



# Test Report

**Test Requirement:**

According to the requirement of the Module C2 (SPC CE-062\_EN M4 PPE ) of Applus+, the test item(s) of the sample is according to the standard EN149:2001+A1:2009.

**Product:** PROTECTIVE BUTTERFLY MASK

**Report No.:** PTC21020200501C-EN01

**APPLUS +With ID number:**

**Client:** The Purples

**Client Address:**

**Manufacturer:** Zhejiang The Purples

**Manufacturer Address:**

**Contact:** Jiang lihua

**Model(s):** Q3

**Classification:** FFP3 NR

**Date of Tests:** 2021.02.02~2021.02.06

Signed for and on Behalf of PTC

Prepare by:

Checked by:

Approved by:

*Anne*

*Jue*

*Tim Mo*

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## Summary of assessment

Clause	Assessment
7.3 Visual inspection	PASS
7.5 Material	PASS
7.9.1 Total inward leakage	PASS
7.9.2 Penetration of filter material	PASS
7.12 Carbon dioxide content of the inhalation air	PASS
7.16 Breathing resistance	PASS
7.18 Demountable parts	PASS

**Remark:**

PASS: comply with requirement of standard

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## Test Result:

Requirement	Test Result	Conclusion												
<p><b>7.3 Visual inspection</b></p> <p>The visual inspection shall also include the marking and the information supplied by the manufacturer.</p>	Comply	Pass												
<p><b>7.5 Material</b></p> <p>Materials used shall be suitable to withstand handling and wear over the period for which the particle filtering half mask is designed to be used.</p> <p>Any material from the filter media released by the air flow through the filter shall not constitute a hazard or nuisance for the wearer.</p> <p>After undergoing the conditioning described in 8.3.1 none of the particle filtering half masks shall have suffered mechanical failure of the facepiece or straps.</p> <p>When conditioned in accordance with 8.3.1 and 8.3.2 the particle filtering half mask shall not collapse.</p>	No mechanical failure after undergoing the conditioning described in 8.3.1, No collapse when conditioned in accordance with 8.3.1 and 8.3.2.	Pass												
<p><b>7.9.1 Total inward leakage</b></p> <p>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.</p>	FFP3, Test results are shown in Annex A Table 7.9.1-A&B	Pass												
<p><b>7.9.2 Penetration of filter material</b></p> <p>The penetration of the filter of the particle filtering half mask shall meet the requirements of Table 1.</p> <table border="1"> <thead> <tr> <th></th> <th>Sodium chloride test 95 l/min</th> <th>Paraffin oil test 95 l/min</th> </tr> </thead> <tbody> <tr> <td>FFP1</td> <td>≤ 20%</td> <td>≤ 20%</td> </tr> <tr> <td>FFP2</td> <td>≤ 6%</td> <td>≤ 6%</td> </tr> <tr> <td>FFP3</td> <td>≤ 1%</td> <td>≤ 1%</td> </tr> </tbody> </table>		Sodium chloride test 95 l/min	Paraffin oil test 95 l/min	FFP1	≤ 20%	≤ 20%	FFP2	≤ 6%	≤ 6%	FFP3	≤ 1%	≤ 1%	FFP3 , Test results are shown in Annex A Table 7.9.2.	Pass
	Sodium chloride test 95 l/min	Paraffin oil test 95 l/min												
FFP1	≤ 20%	≤ 20%												
FFP2	≤ 6%	≤ 6%												
FFP3	≤ 1%	≤ 1%												

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## 7.12 Carbon dioxide content of the inhalation air

The carbon dioxide content of the inhalation air (dead space) shall not exceed an average of 1,0 % (by volume)

Test results are shown in Annex A Table 7.12.

**Pass**

## 7.16 Breathing resistance

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

FFP3. Test results are shown in Annex A Table 7.16.

