

**SUBJECT:**

Testing of UPVC fittings submitted by Snow Pte Ltd for use in contact with drinking water.

**TESTED FOR:**

Snow Pte Ltd  
15A Tuas Avenue 18, #03-01  
Singapore 638905

Attn: Mr Senthil

**TEST DATE:**

04 Jul 2023

**METHOD OF TEST:**

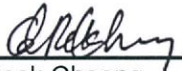
SS 375: 2015 Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water

**DESCRIPTION OF SAMPLE:**

One lot of "Snow" brand UPVC fittings was submitted to TUV SUD PSB PTE LTD for testing.

**TEST RESULTS:**

Passed. The above results show that the sample complies with the requirements of SS 375: Part 1 and Part 2 at test temperature of 25 °C and is deemed suitable for use in contact with water intended for human consumption. Refer to appendix test report 7191312044-CHM23-01-CWY dated 26 SEP 2023.



Chua Peck Cheong  
Senior Manager

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# TEST REPORT: 7191312044-CHM23-01-CWY

Date: 26 SEP 2023

Email: Wan-Yu.CHEW@tuvsud.com

Client's Ref: 2322472

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PSB Singapore

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Inspire trust.**

## SUBJECT

Testing of Material for Use in Contact with Water Intended for Human Consumption with regard to their Effect on the Quality of the Water.

## CLIENT

**Submitted by:**  
Singapore Test Lab Pte Ltd  
10B Enterprise Road  
Singapore 629828

**Attn :** Mr. Chua Peck Cheong, Patrick

## SAMPLE SUBMISSION DATE / TEST DATE

21 Jun 2023 / 04 Jul 2023

## DESCRIPTION OF SAMPLE

One sample of "Snow" brand UPVC fittings by Snow Pte Ltd.

Dimensions of each piece were approximately outer diameter 70 mm, inner diameter 60 mm and length 32 mm.



LA-2007-0380-A LA-2007-0386-C  
LA-2007-0381-F LA-2010-0464-D  
LA-2007-0382-B LA-2018-0702-B  
LA-2007-0383-G LA-2018-0703-G  
LA-2007-0384-G LA-2020-0747-L  
LA-2007-0385-E

The results reported herein have been performed in accordance with the terms of accreditation under the Singapore Accreditation Council. Inspections/Calibrations/Tests marked "Not SAC-SINGLAS Accredited" in this Report are not included in the SAC-SINGLAS Accreditation Schedule for our inspection body/laboratory.

**Laboratory:**  
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TÜV SÜD @ IBP  
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**TÜV®**



**METHOD OF TEST**

Singapore Standard 375 : 2015 "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 2:4 "Methods of test - Growth of aquatic microorganisms"
- 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"

**RESULTS**

**(1) Odour and Flavour of Water**

Extraction temperature : 25°C

- 1.1 One test panellist reported discernable odour in the 1<sup>st</sup> extraction chlorinated test extract. All test panellists reported no discernable odour in the 1<sup>st</sup> extraction unchlorinated test extracts.
- 1.2 All test panellists reported no discernable flavour in the first and second dilutions of the same chlorinated and unchlorinated test extracts.
- 1.3 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 : 25°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) | < 0.1  | 5  |
| Turbidity (FNU)      | 0.15   | 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) Growth of Aquatic Microorganisms**

Test temperature : 30°C

3.1 The mean dissolved oxygen concentration of the control was 7.29 mg/litre.

3.2 The mean dissolved oxygen difference (MDOD) of the test and reference materials were as follows:

| Materials \ Test             | MDOD (mg/l) | Requirements of SS 375 : Part 1 : Specification (MDOD, mg/l) |
|------------------------------|-------------|--|
| Negative reference           | 0.40        | 0.0 ± 0.6  |
| Positive reference           | 5.79        | 7.5 ± 2.5  |
| Test product (Single sample) | 0.07        | < 1.69   |

3.3 The results obtained show that the sample complies with the requirements of SS 375 : Part 2:4 for the growth of aquatic micro-organisms test.

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

Extraction temperature : 25°C

4.1 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).

