Date: 02 OCT 2020 Tel: +65 68851345 Fax: +65 67784301

Client's Ref: Email: Randy.CHIN@tuvsud.com

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.



Add value. Inspire trust.

SUBJECT

Bacterial Filtration Efficiency (BFE)

CLIENT

Grantech Pte Ltd 629 Aljunied Road #04-17, Cititech Industrial Building Singapore 389838

Attn: Peter Chong It Kong

SAMPLE SUBMISSION DATE / TEST DATE

22 Sep 2020 / 30 Sep 2020

DESCRIPTION OF SAMPLE

One sample described as below was received:

Product Name / Brand Name	Manufacturer	Lot Number
GRANZILLA AIRCARE 3 Ply Disposable Face Mask	Grantech Pte Ltd	Test Sample



Laboratory: TÜV SÜD PSB Pte. Ltd. No.1 Science Park Drive Singapore 118221 Phone: +65-6885 1333 Fax: +65-6776 8670 E-mail: enquiries@tuvsud.com www.tuvsud.com/en-sg Co. Reg: 199002667R Regional Head Office: TÜV SÜD Asia Pacific Pte. Ltd. 1 Science Park Drive, #02-01 Singapore 118221 TÜV®

02 OCT 2020



DESCRIPTION OF SAMPLE (cont'd)



Figure 1: "GRANZILLA AIRCARE 3 Ply Disposable Face Mask" sample as received

METHOD OF TEST

ASTM F2101-19 Standard Test Method for Evaluating the Bacterial Filtration Efficiency (BFE) of Medical Face Mask Materials, Using a Biological Aerosol of *Staphylococcus aureus*.

Area contacting with the bacterial challenge: Inside of the mask

Flowrate: 28.3 ± 0.3 L/min

Mean particle size of the challenge aerosol: $3 \mu m \pm 0.3 \mu m$

Test area: Approximately 50 cm²

02 OCT 2020



RESULTS

Sample Description: GRANZILLA AIRCARE 3 Ply Disposable Face Mask

Test sample/ controls	Stage 1, CFU	Stage 2, CFU	Stage 3, CFU	Stage 4, CFU	Stage 5, CFU	Stage 6, CFU	Sum of Total plate count for the 6 sieves, CFU	Average Count for Controls, CFU	BFE (%)	
-ve Control	0	0	0	0	0	0	Less than 1			
+ve Control 1	151	357	626	541	463	21	2159	2331		
+ve Control 2	163	416	712	610	588	13	2502			
Sample 1	0	0	0	0	0	0	Less than 1		More than 99.96	
Sample 2	0	0	0	0 8	0	0	Less than 1		More than 99.96	
Sample 3	0	0	0	0	0	0	Less than 1		More than 99.96	
Sample 4	0	0	0	0	0	0	Less than 1		More than 99.96	
Sample 5	0	0	0	0	0	0	Less than 1		More than 99.96	

02 OCT 2020



Notes:

CFU : Colony Forming Unit

BFE : Bacterial Filtration Efficiency

Remarks:

The above test results relate to the samples as received.

fr

MS AW HWEE YING HIGHER TECHNICAL EXECUTIVE MS TI HUI EN
MICROBIOLOGIST
MICROBIOLOGY
CHEMICAL & MATERIALS



02 OCT 2020



Please note that this Report is issued under the following terms:

- 1. This report applies to the sample of the specific product/equipment given at the time of its testing/calibration. The results are not used to indicate or imply that they are applicable to other similar items. In addition, such results must not be used to indicate or imply that TÜV SÜD PSB approves, recommends or endorses the manufacturer, supplier or user of such product/equipment, or that TÜV SÜD PSB in any way "guarantees" the later performance of the product/equipment. Unless otherwise stated in this report, no tests were conducted to determine long term effects of using the specific product/equipment.
- 2. The sample/s mentioned in this report is/are submitted/supplied/manufactured by the Client. TÜV SÜD PSB therefore assumes no responsibility for the accuracy of information on the brand name, model number, origin of manufacture, consignment or any information supplied.
- 3. Nothing in this report shall be interpreted to mean that TÜV SÜD PSB has verified or ascertained any endorsement or marks from any other testing authority or bodies that may be found on that sample.
- 4. This report shall not be reproduced wholly or in parts and no reference shall be made by the Client to TÜV SÜD PSB or to the report or results furnished by TÜV SÜD PSB in any advertisements or sales promotion.
- 5. Unless otherwise stated, the tests were carried out in TÜV SÜD PSB Pte Ltd, No.1 Science Park Drive Singapore 118221.
- 6. The tests carried out by TÜV SÜD PSB and this report are subject to TÜV SÜD PSB's General Terms and Conditions of Business and the Testing and Certification Regulations of the TÜV SÜD Group.