**Pass**

## 7.18 Demountable parts

All demountable parts (if fitted) shall be readily connected and secured, where possible by hand

Comply

**Pass**

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## Annex A: Summarization of Test Data

**Table 7.9.1-A: Inward Leakage Test Data**

Test specification: EN 149:2001+A1:2009 Clause 8.5

Subject	Sample No.	Condition	Walk (%)	Head Side/side (%)	Head up/down (%)	Talk (%)	Walk (%)	Mean (%)
Lv	1	A.R	1.1	1.2	1.3	1.4	1.2	1.2
Li	2	A.R	1.1	1.3	1.5	1.3	1.2	1.3
Zhong	3	A.R	1.4	1.5	1.3	1.3	1.2	1.3
Xu	4	A.R	1.6	1.4	1.8	1.2	1.5	1.5
Ma	5	A.R	1.2	1.3	1.4	1.5	1.5	1.4
Chen	6	T.C	1.0	1.2	1.0	1.2	1.3	1.1
Chen	7	T.C	1.3	1.4	1.4	1.2	1.2	1.3
Zhuo	8	T.C	1.1	1.0	1.3	1.8	1.6	1.4
Chen	9	T.C	1.5	1.1	1.3	1.5	1.5	1.4
Zhang	10	T.C	1.2	1.3	1.1	1.5	1.2	1.3

**Table 7.9.1-B: Facial dimension**

Subject	Face Length	Face Width	Face Depth	Mouth Width
Lv	113	139	104	53
Li	120	135	112	55
Zhong	108	135	106	56
Xu	120	150	120	70
Ma	130	170	130	80
Chen	110	160	90	40
Chen	115	145	110	50
Zhuo	103	146	100	50
Chen	110	145	95	40
Zhang	144	141	101	54

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**Table 7.9.2: Penetration of filter material**

Test specification: EN 149:2001+A1:2009 Clause 8.11

Aerosol	Condition	Sample No.	Penetration (%)	Assessment
Sodium chloride test	As received	11	0.2	Pass
		12	0.2	
		13	0.2	
	Simulated wearing treatment	14	0.1	
		15	0.2	
		16	0.2	
	Mechanical strength + Temperature conditioned	17	0.1	
		18	0.1	
		19	0.1	
Paraffin oil test	As received	20	0.1	
		21	0.1	
		22	0.1	
	Simulated wearing treatment	23	0.1	
		24	0.1	
		25	0.1	
	Mechanical strength + Temperature conditioned	26	0.1	
		27	0.1	
		28	0.1	

**Table 7.12: Carbon dioxide content of the inhalation air**

Test specification: EN 149:2001+A1:2009 Clause 8.7

Condition	Sample No.	Result (%)	Assessment
As received	29	0.04	Pass
	30	0.04	
	31	0.04	
		Mean value: 0.04	

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**Table 7.16: Breathing resistance (mbar)**

Test specification: EN 149:2001+A1:2009 Clause 8.9

As received	Flow Rate		32					33					34				
	Inhalation	30 l/min	0.30					0.28					0.30				
		95 l/min	1.17					1.14					1.12				
	Exhalation	160 l/min	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E
1.78			1.84	1.78	1.77	1.80	1.79	1.77	1.77	1.80	1.76	1.76	1.75	1.81	1.76	1.73	
Simulated wearing treatment	Flow Rate		35					36					37				
	Inhalation	30 l/min	0.29					0.29					0.31				
		95 l/min	1.00					0.97					1.02				
	Exhalation	160 l/min	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E
1.40			1.43	1.44	1.44	1.41	1.39	1.39	1.43	1.43	1.39	1.41	1.37	1.43	1.44	1.37	
Temperature conditioned	Flow Rate		38					39					40				
	Inhalation	30 l/min	0.28					0.28					0.28				
		95 l/min	0.97					0.98					0.97				
	Exhalation	160 l/min	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E
1.40			1.39	1.37	1.37	1.40	1.36	1.40	1.35	1.35	1.35	1.38	1.34	1.41	1.42	1.41	
Assessment	Pass																

