

# VIRAL-SHIELD

**FORTIFIED WITH SILVER AND COPPER NANOPARTICLES**

**LEGIONELLA-X VIRAL-SHIELD MINIMIZES CORONAVIRUS RISKS ON PUBLIC TRANSPORT**

**Legionella-X Viral-Shield provides 99.9998% residual inactivation efficacy against Positive-gram bacteria, Negative-Gram Bacteria and Enveloped Viruses up to 60 days on all inanimate surfaces onboard Mass Rapid Transport Trains, Public Buses, Taxis, etc.**



**Passed Japan Industrial Standard- JIS Z 2801:2010/A1 2012 Test Method for Antibacterial Activity and Efficacy**



## Introduction

Grappling with the Coronavirus has been a constant learning process for epidemiologists, doctors, patients, governments and individuals. Some things we thought we knew have changed as more data arrives and more countries study its effects.

The coronavirus that causes COVID-19 mainly spreads from person to person. When someone who is infected coughs or sneezes, they send droplets containing the virus into the air. A healthy person can then breathe in those droplets. We may also catch the virus if we touch a surface or object that has the virus on it and then touch our mouth, nose, or eyes.

The coronavirus can live for hours to days on surfaces like countertops and doorknobs. How long it survives depends on the material the surface is made from.

The family of viruses that includes the one that causes COVID-19 can live on some of the surfaces we probably touch every day.

Hence, to prevent any infections via touching the contaminated surfaces, it is only prudent for us to disinfect all surfaces as frequent as possible onboard mass rapid transport, buses, taxis, etc.

However, in practice it may not be as convenient or even not possible where the human traffic is extremely heavy. In view of the said issue, Legionella-X Viral-Shield was specially developed to solve the said issue.



## Description

Legionella-X Viral-Shield fortified with Silver and Copper Nanoparticles is a potent water-based disinfectant coating specially developed to provide lingering disinfecting effect to on all inanimate surfaces.

It provides up to 60 days disinfecting efficacy on all coated surfaces and is most ideal to be used on sheltered public places and public transports such as MRT Trains, Taxis, Buses, etc.

It has a killing efficacy of up to 99.9998% to 99.99994% against positive-gram, negative-gram bacteria and enveloped viruses.

It is non-flammable making it safe to be used in enclosed areas even near hot-working -areas.

## Benefits

- Passed JIS Z 2801:2010 /A 1:2012 Test.
- Disinfecting Efficacy up to 99.99994%
- Effectively kills positive-gram, negative-gram bacteria, and enveloped viruses
- Provides up to 60 days of disinfecting efficacy for all inanimate surfaces after coated with Viral Shield.
- Non-Flammable
- Water-based facilitates indoor usage.
- Pleasant lingering fragrance.



**TEST REPORT: 7191237543-CHM20-RC**

Date: 21 MAY 2020      Tel: +65 68851345 Fax: +65 67732912

Client's Ref:      Email: Randy.CHIN@tuv-sud-psb.sg

Note: This report is issued subject to the Testing and Certification Regulations of the TÜV SÜD Group and the General Terms and Conditions of Business of TÜV SÜD PSB Pte Ltd. In addition, this report is governed by the terms set out within this report.

**SUBJECT**  
Antibacterial Activity Evaluation

**CLIENT**  
Magna International Pte Ltd  
10H Enterprise Road  
Singapore 629834  
Attn: Nelson Cheng

**SAMPLE SUBMISSION DATE / TEST DATE**  
04 May 2020 / 05 May 2020

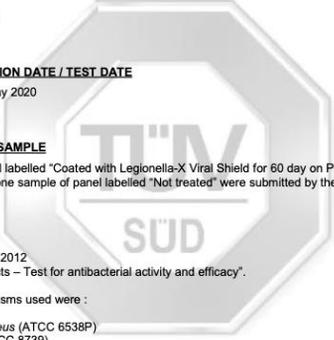
**DESCRIPTION OF SAMPLE**  
One sample of panel labelled "Coated with Legionella-X Viral Shield for 60 day on PET plastic sheet (Batch No. 20/01/03)" and one sample of panel labelled "Not treated" were submitted by the above company.

**METHOD OF TEST**  
JIS Z 2801:2010/A1:2012  
"Antibacterial products – Test for antibacterial activity and efficacy".

The test microorganisms used were :  
*Staphylococcus aureus* (ATCC 6538P)  
*Escherichia coli* (ATCC 8739)

Size of Treated Sample: 5 cm x 5 cm  
Size of Untreated Sample: 5 cm x 5 cm  
Size of film: 4 cm x 4 cm polyethylene film  
Volume of test inoculum : 0.2 ml

  
 PSB Singapore  
 Add value.  
 Inspire trust.



  
Laboratory:  
TUV SUD PSB Pte. Ltd.  
No.1 Science Park Drive  
Singapore 118221

Phone : +65-6885 1333  
Fax : +65-6776 8670  
E-mail: enquiry@tuv-sud-psb.sg  
www.tuv-sud-psb.sg  
Co. Reg : 199002687R

Regional Head Office:  
TUV SUD Asia Pacific Pte. Ltd.  
1 Science Park Drive, #02-01  
Singapore 118221  
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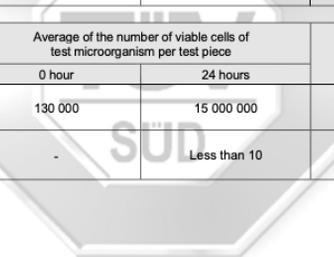
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21 MAY 2020

  
 PSB Singapore

**RESULTS**

Test microorganism (Bacterial cells inoculated per test piece)	Average of the number of viable cells of test microorganism per test piece		Value of Antibacterial Activity (Criteria : Not less than 2.0)
	0 hour	24 hours	
<b><i>Staphylococcus aureus</i> (ATCC 6538P)</b>			
Control: Not treated	120 000	6 100 000	-
Sample: Coated with Legionella-X Viral Shield for 60 day on PET plastic sheet (Batch No. 20/01/03)	-	Less than 10	More than 5.78
<b><i>Escherichia coli</i> (ATCC 8739)</b>			
Control: Not treated	130 000	15 000 000	-
Sample: Coated with Legionella-X Viral Shield for 60 day on PET plastic sheet (Batch No. 20/01/03)	-	Less than 10	More than 6.18



**TÜV SÜD PSB TEST REPORT**  
**JIS Z 2801:2010/A1 2012 Test Method for Antibacterial Activity and Efficacy**



## Typical Properties

### Appearance

Translucent liquid

### Viscosity

Free Flowing

### Flash Point

Non-Flammable

### Specific Gravity

1

### Odour

Mint

## Directions for Use

Apply via fogging and spraying on any inanimate surfaces, gently wipe dry.

Or apply by spraying on a piece of cloth and wipe it on any desired surfaces.

## Available Packaging

110ml spray bottle

500ml spray bottle

5, 25 and 200 litres drum.

**Magna**

**Magna International Pte Ltd**

10H, Enterprise Road,  
Singapore 629834.

**Tel** (65) 6786-2616

**Fax** (65) 6785-1497

**Email** [info@legionellax.com](mailto:info@legionellax.com)

**Web** <http://www.legionellax.com>

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