

**Test Report**                      **SL52035273756201TX**                      **Date: August 13, 2020**                      **Page 1 of 7**  
 SYNERTECH INTERNATIONAL LIMITED  
 RM.9, 13/F., LAURELS IND. CENTRE, 32 TAI YAU ST., SAN PO KONG, KOWLOON, HONG KONG.

The following sample(s) was/were submitted and identified on behalf of the client as:

Sample Description : (A) Particle Filtering Half Mask

Sample Color : (A) WHITE

Style No. : SC1001M

Manufacturer : SYNERTECH INTERNATIONAL LIMITED

Previous No. : SL52035285437901TX

Test Performed : Selected test(s) as requested by applicant

Sample Receiving Date : Jul 21, 2020

Testing Period : Jul 28, 2020 - Aug 13, 2020

Test Result(s) : Unless otherwise stated the results shown in this test report refer only to the sample(s) tested, for further details, please refer to the following page(s).

Based on the results of the tests reported and the previous report SL52035285437901TX issued on Aug 13, 2020, our Lab concluded that the recommendation level can be as below.

Sample No.	Recommendation Level
(A)	FFP2 NR

Signed for and on behalf of  
 SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd Testing Center

Sara Guo (Account Executive)

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing/inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)

3<sup>rd</sup> Building No. 886, Yishan Road, Xuhui District Shanghai, China 200233 t (86-21) 61402666 f (86-21) 64958763 www.sgsgroup.com.cn  
 中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 t (86-21) 61402666 f (86-21) 64958763 e [sgs.china@sgs.com](mailto:sgs.china@sgs.com)



**Test Result**
**Personal Protective Equipment - Respiratory Protective Devices- Filtering Half Masks to Protect against Particles- Requirements, Testing, Marking**

EN 149:2001+A1:2009

**Clause 7.9.1 Total Inward Leakage**

(EN 149:2001+A1:2009, Clause 8.5)

Test Requirement	Results	Comment
The total inward leakage consists of three components: face seal leakage, exhalation value leakage (if exhalation value fitted) and filter penetration. For particle filtering half masks fitted in accordance with the manufacturer's information, at least 46 out of the 50 individual exercise results (i.e. 10 subjects x 5 exercises) for total inward leakage shall be not greater than: 25% for FFP1, 11% for FFP2, 5% for FFP3  and, in addition, at least 8 out of the 10 individual wearer arithmetic means for the total inward leakage shall be not greater than: 22% for FFP1, 8% for FFP2, 2% for FFP3	Detail refer to Appendix 1	Meet FFP1, Meet FFP2

**Appendix 1: Summarization of Test Data**
**Inward Leakage Test Data**

Subject	Sample No.	Condition	Walk(%)	Head Side/side(%)	Head up/down(%)	Talk(%)	Walk(%)	Mean(%)
Zhou	1	A.R.	4.69	5.36	7.20	6.41	7.17	6.17
Luo	2	A.R.	6.35	6.37	7.54	7.20	7.56	7.00
Lu	3	A.R.	6.35	6.27	5.09	6.76	6.11	6.12
Wang	4	A.R.	4.76	4.92	5.34	6.48	4.73	5.25
Bao	5	A.R.	6.08	8.21	6.41	7.07	7.26	7.01
Ding	6	T.C.	6.74	4.83	5.82	4.29	4.98	5.33
Li	7	T.C.	8.21	6.83	7.17	6.75	7.65	7.32
Chen	8	T.C.	5.44	4.64	5.70	7.25	5.35	5.68
Song	9	T.C.	6.92	6.80	6.38	4.88	7.52	6.50
Ye	10	T.C.	8.03	5.53	6.55	8.80	7.25	7.23

**Facial Dimension(mm)**

Subject	Face length	Face Width	Face Depth	Mouth Width
Chen	125	150	120	58
Lu	115	132	107	48
Zhou	115	135	106	52
Li	125	130	107	46
Luo	125	136	100	43
Zheng	128	140	112	55
Wang	120	147	103	48
Song	120	140	100	50
Bao	130	134	104	50
Ding	134	150	110	52
Liu	120	135	117	50

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing/inspection report & certificate, please contact us at telephone: (86-755) 8307 1445, or email: [CN.Qccchecks@sgs.com](mailto:CN.Qccchecks@sgs.com)

3<sup>rd</sup> Building No. 886 Yishan Road, Xuhui District Shanghai, China 200233 t (86-21) 61402666 f (86-21) 64968763 www.sgs.com.cn

中国·上海·徐汇区宜山路886号3号楼 邮编: 200233 t (86-21) 61402666 f (86-21) 64968763 e [sgs.china@sgs.com](mailto:sgs.china@sgs.com)