A: Facing directly ahead      B: Facing vertically upwards      C: Facing vertically downwards

D: Lying on the left side      E: Lying on the right side

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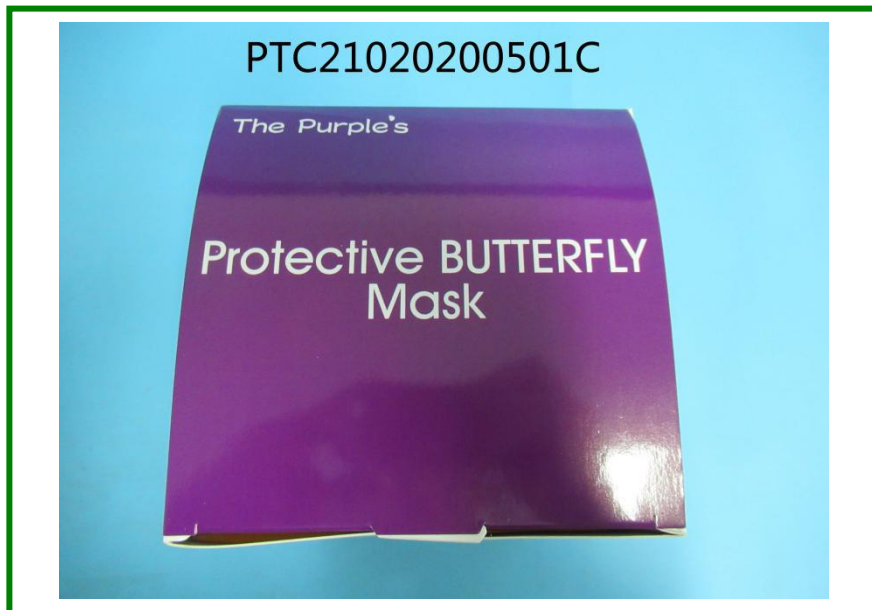
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Test	Uncertainty
Total inward leakage	3.8%
Penetration of filter material(NaCl)	3.5%
Penetration of filter material(Paraffin oil)	4.2%
Carbon dioxide content of the inhalation air	4.5%
Breathing resistance(30L/min)	5.2%
Breathing resistance(95L/min)	5.4%
Breathing resistance(160)L/min)	6.0%

## Photo(s) of Sample:



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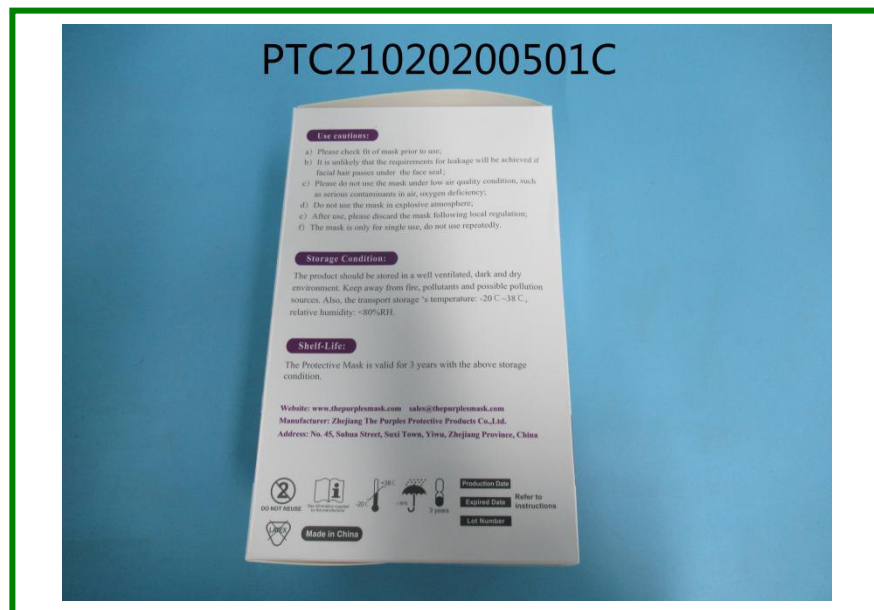


