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|---|--------------------------------|
| Test item particulars.....: | |
| Temperature | 23°C |
| Relative humidity..... | 40-50% |
| Atmospheric pressure..... | (9.0±0.2)kPa |
| Mass of the equipment (kg) | See instruction |
| Possible test case verdicts: | |
| - test case does not apply to the test object | N/A |
| - test object does meet the requirement | P (Pass) |
| - test object does not meet the requirement | F (Fail) |
| Testing | |
| Date of receipt of test item..... | Mar. 04, 2020 |
| Date (s) of performance of tests | Mar. 04, 2020 to Mar. 20, 2020 |

| |
|--|
| <p>General remarks:</p> <p>The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory. "(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report.</p> <p>Throughout this report a <input checked="" type="checkbox"/> comma / <input type="checkbox"/> point is used as the decimal separator.</p> <p>Clause numbers between brackets refer to clauses in report</p> <p>Attachment No. 1: 1 pages of photo.</p> |
| <p>General product information:</p> <p>The product is KN-95 Mask, without valve.</p> |

EN149

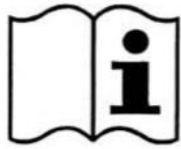
| Clause(s) | Test(s) | Test Remarks | Result |
|------------------|---|---------------------------------|---------------|
| 4 | Description | | P |
| | A particle filtering half mask covers the nose and mouth and the chin and may have inhalation and/or exhalation valve. | Without Valve | P |
| 5 | Classification | | P |
| | FFP1, FFP2 and FFP3 | FFP2 | P |
| 6 | Designation | | P |
| 7 | Requirements | | N/A |
| 7.1 | General | | P |
| | In all tests all test samples shall meet the requirements. | | P |
| 7.2 | Nominal values and tolerances | 25°C | P |
| 7.4 | Packaging | | P |
| | 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. | Closed plastic bag | P |
| 7.5 | Material | See 8.3.1, 8.3.2, 8.2 | P |
| 7.6 | Cleaning and disinfecting | | N/A |
| 7.7 | Practical performance | | P |
| | The particle filtering half mask shall undergo practical performance tests under realistic conditions. | | P |
| 7.8 | Finish of parts | No sharp edges or burrs on mask | P |
| 7.9 | Leakage | | P |
| | the particle filtering half mask can be used by the wearer to protect with high probability against the potential hazard to be expected. | | 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 | | P |

| | 25 % for FFP1 11 % for FFP2 5 % for FFP3 | 8% | P | | | | | | | | | | | | | | | | | |
|----------------|---|---|---|--|-------------------------------|----------------------------|--|-----------|-----------|------|----|----|------|---|---|------|---|---|--|--|
| | at least 8 out of the 10 individual wearer arithmetic means for the total inward leakage shall be not greater than | | P | | | | | | | | | | | | | | | | | |
| | 22 % for FFP1 8 % for FFP2 2 % for FFP3 | 6% | P | | | | | | | | | | | | | | | | | |
| 7.9.2 | Penetration of filter material | | P | | | | | | | | | | | | | | | | | |
| | Sodium chloride test, 95 l/min | 4.6%, Test 9 samples | P | | | | | | | | | | | | | | | | | |
| | Paraffin oil test 95 l/min | 3.5%, Test 9 samples | P | | | | | | | | | | | | | | | | | |
| | <table border="1"> <thead> <tr> <th rowspan="2">Classification</th> <th colspan="2">F0 Maximum penetration of test aerosol F0</th> </tr> <tr> <th>Sodium chloride test 95 l/min</th> <th>Paraffin oil test 95 l/min</th> </tr> </thead> <tbody> <tr> <td></td> <td>% max.</td> <td>% max.</td> </tr> <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> | Classification | F0 Maximum penetration of test aerosol F0 | | Sodium chloride test 95 l/min | Paraffin oil test 95 l/min | | % max. | % max. | FFP1 | 20 | 20 | FFP2 | 6 | 6 | FFP3 | 1 | 1 | | |
| Classification | F0 Maximum penetration of test aerosol F0 | | | | | | | | | | | | | | | | | | | |
| | Sodium chloride test 95 l/min | Paraffin oil test 95 l/min | | | | | | | | | | | | | | | | | | |
| | % max. | % max. | | | | | | | | | | | | | | | | | | |
| FFP1 | 20 | 20 | | | | | | | | | | | | | | | | | | |
| FFP2 | 6 | 6 | | | | | | | | | | | | | | | | | | |
| FFP3 | 1 | 1 | | | | | | | | | | | | | | | | | | |
| 7.10 | Compatibility with skin | | P | | | | | | | | | | | | | | | | | |
| | 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. | | P | | | | | | | | | | | | | | | | | |
| 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. | <4s | P | | | | | | | | | | | | | | | | | |
| 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). | <0.82% | P | | | | | | | | | | | | | | | | | |
| 7.13 | Head harness | | P | | | | | | | | | | | | | | | | | |
| | The head harness shall be designed so that the particle filtering half mask can be donned and removed easily. | Removed easily and donned, self-adjusting. Elastic rope fixing | P | | | | | | | | | | | | | | | | | |
| 7.14 | Field of vision | | P | | | | | | | | | | | | | | | | | |
| | The field of vision is acceptable if determined so in practical performance tests. | Does not affect line of sight | P | | | | | | | | | | | | | | | | | |
| 7.15 | Exhalation valve(s) | | N/A | | | | | | | | | | | | | | | | | |
| | A particle filtering half mask may have one or more exhalation valve(s), which shall function correctly in all orientations. | Without valve | N/A | | | | | | | | | | | | | | | | | |