**Clause 7.9.2 Penetration of Filter Material**  
(EN 149:2001+A1:2009, Clause 8.11 & EN 13274-7:2019)

Test Requirement			Results	Comment
The penetration of the filter of the particle filtering half mask shall meet the requirements of the following table.			Detail refer to Appendix 2	Meet FFP1, Meet FFP2
Classification	Maximum penetration of test aerosol			
	Sodium chloride test 95 l/min	Paraffin oil test 95 l/min		
	% max.	% max.		
FFP1	20	20		
FFP2	6	6		
FFP3	1	1		

**Appendix 2: Summarization of Test Data**

Penetration of filter material

Aerosol	Condition	Sample No.	Penetration (%)
Sodium chloride test	As received	1	0.530
		2	0.623
		3	0.579
	Simulated wearing treatment	4	0.584
		5	0.525
		6	0.560
	Mechanical strength +Temperature conditioned	7	0.789
		8	0.903
		9	0.825
Paraffin oil test	As received	10	0.859
		11	0.756
		12	0.803
	Simulated wearing treatment	13	0.974
		14	0.825
		15	0.871
	Mechanical strength +Temperature conditioned	16	2.835
		17	2.967
		18	3.125

Flow conditioning : Single filter: 95.0 L/min





**Clause 7.16 Breathing Resistance**

(EN 149:2001+A1:2009, Clause 8.9)

Test Requirement				Results	Comment
The penetration of the filter of the particle filtering half mask shall meet the requirements of the following table.				Detail refer to Appendix 5	Meet FFP1, Meet FFP2, Meet FFP3
Classification	Maximum permitted resistance (mbar)				
	Inhalation		Exhalation		
	30 l/min	95 l/min	160 l/min		
FFP1	0.6	2.1	3.0		
FFP2	0.7	2.4	3.0		
FFP3	1.0	3.0	3.0		

**Appendix 5: Summarization of Test Data**

**Breathing resistance (mbar)**

	Flow rate(l/min)	1					2					3					
		A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	
As received	Inhalation	30	0.4	0.3	0.3	0.4	0.3	0.4	0.3	0.3	0.4	0.4	0.4	0.3	0.4	0.4	0.3
		95	1.2	1.3	1.2	1.3	1.2	1.3	1.3	1.2	1.2	1.3	1.3	1.2	1.3	1.3	1.2
	Exhalation	160	2.1	2.2	2.1	2.2	2.1	2.2	2.1	2.2	2.1	2.2	2.1	2.2	2.1	2.2	2.1
Simulated wearing treatment	Inhalation	30	0.4	0.3	0.4	0.3	0.3	0.4	0.4	0.3	0.4	0.3	0.4	0.4	0.3	0.4	0.4
		95	1.3	1.2	1.3	1.3	1.2	1.3	1.3	1.2	1.2	1.3	1.3	1.2	1.3	1.3	1.2
	Exhalation	160	2.2	2.1	2.2	2.2	2.1	2.1	2.2	2.1	2.1	2.2	2.2	2.1	2.2	2.1	2.1
Temperature conditioned	Inhalation	30	0.4	0.3	0.3	0.4	0.4	0.3	0.3	0.4	0.4	0.3	0.3	0.4	0.4	0.3	0.3
		95	1.3	1.4	1.3	1.4	1.3	1.4	1.3	1.4	1.4	1.3	1.3	1.4	1.3	1.3	1.4
	Exhalation	160	2.1	2.2	2.1	2.2	2.2	2.1	2.2	2.1	2.1	2.2	2.1	2.1	2.1	2.2	2.2

A: facing directly ahead; B: facing vertically upwards; C: facing vertically downwards; D: lying on the left side; E: lying on the right side

Test	Uncertainty
Total inward leakage	3.4%
Penetration of filter material	4.8%
Carbon dioxide content of the inhalation air	3.9%
Breathing resistance (30L/min)	5.9%
Breathing resistance (95L/min)	4.9%
Breathing resistance (160L/min)	4.3%



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing/inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or e-mail: CH. Doocheek@sgs.com