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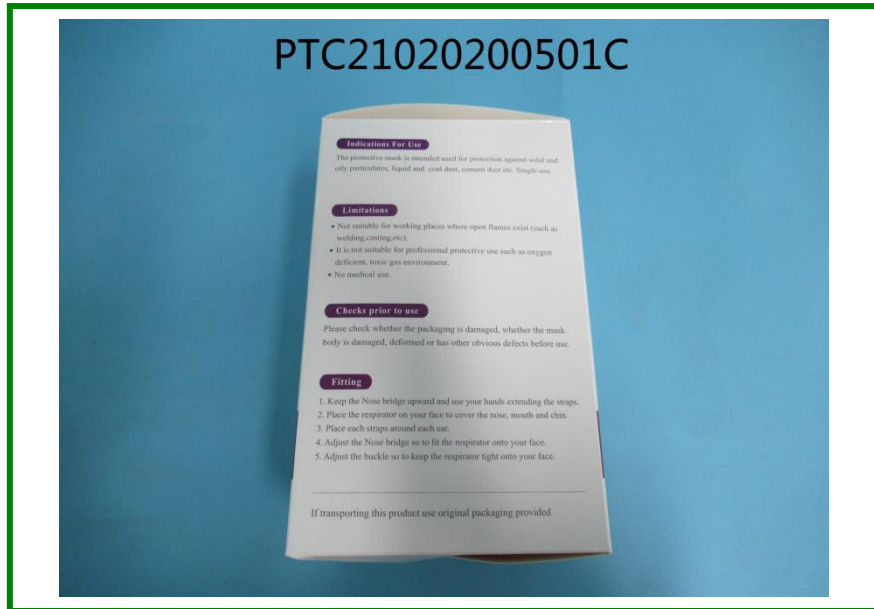


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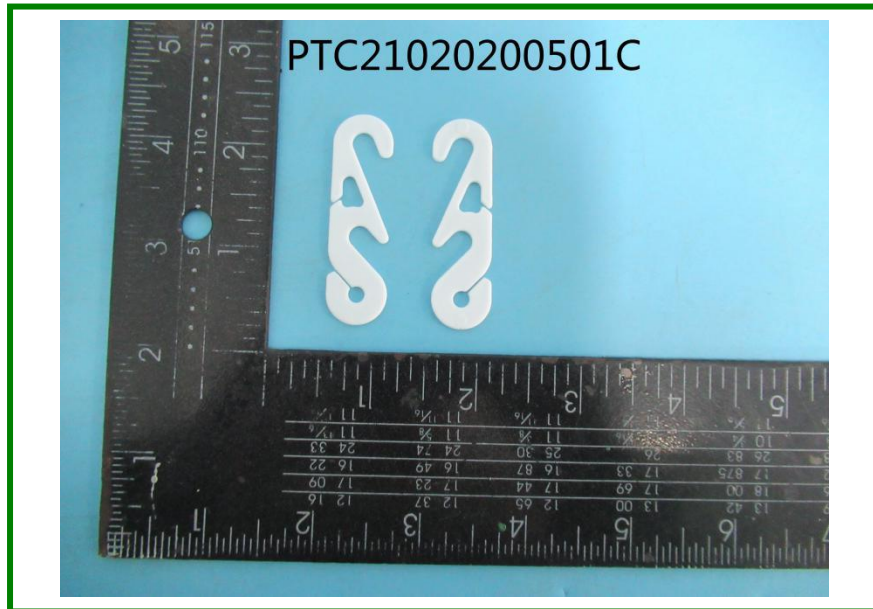


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