

Prüfbericht-Nr.: <i>Test report no.:</i>	CN22BJAZ 001	Auftrags-Nr.: <i>Order no.:</i>	244378407 30	Seite 1 von 21 Page 1 of 21
Kunden-Referenz-Nr.: <i>Client reference no.:</i>	N/A	Auftragsdatum: <i>Order date:</i>	2021-12-01	
Auftraggeber: <i>Client:</i>	TOPTEC CO., LTD. 122. Asanvalley-ro, Dunpo-myeon, Asan-si, Chungcheongnam-do, Republic of Korea			
Prüfgegenstand: <i>Test item:</i>	Filtering Half Masks			
Bezeichnung / Typ-Nr.: <i>Identification / Type no.:</i>	Breeze Mask			
Auftrags-Inhalt: <i>Order content:</i>	EU Type Examination			
Prüfgrundlage: <i>Test specification:</i>	EN 149:2001+A1:2009 Respiratory protective devices – Filtering half masks to protect against particles - Requirements, testing and marking			
Wareneingangsdatum: <i>Date of sample receipt:</i>	2021-12-01 & 2021-12-20 2022-01-19			
Prüfmuster-Nr.: <i>Test sample no.:</i>	A003173563-001, A003186818-001 A003200005-001			
Prüfzeitraum: <i>Testing period:</i>	2021-12-01 – 2022-01-29			
Ort der Prüfung: <i>Place of testing:</i>	TÜV Rheinland (Shanghai) Co., Ltd			
Prüflaboratorium: <i>Testing laboratory:</i>	TÜV Rheinland (Shanghai) Co., Ltd			
Prüfergebnis*: <i>Test result*:</i>	Pass			
geprüft von: <i>compiled by:</i>		genehmigt von: <i>authorized by:</i>		
Datum: <i>Date:</i>	2022-02-22	Ausstellungsdatum: <i>Issue date:</i>	2022-02-22	
Stellung / Position:	Project Engineer	Stellung / Position:	Authorizer	
Sonstiges / <i>Other:</i>				
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>	Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged</i>			
* Legende:	P(ass) = entspricht o.g. Prüfgrundlage(n)	F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
* Legend:	P(ass) = passed a.m. test specification(s)	F(ail) = failed a.m. test specification(s)	N/A = not applicable	N/T = not tested
<p>Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the above mentioned test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i></p>				

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Anmerkungen
Remarks

1	<p>Alle eingesetzten Prüfmittel waren zum angegebenen Prüfzeitraum gemäß eines festgelegten Kalibrierungsprogramms unseres Prüfhauses kalibriert. Sie entsprechen den in den Prüfprogrammen hinterlegten Anforderungen. Die Rückverfolgbarkeit der eingesetzten Prüfmittel ist durch die Einhaltung der Regelungen unseres Managementsystems gegeben.</p> <p>Detailierte Informationen bezüglich Prüfkonditionen, Prüfequipment und Messunsicherheiten sind im Prüflabor vorhanden und können auf Wunsch bereitgestellt werden.</p> <p><i>The equipment used during the specified testing period was calibrated according to our test laboratory calibration program. The equipment fulfils the requirements included in the relevant standards. The traceability of the test equipment used is ensured by compliance with the regulations of our management system. Detailed information regarding test conditions, equipment and measurement uncertainty is available in the test laboratory and could be provided on request.</i></p>
2	<p>Wie vertraglich vereinbart, wurde dieses Dokument nur digital unterzeichnet. Der TÜV Rheinland hat nicht überprüft, welche rechtlichen oder sonstigen diesbezüglichen Anforderungen für dieses Dokument gelten. Diese Überprüfung liegt in der Verantwortung des Benutzers dieses Dokuments. Auf Verlangen des Kunden kann der TÜV Rheinland die Gültigkeit der digitalen Signatur durch ein gesondertes Dokument bestätigen. Diese Anfrage ist an unseren Vertrieb zu richten. Eine Umweltgebühr für einen solchen zusätzlichen Service wird erhoben.</p> <p><i>As contractually agreed, this document has been signed digitally only. TÜV Rheinland has not verified and unable to verify which legal or other pertaining requirements are applicable for this document. Such verification is within the responsibility of the user of this document. Upon request by its client, TÜV Rheinland can confirm the validity of the digital signature by a separate document. Such request shall be addressed to our Sales department. An environmental fee for such additional service will be charged.</i></p>
3	<p>Prüfklausel mit der Note * wurden an qualifizierte Unterauftragnehmer vergeben und sind unter der jeweiligen Prüfklausel des Berichts beschrieben.</p> <p>Abweichungen von Prüfspezifikation(en) oder Kundenanforderungen sind in der jeweiligen Prüfklausel im Bericht aufgeführt.</p> <p><i>Test clauses with remark of * are subcontracted to qualified subcontractors and described under the respective test clause in the report.</i></p> <p><i>Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report.</i></p>
4	<p>Die Entscheidungsregel für Konformitätserklärungen in diesem Prüfbericht basiert auf der "Null-Grenzwert-Regel" und der "Einfachen Akzeptanz" gemäß ILAC G8:2019 und IEC Guide 115:2021, es sei denn, in der auf Seite 1 dieses Berichts genannten angewandten Norm ist etwas anderes festgelegt oder vom Kunden gewünscht. Dies bedeutet, dass die Messunsicherheit nicht berücksichtigt wird und daher auch nicht im Prüfbericht angegeben wird.</p> <p><i>The decision rule for statements of conformity in this test report is based on the "Zero Guard Band Rule" and "Simple Acceptance" in accordance with ILAC G8:2019 and IEC Guide 115:2021, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report.</i></p>
5	<p>Vorhersehbare Verwendung wurde betrachtet. Zurzeit liegen für das/die Produkt/e weder Schutzklauselverfahren an, noch ist ein erhöhtes Unfallaufkommen bekannt.</p> <p><i>Foreseeable use was considered. Currently neither a safeguard clause procedure has been invoked nor is an increase in accidents known for this / these product (s).</i></p>
6	<p>Anhang ZA dieser Prüfgrundlage sowie Anhang II gemäß Verordnung (EU) 2016/425 wurden betrachtet. Detaillierte Informationen zum Inhalt der zusätzliche Produkthanforderung gemäß Verordnung (EU) 2016/425, Anhang II und III können auf Wunsch bereitgestellt werden, siehe auch letzte Seite(n) dieses Berichtes.</p> <p><i>Annex ZA of this test specification(s) as well as Annex II according to Regulation (EU) 2016/425 have been considered. Detailed information of content of additional product requirements according Regulation (EU) 2016/425, Annex II and III could be provided on request, see also last page(s) of this report.</i></p>