SGS-CL Technical Services (Shanghai) Co., Ltd.  
Testing Center

3788 Jing No. 586, Yishan Road, Xuhui District, Shanghai, China 200233  
中国·上海·徐汇区宜山路586号3号楼 邮编: 200233

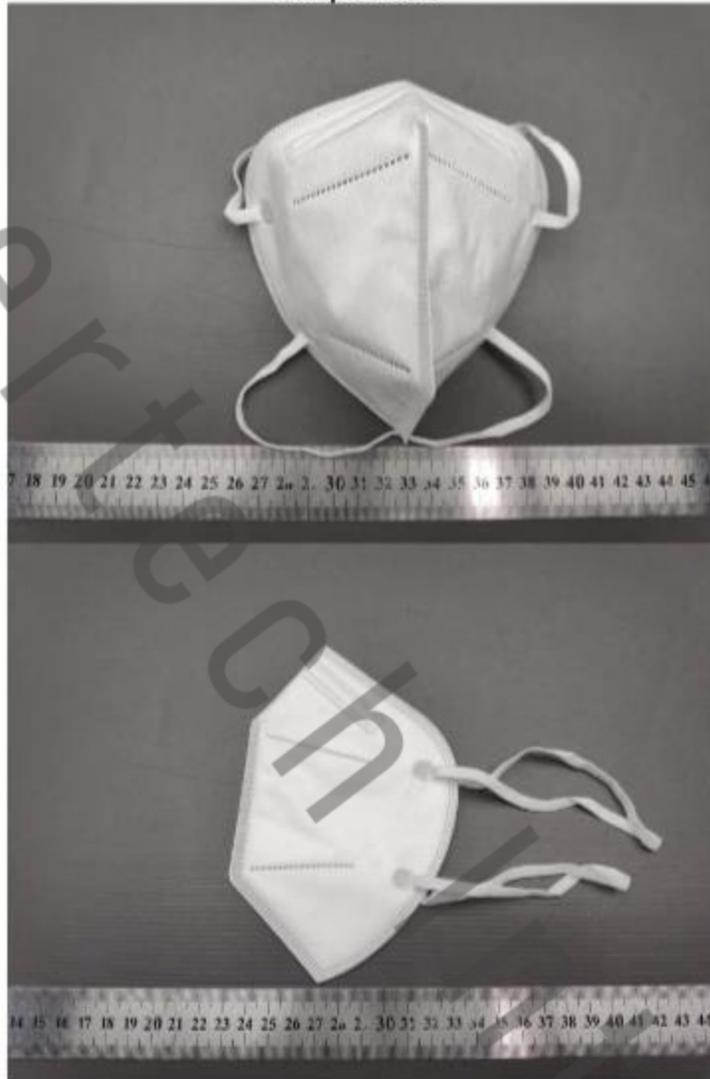
T (86-21) 61402666 F (86-21) 64958763

www.sgs.com.cn

T (86-21) 61402666 F (86-21) 64958763

e sgs.china@sgs.com

Sample Photo

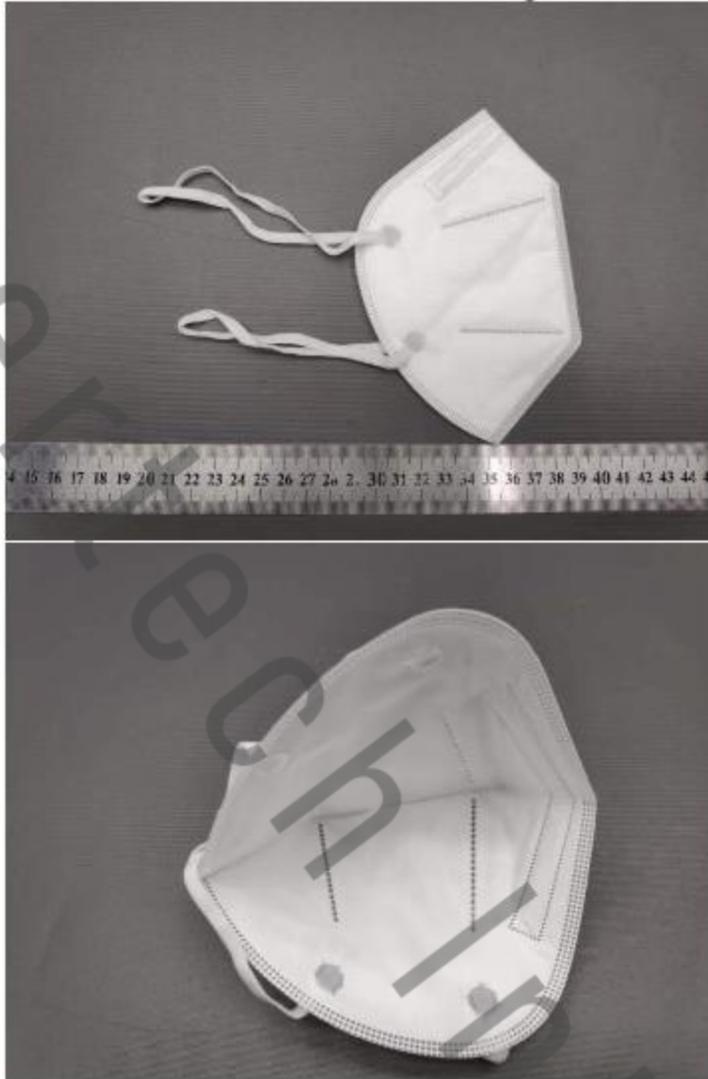


Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing/inspection report & certificate, please contact us at telephone: (86-755)83071443, or email: CN.Doccheck@sgs.com

SGS (China) Technical Services (Shanghai) Co., Ltd. 5 Building No. 666, Yishen Road, Xuhui District, Shanghai, China 200233 t (86-21) 61402666 f (86-21) 64958763 www.sgs.com.cn  
 中国·上海·徐汇区宜山路666号3号楼 邮编: 200233 t (86-21) 61402666 f (86-21) 64958763 e sgs.china@sgs.com





\*\*\*End of Report\*\*\*



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained herein reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)