| | | | |
|----------|---|--|-----|
| | 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 | >300 l/min Tensile force 10N, 10s No damaged, Function no change. | N/A |
| 7.16 | Breathing resistance | | P |
| | The breathing resistances apply to valved and valveless particle filtering half masks and shall meet the requirements | | P |
| | inhalation | | P |
| | 30 l/min | 0,63 | P |
| | 95 l/min | 1.93 | P |
| | exhalation | | P |
| | 160 l/min | 2.32 | P |
| | | | |
| 7.17 | Clogging | | N/A |
| 7.17.1 | General | | N/A |
| | For single shift use devices, the clogging test is an optional test. For re-usable devices the test is mandatory | | N/A |
| | Devices designed to be resistant to clogging, shown by a slow increase of breathing resistance when loaded with dust | | N/A |
| | The specified breathing resistances shall not be exceeded before the required dust load of 833 mg · h/m ³ is reached. | | N/A |
| 7.17.2 | Breathing resistance | | N/A |
| 7.17.2.1 | Valved particle filtering half masks | | N/A |
| | FFP1: 4 mbar | | N/A |
| | FFP2: 5 mbar | | N/A |
| | FFP3: 7 mbar | | N/A |
| | at 95 l/min continuous flow | | N/A |
| | The exhalation resistance shall not exceed 3 mbar at 160 l/min continuous flow. | | N/A |
| 7.17.2.2 | Valveless particle filtering half masks | | N/A |
| | After clogging the inhalation and exhalation resistances shall not exceed | | N/A |
| | FFP1: 3 mbar | | N/A |

| | | | |
|--------|--|--|-----|
| | FFP2: 4 mbar | | N/A |
| | FFP3: 5 mbar | | N/A |
| | at 95 l/min continuous flow. | | N/A |
| 7.17.3 | Penetration of filter material | | N/A |
| | All types (valved and valveless) of particle filtering half masks claimed to meet the clogging requirement | | N/A |
| 7.18 | Demountable parts | No demountable parts | N/A |
| | All demountable parts (if fitted) shall be readily connected and secured, where possible by hand. | | N/A |
| 8 | Testing | | P |
| 8.1 | General | | P |
| 8.2 | Visual inspection | | P |
| 8.3.1 | Simulated wearing treatment | Saturated at $(37 \pm 2) ^\circ\text{C}$ | P |
| 8.3.2 | Temperature conditioning | | P |
| | Expose the particle filtering half masks to the following thermal cycle: | | P |
| | for 24 h to a dry atmosphere of $(70 \pm 3) ^\circ\text{C}$; | 70°C 24h | P |
| | for 24 h to a temperature of $(-30 \pm 3) ^\circ\text{C}$; | -30°C 3h | P |
| 8.3.3 | Mechanical strength | | P |
| 8.3.4 | Flow conditioning | | P |
| 8.4 | Practical performance | Test 2 samples | P |
| | head harness comfort | Good | P |
| | security of fastenings | Good | P |
| | field of vision | Does not affect line of sight | P |
| | any other comments reported by the wearer on request. | No other comments | P |
| 8.4.2 | Walking test | 6km/h, 10 min | P |
| 8.4.3 | Work simulation test | | P |