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Produktbeschreibung
Product description

1	Produktdetails Product details	Mask without exhalation valves
2	Artikel / Modell Article / Model	FFP2 NR Protective mask - model Breeze Mask
3	Maße Dimensions	Width: 210 mm; Length: 76 mm
4	Leistungsstufe Performance level	Tested: FFP2 Marked: FFP2
5	Verwendete Materialien Used materials	Color: White 3 fabric layers Material: 1. Outer layer: Polypropylene Spunbond 50g/m ² 2. Filter (nanofiber): 98.4% PET+ 1.6% PVDF 30.5g/m ² 3. Inner layer: Polypropylene Spunbond 20g/m ² Nose band: Polypropylene coated wire, 80mm Ear Strap: 80% Nylon 20% Spandex 155mm Head clip: Polypropylene 20mmx35mm
5	További dokumentumok/ vizsgálati jelentések Further applicable documents/test re	/*1 report no. 244378407a 001 issued 16.12.2021 /*2 report no. 244378407b 001 issued 05.01.2022 /*3 report no. 244378407c 001 issued 29.01.2022
6	Sonstiges Other	Test sample(s), as well sample information, description, product details and intended usage was provided by customer.
7	Prüfmusterbereitstellung: Test sample obtaining	<input checked="" type="checkbox"/> Sending by customer <input type="checkbox"/> Sampling by TÜV Rheinland Group <input type="checkbox"/> others:

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The original text is reproduced only in part. For details, be referred to the original document.

1	Scope		
2	Normative References		
3	Terms and Definitions		
4	Description		
5	Classification		
6	Designation		
7	Requirements		
7.1	General		
7.2	Nominal values and tolerances		
7.3	Visual Inspection		
	The visual inspection shall also include the marking and the information supplied by the manufacturer	Given, details see clause 9 & 10	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
7.4	Packaging		
	Particle filtering half masks shall be offered for sale packaged in such a way that they are protected against mechanical damage and contamination before use. Testing shall be done in accordance with 8.2.	Given, individual package in polybag for each piece. according to the information, masks are packaged in such a way that they are protected against mechanical damage and contamination before use	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
7.5	Material		
	<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>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. Three particle filtering half masks shall be tested.</p> <p>When conditioned in accordance with 8.3.1 and 8.3.2 the particle filtering half mask shall not collapse.</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>/*1 Given</p> <p>Given, no mechanical failure after conditioning, no valve available</p> <p>Given, no collapse</p> <p>Given, no hazard or nuisance for the wearer</p>	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>