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

4.3 The test reagent blank exhibited confluent growth of cells.

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

**RESULTS** (cont'd)

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

Extraction temperature : 25°C

5.1 Concentration of metals determined in the first extracts of two samples.

| Metal                 | Sample 1 | Sample 2 | Requirements of<br>SS 375 : Part 1 : Specification<br>(Maximum allowable concentration) |
|-----------------------|----------|----------|---|
| Silver,<br>Ag µg/l    | < 0.06   | < 0.06   | 100   |
| Aluminium,<br>Al µg/l | < 0.32   | < 0.32   | 200   |
| Arsenic<br>As µg/l    | 0.12     | 0.12     | 10  |
| Barium,<br>Ba µg/l    | < 0.02   | < 0.02   | 700   |
| Cadmium,<br>Cd µg/l   | < 0.02   | < 0.02   | 3   |
| Chromium,<br>Cr µg/l  | < 0.05   | < 0.05   | 50  |
| Iron,<br>Fe µg/l      | < 1.40   | < 1.40   | 200   |
| Manganese,<br>Mn µg/l | 0.06     | 0.06     | 50  |
| Nickel,<br>Ni µg/l    | < 0.04   | < 0.04   | 20  |
| Lead,<br>Pb µg/l      | < 0.04   | < 0.04   | 10  |
| Selenium,<br>Se µg/l  | < 0.24   | < 0.24   | 10  |
| Boron,<br>B µg/l      | < 0.07   | < 0.07   | 2400  |
| Antimony,<br>Sb µg/l  | < 0.05   | < 0.05   | 5   |
| Mercury,<br>Hg µg/l   | < 0.06   | < 0.06   | 1   |

5.2 The results obtained show that the sample complies with the requirements of SS 375 : Part 2:6 for the extraction of metals test.

**TEST REPORT: 7191312044-CHM23-01-CWY**  
26 SEP 2023



PSB Singapore

Notes :

FNU : Formazine nephelometric unit

mg/l : milligrams per litre

µg/l : micrograms per litre

< : Less than

The above test results relate to the sample as received.

Remarks :

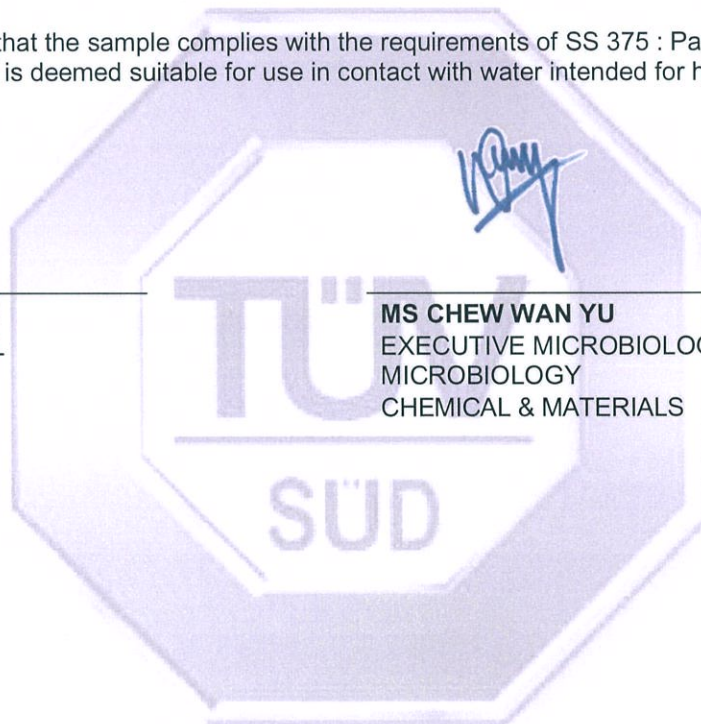
The above results show that the sample complies with the requirements of SS 375 : Part 1 and Part 2 at test temperature of 25°C and is deemed suitable for use in contact with water intended for human consumption.

A handwritten signature in black ink, appearing to read 'Hwy'.

**MS AW HWEE YING**  
SENIOR TECHNICAL  
EXECUTIVE

A handwritten signature in blue ink, appearing to read 'Wanyu'.

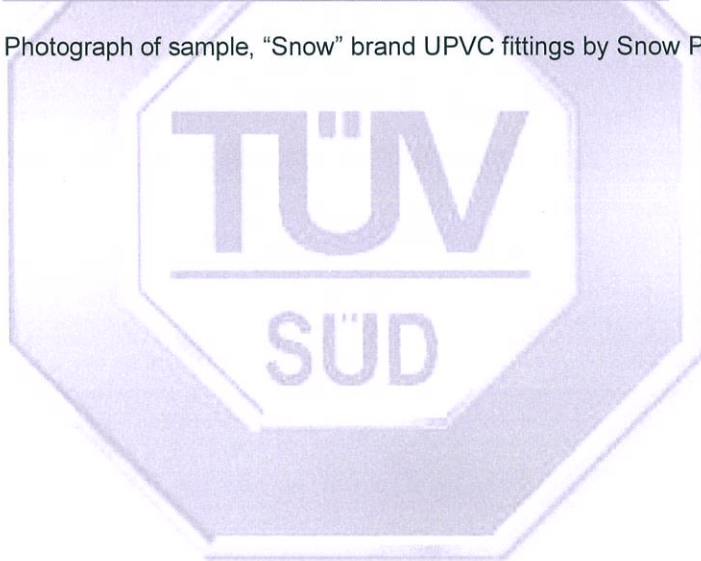
**MS CHEW WAN YU**  
EXECUTIVE MICROBIOLOGIST  
MICROBIOLOGY  
CHEMICAL & MATERIALS



APPENDIX



Figure 1: Photograph of sample, "Snow" brand UPVC fittings by Snow Pte Ltd.



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26 SEP 2023



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Effective 26 January 2021

