

Test Report No.: VX-TR-20-0254
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**DETERMINATION OF THE VIRUCIDAL ACTIVITY (EN 14476) OF
SMARTCOAT**

Lab No.: VX-62-20-0002
Sample Name: **SMARTCOAT**
Method: EN 14476:2013+A1:2015 (E)

Chemical disinfectants and antiseptics – Quantitative suspension test for the evaluation of virucidal activity in the medical area – Test method and requirements (phase 2, step 1)

Client: Titanium World Technology Sdn. Bhd.
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57000 Kuala Lumpur
Malaysia

Sample Receipt Date: 15 April 2020

Report Date: 14 May 2020

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Kuala Lumpur, 14 May 2020



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Microbiologist



4. Test method and its validation

- 4.1 Testing method: Quantal test
- 4.2 Inactivation method: Immediate dilution
Molecular sieving using MicroSpin™ S 400 HR (for formaldehyde only)

The results of validation test A, B, and C proved the viability of the method in all cases.

5. Test results

The results are stated in Tables A and B.

6. Conclusion

SMARTCOAT showed the required virus reduction of $\geq 4.0 \log_{10}$ against test strain *Human coronavirus ATCC VR-740* in accordance with EN 14476:2013+A1:2015 (E) at 100.00 %* concentration after 30 and 60 minutes under the stated condition. According to the simple acceptance decision rule[†], there is a minimal risk of false acceptance.

Kuala Lumpur, 14 May 2020

Dr Syazani Suhaimi
Microbiologist

7. Note

Virucidal activity – the capability of a product to produce a reduction in the number of viable viruses belonging to reference strains under defined conditions by at least 4 orders (10^4).

$R = V_c/N_s$ = the reduction in viability, or $\lg R = \lg V_c - \lg N_s$

* The product can only be tested at 80.00 % concentration or less, as some dilution always occurs when test organisms and interfering substance are added.

† The decision rule applied is simple acceptance rule with no guard band and up to 50 % risk of false acceptance or rejection. This rule has been determined by the laboratory and agreed with the client prior to testing.

Table C: Summary of the log reductions of the quantitative suspension test according to EN 14476

| Test strain | Test concentration (%) / contact time (min) | Log reduction (TCID ₅₀ /ml) | Associated risk [†] |
|--------------------------------------|---|--|----------------------------------|
| <i>Human coronavirus ATCC VR-740</i> | 100.00* / 30 | ≥4.63 ± 0.36 | Minimal risk of false acceptance |
| | 100.00* / 60 | ≥4.63 ± 0.36 | Minimal risk of false acceptance |

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Efficacy of SMARTCOAT against *Human coronavirus*, strain 229E, ATCC VR-740, in a quantitative suspension test at 20 °C according to EN 14476:2013+A1:2015 (E) under clean condition

EXPERT OPINION*

This expert opinion is based on the test report VX-TR-20-0254 dated 14 May 2020.

The virucidal activity of the disinfectant SMARTCOAT of Titanium World Technology Sdn. Bhd. against *Human coronavirus* ATCC VR-740 was investigated by a quantitative suspension test according to EN 14476:2013+A1:2015 (E) under clean condition (0.30 g/L bovine albumin solution).

According to this suspension test, a disinfectant or a disinfectant solution at a particular concentration is considered as having virucidal activity if the virus titre is reduced by $\geq 4 \log_{10}$ (inactivation $\geq 99.99\%$) within the recommended exposure period.

SMARTCOAT was examined at 20 °C at the concentration of 100.00 %** for the exposure times of 30 and 60 minutes. After the exposure times, the viral reduction exceeded 4 \log_{10} -steps in all assays. According to the simple acceptance decision rule†, there is a minimal risk of false acceptance. Therefore, a virucidal activity against for *Human coronavirus* ATCC VR-740 was measured as follows:

| | | |
|-----------------|------------|------------|
| Clean condition | 100.00 %** | 30 minutes |
| Clean condition | 100.00 %** | 60 minutes |

Kuala Lumpur, 14 May 2020

Dr Syazani Suhaimi
Microbiologist

Dr Peter Cheong
Head of Microbiology Laboratories

* Opinions and interpretations expressed here are outside the scope of SAMM (Laboratory Accreditation Scheme of Malaysia) accreditation.

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