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	Testing shall be done in accordance with 8.2.		
7.6 Cleaning and Disinfecting			
	If the particle filtering half mask is designed to be re-usable, the materials used shall withstand the cleaning and disinfecting agents and procedures to be specified by the manufacturer. Testing shall be done in accordance with 8.4 and 8.5. With reference to 7.9.2, after cleaning and disinfecting the re-usable particle filtering half mask shall satisfy the penetration requirement of the relevant class. Testing shall be done in accordance with 8.11.	Mask is not designed to be re-usable	P <input type="checkbox"/> F <input type="checkbox"/> N/A <input checked="" type="checkbox"/> N/T <input type="checkbox"/>
7.7 Practical Performance			
	The particle filtering half mask shall undergo practical performance tests under realistic conditions. These general tests serve the purpose of checking the equipment for imperfections that cannot be determined by the tests described elsewhere in this standard. Where practical performance tests show the apparatus has imperfections related to wearer's acceptance, the test house shall provide full details of those parts of the practical performance tests which revealed these imperfections. Testing shall be done in accordance with 8.4.	/*1 No imperfections were detectable during the practical performance test	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
7.8 Finish of parts			
	Parts of the device likely to come into contact with the wearer shall have no sharp edges or burrs. Testing shall be done in accordance with 8.2.	/*1 No sharp edges or burrs are detectable	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
7.9 Leakage			
7.9.1 Total inward leakage			
	The laboratory tests shall indicate that the particle filtering half mask can be used by the wearer to protect with high probability against the potential hazard to be expected. The total inward leakage consists of three components: face seal leakage, exhalation valve leakage (if exhalation valve 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	/*1 <i>Single values, see Figure 7.9.1 -1</i> <i>50 of 50 individual values do not exceed the limit value of 11 %</i> <i>10 of the 10 arithmetic mean values do not exceed the limit value of 8 %.</i>	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>

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	<p>and, in addition, at least 8 out of the 10 individual wearer arithmetic means for the total inward leakage shall be not greater than</p> <p style="text-align: center;">22 % for FFP1 8 % for FFP2 2 % for FFP3.</p> <p>Testing shall be done in accordance with 8.5.</p>	<p>Values correspond to performance level FFP2</p>	

Tabelle / Figure 7.9.1 -1

Condition	Specimen No.	Subject	Leakage (%)					
			Walk	Head Side/Side	Head Up/Down	Talk	Walk	Mean
As received	1	BM	4.995	3.688	3.682	6.662	5.208	4.847
	2	ACH	5.125	4.087	4.129	5.056	4.828	4.645
	3	ML	4.782	5.003	3.975	5.985	5.122	4.973
	4	LLC	5.663	4.865	4.553	6.123	4.857	5.212
	5	DG	5.792	4.722	4.728	6.775	4.371	5.278
After conditioning	6	SG	3.265	4.147	2.345	3.655	2.613	3.205
	7	YL	4.858	4.038	5.002	5.742	3.998	4.728
	8	KQ	5.092	4.972	4.875	6.123	4.573	5.127
	9	KXH	5.382	5.807	4.065	6.538	5.002	5.359
	10	YY	5.667	4.112	4.723	6.092	4.858	5.090

Tabelle / Figure 7.9.1 -2

Facial Dimension Of Subject (mm)											
Subject	BM	ACH	ML	LLC	DG	SG	YL	KQ	KXH	YY	LL
Face length	135	127	120	120	130	135	115	120	130	130	121
Face width	160	159	133	140	145	155	135	135	155	165	163
Face Depth	130	122	115	115	132	132	118	115	120	143	142
Mouth Width	52	55	52	50	50	55	48	50	52	50	45

*Testperson nach Liste Probandenpool / Test subjects according to subject pool

**Testperson mit Clip / Test subjects with clip

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7.9.2 Penetration of filter material (sodium chloride test)

The penetration of the filter of the particle filtering half mask shall meet the requirements of Table 1.

Table 1 — Penetration of filter material

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

total of 9 samples of particle filtering half masks shall be tested for each aerosol.

Testing in accordance with 8.11 using the Penetration test according to EN 13274-7, shall be performed on:

- 3 samples as received;
- 3 samples after the simulated wearing treatment described in 8.3.1.

Testing in accordance with 8.11 using the Exposure test with a specified mass of test aerosol of 120 mg, and for particle filtering devices claimed to be re-usable additionally the Storage test, according to EN 13274-7, shall be performed:

- for non-re-usable devices on:
3 samples after the test for mechanical strength in accordance with 8.3.3 followed by temperature conditioning in accordance with 8.3.2.
- for re-usable devices on:
3 samples after the test for mechanical strength in accordance with 8.3.3 followed by temperature conditioning in accordance with 8.3.2. and followed by one cleaning and disinfecting cycle according to the manufacturer's instruction.

