVES EFFECTIVENESS TEST(51)

**Test Results:**

Dilution sample 100 times was mixed with bacteria medium in the ratio of 1:1.

Test Item		0sec(Initial Inoculation)	5min	Reduction(%)
<i>Salmonella</i> ATCC13311	(CFU/ml)	1.8x10 <sup>5</sup>	Not Detected	>99.999
<i>Staphylococcus aureus</i> ATCC6538	(CFU/ml)	2.2x10 <sup>5</sup>	Not Detected	>99.999
<i>Klebsiella pneumoniae</i> ATCC4352	(CFU/ml)	1.9x10 <sup>5</sup>	Not Detected	>99.999

Dilution sample 20 times was mixed with bacteria medium in the ratio of 1:1.

Test Item		0sec(Initial Inoculation)	5min	Reduction(%)
<i>Candida albicans</i> ATCC10231	(CFU/ml)	6.0x10 <sup>5</sup>	Not Detected	>99.999

Chengchia Trail M.R./Manager  
Signed for and on behalf of  
SGS Taiwan Ltd.



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FOOD LAB-TAIPEI  
檢驗報告  
Test Report

Taiwan-Clean Biochemical Technology Co., Ltd.  
No. 17, Zhuye Ln., Renwu Dist., Kaohsiung City 814,  
Taiwan (R.O.C.)

Report No.: FA/2012/30007A-03  
Page : 2 Of 2  
Date : March 14, 2012



**Test Results:**

Dilution sample 50 times was mixed with bacteria medium in the ratio of 1:1.

Test Item	0sec(Initial Inoculation)	5min	Reduction(%)
<i>Pseudomonas aeruginosa</i> s ATCC9027 (CFU/ml)	3.2x10 <sup>5</sup>	Not Detected	>99.999

Dilution sample 5 times was mixed with bacteria medium in the ratio of 1:1.

Test Item	0sec(Initial Inoculation)	30sec	Reduction(%)
<i>Escherichia Coli</i> ATCC8739 (CFU/ml)	1.4x10 <sup>5</sup>	Not Detected	>99.999

Dilution sample 100 times was mixed with bacteria medium in the ratio of 1:1.

Test Item	0sec(Initial Inoculation)	5min	Reduction(%)
<i>Escherichia Coli</i> ATCC8739 (CFU/ml)	1.4x10 <sup>5</sup>	Not Detected	>99.999

Cheng Chia Tsai  
Chengchia Tsai, M.R./Manager  
Signed for and on behalf of  
SGS Taiwan Ltd.



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食品實驗室-台北  
**FOOD LAB-TAIPEI**  
 檢驗報告  
**Test Report**

Taiwan-Clean Biochemical Technology Co., Ltd.  
 No. 17, Zhuye Ln., Renwu Dist., Kaohsiung City 814, Taiwan  
 (R.O.C.)

Report No. : FA/2012/30007A-05  
 Date : 2012/03/14  
 Page : 1 of 1



THE FOLLOWING MERCHANDISE WAS(WERE) SUBMITTED AND IDENTIFIED BY THE CLIENT AS :

**Product Name :** Taiwan-Clean Gaseous Chlorine Dioxide Solution  
**Application :** Taiwan-Clean Biochemical Technology Co., Ltd.  
**Sample Received :** 2012/03/01  
**Testing Date :** 2012/03/02  
**Test Conditions :** Sample was not dilute


**Test Results:**

Test Item	Test Method	Results	MDL	Unit
Heavy Metal as Pb	DOH FOOD NO.0949412804 Announced	<1	< 1	ppm(mg/kg)
Arsenic (As)	With reference to USEPA 3051 method. Analysis was performed by ICP-MS.	N.D.	0.010	ppm(mg/kg)
Lead (Pb)		N.D.	0.010	ppm(mg/kg)
Cadmium (Cd)		N.D.	0.010	ppm(mg/kg)
Mercury (Hg)		N.D.	0.010	ppm(mg/kg)

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 2. "ND"(Not detected) means the test data mentioned on the report is lower than the detection limit value.  
 3. "Negative": means the test results is lower than detection limit value.  
 4.Reissuing Report Date: 2012/12/22.

- END -

*Cheng Chia Tsai*  
 Chengchia Tsai, M.R./Manager  
 Signed for and on behalf of  
 SGS Taiwan Ltd.



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**FOOD LAB-TAIPEI**  
 檢驗報告  
**Test Report**

Taiwan-Clean Biochemical Technology Co., Ltd.  
 No. 17, Zhuye Ln., Renwu Dist., Kaohsiung City 814, Taiwan  
 (R.O.C.)

Report No. : FA/2012/30007A-04  
 Date : 2012/03/14  
 Page : 1 of 1



THE FOLLOWING MERCHANDISE WAS(WERE) SUBMITTED AND IDENTIFIED BY THE CLIENT AS :

**Product Name:** Taiwan-Clean Gaseous Chlorine Dioxide Solution  
**Application :** Taiwan-Clean Biochemical Technology Co., Ltd.  
**Sample Received :** 2012/03/01  
**Testing Date :** 2012/03/02  
**Test Conditions :** Sample was not dilute

**Test Results:**

Test Item	Test Method	Results	MDL	Unit
Phthalate	---	---	---	---
BBP (Benzyl butyl phthalate)	Analysis was performed by GC/MS.	N.D.	5.0	ppm(mg/kg)
DBP (Di-butyl phthalate)		N.D.	5.0	ppm(mg/kg)
DEHP (Di-(2-ethylhexyl) phthalate)		N.D.	5.0	ppm(mg/kg)
DNOP (Di-n-octyl phthalate)		N.D.	5.0	ppm(mg/kg)
DNPP (Di-n-nonyl phthalate)		N.D.	5.0	ppm(mg/kg)
DMEP (Bis(2-methoxyethyl) phthalate (Dimethoxyethyl phthalate))		N.D.	5.0	ppm(mg/kg)
DIPP (Diisopentylphthalate)		N.D.	5.0	ppm(mg/kg)

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 4. Reissuing Report Date: 2012/12/22.

- END -

*Cheng Chia Tsai*  
 Chengchia Tsai, M.R./Manager  
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