TEST REPORT: 719175451-CHM10-A-LYP

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SUBJECT

Testing of KIKO Stone sample for Use in Contact with Water Intended for Human Consumption with Regard to their Effect on the Quality of the Water (High Temperature Tests).

CLIENT

WhiteCrane (SG) Pte Ltd
44 Jalan Tari Piring
Singapore 799197

Attn : Ms. Angi Ng

SAMPLE SUBMISSION DATE / TEST DATE

03 May 2010 / 04 May 2010

DESCRIPTION OF SAMPLE

One sample consisting of 6 pieces of KIKO Stones System.

Laboratory:
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METHOD OF TEST

Singapore Standard 375 : 2001 “Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water”.

Part 1	“Specification”
Part 2:1	“Method of test - Samples for testing”
Part 2:2.1	“Methods of test - Odour and flavour of water - General method of test”
Part 2:3	“Methods of test - Appearance of water”
Part 2:5	“Methods of test - The extraction of substances that may be of concern to public health (Cytotoxicity test)”
Part 2:6	“Methods of test - The extraction of metals”
Part 3	"High temperature tests"

British Standard 6920 : 2000 is endorsed as Singapore Standard 375 : 2001.

RESULTS

(1) Odour and Flavour of Water

Extraction temperature : 85^{o}C

1.1 All the panelists reported no discernable odour in the 24 hour chlorinated and unchlorinated extracts and no discernable flavour in the first and second dilutions of the same extract.

1.2 The results obtained show that the sample complies with the requirements of SS 375 : Part 2.2.1 for the odour and flavour of water test.

(2) Appearance of Water

Extraction temperature : 85^{o}C

2.1 Colour and Turbidity of the first extract of single sample.

Test	Sample	Requirements of SS 375 : Part 1 : Specification (Maximum admissible level)
Colour (Hazen units)	5	Less than 5
Turbidity (FNU)	0.26	0.5

2.2 The results obtained show that the sample complies with the requirements of SS 375 : Part 2.3 for the appearance of water test.

RESULTS *(cont'd)*

(3) The Extraction of Substances that may be of concern to public health

Extraction temperature : 85°C

3.1 The extracts from the sample and the blank were used to prepare culture media for use with the Monkey Kidney Cell Line (Vero ATCC CCL81).

3.2 The extract from the single sample exhibited confluent growth of cells, thus indicating a non-cytotoxic response.

3.3 The test reagent blank exhibited confluent growth of cells.

3.4 The results obtained show that the sample complies with the requirements of SS 375 : Part 2:5 for the cytotoxicity test.

(4) The Extraction of Metals (Elemental Analysis by ICP-MS)

Extraction temperature : 85°C

4.1 Concentration of metals determined in the second extracts of two samples.

Metal	Sample 1	Sample 2	Requirements of SS 375 : Part 1 : Specification (Maximum allowable concentration)
Aluminium, Al μg/l	< 20	< 20	200
Antimony, Sb μg/l	< 0.5	< 0.5	5
Arsenic, As μg/l	< 1.0	< 1.0	10
Barium, Ba μg/l	< 100	< 100	700
Cadmium, Cd μg/l	< 0.5	< 0.5	3
Chromium, Cr μg/l	< 5.0	< 5.0	50
Iron, Fe μg/l	< 20	< 20	200
Lead, Pb μg/l	< 1.0	< 1.0	10
Manganese, Mn μg/l	< 5.0	< 5.0	50
Mercury, Hg μg/l	< 0.1	< 0.1	1
Nickel, Ni μg/l	< 2.0	< 2.0	20
Selenium, Se μg/l	< 1.0	< 1.0	10
Silver, Ag μg/l	< 1.0	< 1.0	10

4.2 The results obtained show that the sample complies with the requirements of SS 375 : Part 2.6 for the extraction of metals test.

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RESULTS *(cont'd)*

Notes :

FNU : Formazine nephelometric unit
μg/l : micrograms per litre
< : Less than

The above test results relate to the sample as received.

Remarks :

The above results show that the sample complies with the requirements of SS 375 : Part 3 : 2001 'High Temperature Tests' and is deemed suitable for use in contact with hot water (**85°C**) intended for human consumption.

MS AW HWEE YING
TECHNICAL EXECUTIVE

MRS KAM-LEONG YIN PHENG
PRODUCT MANAGER
MICROBIOLOGY
CHEMICAL & MATERIALS

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March 2010