/*2 mask not re-usable

Zustand / condition	Muster Nr. / Sample no	Durchlass/ Penetration bei /at 95 l/min [%]
Fabrikfrisch / as received	*AR -1	1.184
	*AR -2	1.625
	*AR -3	1.420
Gebrauchs- simulation/ Simulated wearing	*SW -4	1.379
	*SW -5	1.556
	*SW -6	1.643
Mech. Widerstand. + Temperatur- kond. / Mechanical strength + Temperature conditioned	*MST C -7	1.826
	*MST C -8	2.133
	*MST C -9	2.026

Maximum penetration = 2.133 %

Values correspond to performance level FFP2

- P
F
N/A
N/T

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7.9.2 Penetration of filter material (paraffin oil test)

The penetration of the filter of the particle filtering half mask shall meet the requirements of Table 1.

Table 1 — Penetration of filter material

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

total of 9 samples of particle filtering half masks shall be tested for each aerosol.

Testing in accordance with 8.11 using the Penetration test according to EN 13274-7, shall be performed on:

- 3 samples as received;
- 3 samples after the simulated wearing treatment described in 8.3.1.

Testing in accordance with 8.11 using the Exposure test with a specified mass of test aerosol of 120 mg, and for particle filtering devices claimed to be re-usable additionally the Storage test, according to EN 13274-7, shall be performed:

- c. for non-re-usable devices on:
3 samples after the test for mechanical strength in accordance with 8.3.3 followed by temperature conditioning in accordance with 8.3.2.
- d. for re-usable devices on:
3 samples after the test for mechanical strength in accordance with 8.3.3 followed by temperature conditioning in accordance with 8.3.2. and followed by one cleaning and disinfecting cycle according to the manufacturer's instruction.

/*2 mask not re-usable

Zustand / condition	Muster Nr. / Sample no	Durchlass/ Penetration bei /at 95 l/min l%
Fabrikfrisch / as received	*AR-10	0.618
	*AR-11	0.553
	*AR-12	0.630
Gebrauchs- simulation/ Simulated wearing	*SW-13	0.601
	*SW-14	0.606
	*SW-15	0.563
Mech. Widerstand + Temperatur- kond. / Mechanical strength + Temperatur e conditioned	*MSTC-16	2.463
	*MSTC-17	2.111
	*MSTC-18	2.285

Maximum penetration = 2.463 %

Values correspond to performance level FFP2

- P
- F
- N/A
- N/T

7.10 Compatibility with skin

Materials that may come into contact with the wearer's skin shall not be known to be likely to cause irritation or any other adverse effect to health.

Testing shall be done in accordance with 8.4 and 8.5.

/*1

During the practical performance test, no skin irritations were detectable

- P
- F
- N/A
- N/T

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7.11 Flammability

	<p>The material used shall not present a danger for the wearer and shall not be of highly flammable nature. When tested, the particle filtering half mask shall not burn or not to continue to burn for more than 5 s after removal from the flame. The particle filtering half mask does not have to be usable after the test.</p> <p>Testing shall be done in accordance with 8.6.</p>	<p>/ *1</p> <table border="1" data-bbox="981 571 1388 1265"> <thead> <tr> <th>Zustand / condition</th> <th>Muster Nr. / Sample no</th> <th>Brennen / burn</th> <th>Weiterbrennen / burn after removal</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Fabrik-frisch / as received</td> <td>1</td> <td>Nein /no</td> <td>1.2 sec</td> </tr> <tr> <td>2</td> <td>Nein /no</td> <td>1.2 sec</td> </tr> <tr> <td rowspan="2">Temperatur kond./ Temperature conditioned</td> <td>3</td> <td>Nein /no</td> <td>1.3 sec</td> </tr> <tr> <td>4</td> <td>Nein /no</td> <td>1.2 sec</td> </tr> </tbody> </table> <p>The particle filtering half mask do not burn or are not to continuing to burn for more than 5 s after removal from the flame.</p>	Zustand / condition	Muster Nr. / Sample no	Brennen / burn	Weiterbrennen / burn after removal	Fabrik-frisch / as received	1	Nein /no	1.2 sec	2	Nein /no	1.2 sec	Temperatur kond./ Temperature conditioned	3	Nein /no	1.3 sec	4	Nein /no	1.2 sec	<p>P <input checked="" type="checkbox"/></p> <p>F <input type="checkbox"/></p> <p>N/A <input type="checkbox"/></p> <p>N/T <input type="checkbox"/></p>
Zustand / condition	Muster Nr. / Sample no	Brennen / burn	Weiterbrennen / burn after removal																		
Fabrik-frisch / as received	1	Nein /no	1.2 sec																		
	2	Nein /no	1.2 sec																		
Temperatur kond./ Temperature conditioned	3	Nein /no	1.3 sec																		
	4	Nein /no	1.2 sec																		