| | <p>Exhalation resistance</p> <p>Seal the particle filtering half mask on the Sheffield dummy head. Measure the exhalation resistance at the opening for mouth of the dummy head using the adapter shown in Figure 6 and a breathing machine adjusted to 25 cycles/min and 2.0 l/stroke or a continuous flow 160 l/min. Use a suitable pressure transducer.</p> <p>Measure the exhalation resistance with the dummy head successively placed in 5 defined positions:</p> <ul style="list-style-type: none"> - facing directly ahead - facing vertically upwards - facing vertically downwards - lying on the left side - lying on the right side <p>8.9.3 Inhalation resistance</p> <p>Test the inhalation resistance at 30 l/min and 95 l/min continuous flow.</p> | | P | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------------------|--|------------------------------|-------------------|------------------------|--|--------------------------------------|--------------------------------|------------------------|-------------------|---------------|--|---------------|--|-----|-----|---|------|---|----|---|------|---|----|---|----|---|----|---|----|---|---|---|----|--|--|----|----|---|---|----|----|--|--|----|----|----|---|----|---|--|-----|
| 8.10 | Clogging | Test 3 samples dolomite dust | N/A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <p>The working area of the test chamber has a suggested square section of 650 mm × 650 mm.</p> <p>The breathing machine has a displacement of 2,0 l/stroke. The exhaled air shall pass a humidifier in the exhaled air circuit, such that the exhaled air temperature, measured at the position of the sample particle filtering half mask is $(37 \pm 2) ^\circ\text{C}$ and 95 % R.H. minimum.</p> | | N/A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <table border="1"> <thead> <tr> <th colspan="2">Coulter counter</th> <th colspan="2">Sedimentation analysis</th> </tr> <tr> <th>Size (equivalent spherical diameter)</th> <th>% Number particles oversize</th> <th>Size (Stokes diameter)</th> <th>% weight oversize</th> </tr> <tr> <th>μm</th> <th></th> <th>μm</th> <th></th> </tr> </thead> <tbody> <tr> <td>0,7</td> <td>100</td> <td>1</td> <td>99,5</td> </tr> <tr> <td>1</td> <td>80</td> <td>2</td> <td>97,5</td> </tr> <tr> <td>2</td> <td>30</td> <td>3</td> <td>95</td> </tr> <tr> <td>3</td> <td>17</td> <td>5</td> <td>85</td> </tr> <tr> <td>5</td> <td>7</td> <td>8</td> <td>70</td> </tr> <tr> <td></td> <td></td> <td>10</td> <td>50</td> </tr> <tr> <td>9</td> <td>2</td> <td>12</td> <td>26</td> </tr> <tr> <td></td> <td></td> <td>14</td> <td>10</td> </tr> <tr> <td>12</td> <td>1</td> <td>18</td> <td>1</td> </tr> </tbody> </table> | Coulter counter | | Sedimentation analysis | | Size (equivalent spherical diameter) | % Number particles oversize | Size (Stokes diameter) | % weight oversize | μm | | μm | | 0,7 | 100 | 1 | 99,5 | 1 | 80 | 2 | 97,5 | 2 | 30 | 3 | 95 | 3 | 17 | 5 | 85 | 5 | 7 | 8 | 70 | | | 10 | 50 | 9 | 2 | 12 | 26 | | | 14 | 10 | 12 | 1 | 18 | 1 | | N/A |
| Coulter counter | | Sedimentation analysis | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Size (equivalent spherical diameter) | % Number particles oversize | Size (Stokes diameter) | % weight oversize | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| μm | | μm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0,7 | 100 | 1 | 99,5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 80 | 2 | 97,5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 30 | 3 | 95 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | 17 | 5 | 85 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | 7 | 8 | 70 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 10 | 50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | 2 | 12 | 26 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 14 | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | 1 | 18 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8.11 | Penetration of filter material | | P | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | Marking | | P | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9.1 | Packaging | | P | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | | | |
|-------|---|---------|-----|
| 9.1.1 | The name, trademark or other means of identification of the manufacturer or supplier. | | P |
| 9.1.2 | Type-identifying marking. | | P |
| 9.1.3 | Classification | | P |
| 9.1.3 | FFP1, FFP2 or FFP3 "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." | FFP2 NR | P |
| 9.1.4 | The number and year of publication of this European Standard | | P |
| 9.1.5 | the year of end of shelf life. | | P |
| 9.1.6 | 'see information supplied by the manufacturer'  | | P |
| 9.1.7 | The manufacturer's recommended conditions of storage | | P |
| 9.1.8 | The packaging of those particle filtering half masks passing the dolomite clogging test shall be additionally marked with the letter "D" | | N/A |
| 9.2 | Particle filtering half mask | | P |

P

Photos