7.12 Carbon dioxide content of the inhalation air

	<p>The carbon dioxide content of the inhalation air (dead space) shall not exceed an average of 1,0 % (by volume).</p> <p>Testing shall be done in accordance with 8.7.</p>	<p>/ *1</p> <table border="1" data-bbox="981 1635 1388 2072"> <thead> <tr> <th>Zustand / condition</th> <th>Muster Nr./ Sample no</th> <th>CO₂-Gehalt / CO₂ content [Vol.-%]</th> </tr> </thead> <tbody> <tr> <td rowspan="3">Fabrikfrisch / as received</td> <td>*AR -1</td> <td>0.77</td> </tr> <tr> <td>*AR -2</td> <td>0.76</td> </tr> <tr> <td>*AR -3</td> <td>0.75</td> </tr> <tr> <td colspan="2">Mittelwert / Mean value</td> <td>0.76</td> </tr> </tbody> </table> <p>The average value of 1.0 Vol-% is not exceeded</p>	Zustand / condition	Muster Nr./ Sample no	CO ₂ -Gehalt / CO ₂ content [Vol.-%]	Fabrikfrisch / as received	*AR -1	0.77	*AR -2	0.76	*AR -3	0.75	Mittelwert / Mean value		0.76	<p>P <input checked="" type="checkbox"/></p> <p>F <input type="checkbox"/></p> <p>N/A <input type="checkbox"/></p> <p>N/T <input type="checkbox"/></p>
Zustand / condition	Muster Nr./ Sample no	CO ₂ -Gehalt / CO ₂ content [Vol.-%]														
Fabrikfrisch / as received	*AR -1	0.77														
	*AR -2	0.76														
	*AR -3	0.75														
Mittelwert / Mean value		0.76														

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7.13 Head Harness			
	<p>The head harness shall be designed so that the particle filtering half mask can be donned and removed easily.</p> <p>The head harness shall be adjustable or self-adjusting and shall be sufficiently robust to hold the particle filtering half mask firmly in position and be capable of maintaining total inward leakage requirements for the device.</p> <p>Testing shall be done in accordance with 8.4 and 8.5.</p>	<p>/*1</p> <p>The head harness is designed so that the mask can be donned and removed easily</p> <p>The head harness can hold the mask in place to provide a tight fit.</p>	<p>P <input checked="" type="checkbox"/></p> <p>F <input type="checkbox"/></p> <p>N/A <input type="checkbox"/></p> <p>N/T <input type="checkbox"/></p>
7.14 Field of Vision			
	<p>The field of vision is acceptable if determined so in practical performance tests.</p> <p>Testing shall be done in accordance with 8.4.</p>	<p>/*1</p> <p>The subjects evaluated the field of vision as acceptable.</p>	<p>P <input checked="" type="checkbox"/></p> <p>F <input type="checkbox"/></p> <p>N/A <input type="checkbox"/></p> <p>N/T <input type="checkbox"/></p>
7.15 Exhalation valve(s)			
	<p>A particle filtering half mask may have one or more exhalation valve(s), which shall function correctly in all orientations. Testing shall be done in accordance with 8.2 and 8.9.1.</p> <p>If an exhalation valve is provided it shall be protected against or be resistant to dirt and mechanical damage and may be shrouded or may include any other device that may be necessary for the particle filtering half mask to comply with 7.9.</p> <p>Testing shall be done in accordance with 8.2. Exhalation valve(s), if fitted, shall continue to operate correctly after a continuous exhalation flow of 300 l/min over a period of 30 s. Testing shall be done in accordance with 8.3.4.</p> <p>When the exhalation valve housing is attached to the faceblank, it shall withstand axially a tensile force of 10 N applied for 10 s.</p> <p>Testing shall be done in accordance with 8.8.</p>	<p>No exhalation valve present</p>	<p>P <input type="checkbox"/></p> <p>F <input type="checkbox"/></p> <p>N/A <input checked="" type="checkbox"/></p> <p>N/T <input type="checkbox"/></p>
7.16 Breathing Resistance			
	<p>The breathing resistances apply to valved and valveless particle filtering half masks and shall meet the requirements of Table 2.</p>	<p>Single values, see Figure 7.16 -1, 7.16-2 and 7.16-3</p>	<p>P <input checked="" type="checkbox"/></p> <p>F <input type="checkbox"/></p> <p>N/A <input type="checkbox"/></p> <p>N/T <input type="checkbox"/></p>

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Testing shall be done in accordance with 8.9.

Table 2 — 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

Values correspond to
performance levels FFP2

Tabelle / Figure 7.16-1 Atemwiderstand fabrikfrisch / Breathing resistance as received

Flow rate (l/min)		Resistance (mbar)														
		Specimen 1					Specimen 2					Specimen 3				
As received		A	B	C	D	E	A	B	C	D	E	A	B	C	D	E
Inhalation	30	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	95	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Exhalation	160	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1

Tabelle / Figure 7.16-2 Gebrauchssimulation / Simulated wearing treatment

Simulated wearing treatment		Specimen 4					Specimen 5					Specimen 6				
		A	B	C	D	E	A	B	C	D	E	A	B	C	D	E
Inhalation	30	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	95	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Exhalation	160	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1

Tabelle / Figure 7.16-3 Temperaturkonditioniert / Temperature conditioned

Temperature conditioned		Specimen 7					Specimen 8					Specimen 9				
		A	B	C	D	E	A	B	C	D	E	A	B	C	D	E
Inhalation	30	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	95	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Exhalation	160	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9

- A: gerade aussehend / facing directly ahead;
- B: senkrecht nach oben sehend / facing vertically upwards;
- C: senkrecht nach unten sehend / facing vertically downwards;
- D: auf der linken Seite liegend / lying on the left side;
- E: auf der rechten Seite liegend / lying on the right side

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7.17 Clogging			
7.17.1 General			
	<p><i>For single shift use devices, the clogging test is an optional test. For re-usable devices the test is mandatory.</i></p> <p><i>Devices designed to be resistant to clogging, shown by a slow increase of breathing resistance when loaded with dust, shall be subjected to the treatment described in 8.10.</i></p> <p><i>The specified breathing resistances shall not be exceeded before the required dust load of 833 mg·h/m³ is reached.</i></p>	<p>The mask is for single shift use and clogging is not claimed</p>	P <input type="checkbox"/> F <input type="checkbox"/> N/A <input checked="" type="checkbox"/> N/T <input type="checkbox"/>
7.17.2 Breathing Resistance			
7.17.2.1 Valved particle filtering half masks			
	<p><i>After clogging the inhalation resistances shall not exceed</i></p> <ul style="list-style-type: none"> • <i>FFP1: 4 mbar</i> • <i>FFP2: 5 mbar</i> • <i>FFP3: 7 mbar</i> <p><i>at 95 l/min continuous flow; The exhalation resistance shall not exceed 3 mbar at 160 l/min continuous flow.</i></p> <p><i>Testing shall be done in accordance with 8.9.</i></p>	<p>The mask is for single shift use and clogging is not claimed</p>	P <input type="checkbox"/> F <input type="checkbox"/> N/A <input checked="" type="checkbox"/> N/T <input type="checkbox"/>
7.17.2.2 Valveless particle filtering half masks			
	<p><i>After clogging the inhalation and exhalation resistances shall not exceed</i></p> <ul style="list-style-type: none"> • <i>FFP1: 3 mbar</i> • <i>FFP2: 4 mbar</i> • <i>FFP3: 5 mbar</i> <p><i>at 95 l/min continuous flow.</i></p> <p><i>Testing shall be done in accordance with 8.9.</i></p>	<p>The mask is for single shift use and clogging is not claimed</p>	P <input type="checkbox"/> F <input type="checkbox"/> N/A <input checked="" type="checkbox"/> N/T <input type="checkbox"/>

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7.17.3 Penetration of filter material

All types (valved and valveless) of particle filtering half masks claimed to meet the clogging requirement shall also meet the requirements given in 7.9.2, for the Penetration test according to EN 13274-7, after the clogging treatment.

Testing shall be done in accordance with 8.11 using EN 13274-7.

Penetration of filter material (sodium chloride test) after clogging

The penetration of the filter of the particle filtering half mask shall meet the requirements of Table 1.

Table 1 — Penetration of filter material

Classification	E) 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

total of 3 samples of particle filtering half masks shall be tested for each aerosol.

Testing in accordance with 8.11 using the Penetration test according to EN 13274-7, shall be performed on:

- 1 sample as received;
- 2 samples after temperature conditioning

The mask is for single shift use and clogging is not claimed

P
F
N/A
N/T

Penetration of filter material (paraffin oil test) after clogging

The penetration of the filter of the particle filtering half mask shall meet the requirements of Table 1.

Table 1 — Penetration of filter material

Classification	E) 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

total of 3 samples of particle filtering half masks shall be tested for each aerosol.

Testing in accordance with 8.11 using the Penetration test according to EN 13274-7, shall be performed on:

- 1 sample as received;
- 2 samples after temperature conditioning

The mask is for single shift use and clogging is not claimed

P
F
N/A
N/T

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7.18 Demountable parts			
	<p>All demountable parts (if fitted) shall be readily connected and secured, where possible by hand.</p> <p>Testing shall be done in accordance with 8.2.</p>	<p>/*1</p> <p>The head clip is readily connected and secured</p>	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>

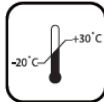

8	Testing		
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9	Marking		
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9.1	Packaging		
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








	<p>The following information shall be clearly and durably marked on the smallest commercially available packaging or legible through it if the packaging is transparent.</p> <p>a) The name, trademark or other means of identification of the manufacturer or supplier</p> <p>b) Type-identifying marking.</p> <p>c) Classification: The appropriate class (FFP1, FFP2 or FFP3) followed by a single space and then: "NR" if the particle filtering half mask is limited to single shift use only. Example: FFP3 NR, or "R" if the particle filtering half mask is re-usable. Example: FFP2 R D."</p> <p>d) The number and year of publication of this European Standard.</p> <p>e) At least the year of end of shelf life. The end of shelf life may be informed by a pictogram as shown in Figure 12a, where yyyy/mm indicates the year and month.</p> <p>f) The sentence 'see information supplied by the manufacturer', at least in the official language(s) of the country of destination, or by using the pictogram as shown in Figure 12b.</p>	<p>a) given</p> <p style="font-size: small;">Manufacturer : TOPTEC Co., Ltd. 122, Asanvalley-ro, Dunpo-myeon, Asan-si, Chungcheongnam-do, Republic of Korea</p> <p>b) given</p> <p style="background-color: #4a5568; color: white; padding: 5px; text-align: center; font-weight: bold;">Breeze Mask</p> <p>c) given</p> <p style="background-color: #4a5568; color: white; padding: 5px; text-align: center; font-weight: bold;">FFP2 NR</p> <p>d) given</p> <p style="background-color: #4a5568; color: white; padding: 5px; text-align: center; font-weight: bold;">EN 149:2001 + A1:2009</p> <p>e) given</p> <p style="font-size: small;">Expiry date 01/2025</p> <p>f) given</p> <div style="text-align: center;">  <p style="font-size: x-small;">See the information provided by the manufacture</p> </div>	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
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	<p>g) The manufacturer's recommended conditions of storage (at least the temperature and humidity) or equivalent pictogram, as shown in Figures 12c and 12d.</p> <p>h) The packaging of those particle filtering half masks passing the dolomite clogging test shall be additionally marked with the letter "D". This letter shall follow the classification marking preceded by a single space. Example FFP2 R D"</p>	<p>g) given</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>The temperature range of storage condition</p> </div> <div style="text-align: center;">  <p>Maximum relative humidity of storage condition</p> </div> </div> <p>h) NA</p>	
9.2 Particle filtering half mask			
	<p>Particle filtering half masks complying with this European Standard shall be clearly and durably marked with the following:</p> <p>a) The name, trademark or other means of identification of the manufacturer or supplier.</p> <p>b) Type-identifying marking.</p> <p>c) The number and year of publication of this European Standard.</p> <p>d) Classification: The appropriate class (FFP1, FFP2 or FFP3) followed by a single space and then: "NR" if the particle filtering half mask is limited to single shift use only. Example: FFP3 NR, or "R" if the particle filtering half mask is re-usable. Example: FFP2 R D.</p> <p>e) If appropriate the letter D (dolomite) in accordance with clogging performance. This letter shall follow the classification marking preceded by a single space (see 9.2.4). Examples FFP3 NR D, FFP2 R D</p> <p>f) Sub-assemblies and components with considerable bearing on safety shall be marked so that they can be identified.</p>	<p>a) given</p> <div style="border: 1px solid gray; padding: 2px; background-color: #f0f0f0; margin-bottom: 5px;">TOPTEC Co., Ltd.</div> <p>b) given</p> <div style="border: 1px solid gray; padding: 2px; background-color: #f0f0f0; margin-bottom: 5px;">Breeze Mask</div> <p>c) given</p> <div style="border: 1px solid gray; padding: 2px; background-color: #f0f0f0; margin-bottom: 5px;">EN149:2001 + A1 : 2009</div> <p>d) given</p> <div style="border: 1px solid gray; padding: 2px; background-color: #f0f0f0; margin-bottom: 5px;">FFP2 NR</div> <p>e) NA</p> <p>f) NA</p>	<p>P <input checked="" type="checkbox"/></p> <p>F <input type="checkbox"/></p> <p>N/A <input type="checkbox"/></p> <p>N/T <input type="checkbox"/></p>

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10	Information to be supplied by the manufacturer
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	<p>a) Information supplied by the manufacturer shall accompany every smallest commercial available package.</p> <p>b) Information supplied by the manufacturer shall be at least in the official language(s) of the country of destination.</p> <p>c) The information supplied by the manufacturer shall contain all information necessary for trained and qualified persons on</p> <ul style="list-style-type: none"> • application/limitations; • the meaning of any colour coding; • checks prior to use; • donning, fitting; • use; • maintenance (e.g. cleaning, disinfecting), if applicable; • storage; • the meaning of any symbols/pictograms used of the equipment. 	<p>a) given, information supplied by the manufacturer accompany each polybag package</p> <p>b) given only available in English language</p> <p>-given</p> <p>Protects the respiratory tract from harmful particulate matter and infectious agents such as yellow dust and fine dust.</p> <p>-NA</p> <p>-given</p> <div style="background-color: #e0e0e0; padding: 5px; text-align: center; font-weight: bold; font-size: small;">Checks prior to use</div> <ul style="list-style-type: none"> ● Respirators must be used for their intended purpose. ● Please check the expiration date and use it ● Please check whether this product meets the European standard FFP2/NR rating and is suitable for the intended purpose. ● Please check the mask for damage and do not use it if it is. <p>-given</p> <div style="display: flex; justify-content: space-around; font-size: x-small;"> <div style="text-align: center;">  Wear the mask to cover your nose and chin. </div> <div style="text-align: center;">  Hook each strap over your ear and press the nose piece with the fingers to lock them in place. </div> <div style="text-align: center;">  Hook each strap over your head with a head clip. </div> <div style="text-align: center;">  Make sure the mask is in close contact with your face without air leakage. </div> </div> <p>-given</p> <div style="display: flex; justify-content: space-around; font-size: x-small;"> <div style="text-align: center;">  Wear the mask to cover your nose and chin. </div> <div style="text-align: center;">  Hook each strap over your ear and press the nose piece with the fingers to lock them in place. </div> <div style="text-align: center;">  Hook each strap over your head with a head clip. </div> <div style="text-align: center;">  Make sure the mask is in close contact with your face without air leakage. </div> </div> <p>-NA</p> <p>-given</p> <div style="display: flex; justify-content: space-around; font-size: x-small;"> <div style="text-align: center;">  The temperature range of storage condition </div> <div style="text-align: center;">  Maximum relative humidity of storage condition </div> </div> <p>-given</p> <div style="display: flex; justify-content: space-between; font-size: x-small;"> <div style="text-align: center;">  Do not Reuse </div> <div style="text-align: center;">  Do not Wash </div> <div style="text-align: center;">  Expiry date 01/2025 </div> <div style="text-align: center;">  See the information provided by the manufacture </div> <div style="text-align: center;">  The temperature range of storage condition </div> <div style="text-align: center;">  Maximum relative humidity of storage condition </div> <div style="text-align: center;">  European Authorized Representative </div> </div>	<p>P <input checked="" type="checkbox"/></p> <p>F <input type="checkbox"/></p> <p>N/A <input type="checkbox"/></p> <p>N/T <input type="checkbox"/></p>
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	<p>d) <i>The information shall be clear and comprehensible. If helpful, illustrations, part numbers, marking shall be added.</i></p> <p>e) <i>Warning shall be given against problems likely to be encountered, for example:</i></p> <ul style="list-style-type: none"> • <i>fit of particle filtering half mask (check prior to use);</i> • <i>it is unlikely that the requirements for leakage will be achieved if facial hair passes under the face seal;</i> • <i>air quality (contaminants, oxygen deficiency);</i> • <i>use of equipment in explosive atmosphere.</i> <p>f) <i>The information shall provide recommendations as to when the particle filtering half mask shall be discarded.</i></p> <p>g) <i>For devices marked "NR", a warning shall be given that the particle filtering half mask shall not be used for more than one shift</i></p>	<p>-given</p> <p>The information is given by text and pictures</p> <p>-given</p> <p>Make sure the mask is in close contact with your face without air leakage.</p> <p>-given</p> <p>As facial hair reduces the protection offered it is recommended that these respirators are used by clean shaven personnel only</p> <p>-given</p> <p>Do not use in an enclosed place with an oxygen concentration of less than 18%</p> <p>-given</p> <p>Do not use at explosive atmosphere</p> <p>-given</p> <p>Please replace the mask when the mask no longer fits snugly along the face, when the elastic bands start wearing out, or when the mask starts falling below the nose</p> <p>-given</p> <p>Do not Reuse</p>	
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The following shows the additional requirements according the Regulation (EU) 2016/425 and ProdSG (Product Safety Act)

Are the additional requirements fulfilled?	Ja / Yes <input checked="" type="checkbox"/> Nein / No <input type="checkbox"/>
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Photo Documentation



Photo 1: Package Artwork

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Photo 2: Mask front view

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Photo 3: Mask back view

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Photo 4: Marking on mask

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