PPE TEST REPORT

For

Nantong HUA KE LI Knitting Co.,Ltd

Product Name: Disposable three-layer protective mask

Model: Disposable three-layer protective mask

Prepared For: Nantong HUA KE LI Knitting Co.,Ltd
500Meters Jianghai Bridge Shuangdian Town,Rudong County,Nantong City,Jiangsu Province

Prepared By : Ningbo HTK Testing Technology Co.,Ltd
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TEST REPORT DECLARATION

Applicant :	Nantong HUA KE LI Knitting Co.,Ltd
Address :	500Meters Jianghai Bridge Shuangdian Town,Rudong County,Nantong City,Jiangsu Province
Manufacturer :	Nantong HUA KE LI Knitting Co.,Ltd
Address :	500Meters Jianghai Bridge Shuangdian Town,Rudong County,Nantong City,Jiangsu Province
EUT Description :	Disposable three-layer protective mask
Model No. :	Disposable three-layer protective mask
Technical Data :	--
Remark :	N.A

Test Procedure Used:
EN 149:2001+A1:2009

The test results of this report relate only to the tested sample identified in this report.

Prepared by : _____ (Jane)

Checked by : _____ (Tina)

Approved by : _____ (Mark)

HTK Testing Technology Co.,Ltd Ningbo HTK APPROVED

Property	Method	Principle / Requirements	Result
Classification	EN 149:2001+ A1:2009 Clause 5	Particle filtering half masks are classified according to their filtering efficiency and their maximum total inward leakage. There are three classes of devices:FFP1, FFP2 and FFP3.	Pass. FFP1
Designation	EN 149:2001+ A1:2009 Clause 6	Particle filtering half masks meeting the requirements of this European Standard shall be designated in the following manner: Particle filtering half mask EN 149, year of publication, classification, option (where "D" is an option for a non re-useable particle filtering half mask and mandatory for re-useable particle filtering half mask).	Pass.
Nominal values and tolerances	EN 149:2001+ A1:2009 Clause 7.2	Unless otherwise specified, the values stated in this European Standard are expressed as nominal values. Except for temperature limits, values which are not stated as maxima or minima shall be subject to a tolerance of ±5 %. Unless otherwise specified, the ambient temperature for testing shall be (16 - 32) °C, and the temperature limits shall be subject to an accuracy of ± 1 °C.	Pass.
Visual inspection	EN 149:2001+ A1:2009 Clause 7.3	The visual inspection shall also include the marking and the information supplied by the manufacturer.	Pass
Packaging	EN 149:2001+ A1:2009 Clause 7.4& Clause 8.2	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.	Pass
Material	EN 149:2001+ A1:2009 Clause 7.5& Clause 8.3	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. 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. When conditioned in accordance with 8.3.1 and 8.3.2 the particle filtering half mask shall not collapse. Any material from the filter media released by the air flow through the filter shall not constitute a hazard or nuisance for the wearer. Testing shall be done in accordance with 8.2	Pass.

Cleaning and disinfecting	EN 149:2001+ A1:2009 Clause 7.6& Clause 8.4& Clause 8.5	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.	Pass
Practical performance	EN 149:2001+ A1:2009 Clause 7.7& Clause 8.4	Walking test The subjects wearing normal working clothes and wearing the particle filtering half mask shall walk at a regular rate of 6 km/h on a level course. The test shall be continuous, without removal of the particle filtering half mask, for a period of 10 min. Work simulation test The individual activities shall be arranged so that sufficient time is left for the comments prescribed. a) walking on the level with headroom of (1,3 ± 0,2) m for 5 min; b) crawling on the level with headroom of (0,70 ± 0,05) m for 5 min; c) filling a small basket (see Figure 1, approximate volume = 8 l) with chippings or other suitable material from a hopper which stands 1,5 m high and has an opening at the bottom to allow the contents to be shovelled out and a further opening at the top where the basket full of chippings is returned. The subject shall stoop or kneel as he wishes and fill the basket with chippings. He shall then lift the basket and empty the contents back into the hopper. This shall be done 20 times in 10 min.	Pass. The particle filtering half mask can undergo practical performance tests under realistic conditions.

Property	Method	Principle / Requirements	Result
Finish of parts	EN 149:2001+ A1:2009 Clause 7.8& Clause 8.2	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.	Pass. No sharp edges and burrs.
Total inward leakage	EN 149:2001+ A1:2009 Clause 7.9.1& Clause 8.5	1)walking for 2 min without head movement or talking; 2) turning head from side to side (approx. 15 times), as if inspecting the walls of a tunnel for 2 min; 3) moving the head up and down (approx. 15 times), as if inspecting the roof and floor for 2 min; 4) reciting the alphabet or an agreed text out loud as if communicating with a colleague for 2 min; 5)walking for 2 min without head movement or talking. The leakage P shall be calculated from measurements made over the last 100s of each of the exercise periods to avoid carry over of results from one exercise to the other. $$P(\%)=\frac{C_2}{C_1}\times\left(\frac{t_{IN}+t_{EX}}{t_{IN}}\right)\times 100$$ where $C_1$is the challenge concentration $C_2$is the measured mean concentration in the breathing zone of the test subject $t_{IN}$is the total duration of inhalation t_{EX} is the total duration of exhalation	Pass. Total inward leakage=7.89 %
Penetration of filter material	EN 149:2001+ A1:2009 Clause 7.9.2	The device shall be mounted in a leaktight manner on a suitable adaptor and subjected to the test(s), ensuring that components of the device that could affect filter penetration values such as valves and harness attachment points are exposed to the challenge aerosol. Testing of penetration, exposure and storage shall be done in accordance with EN13274-7. The penetration of the filter of the particle filtering half mask shall meet the requirements of Table 1. **Table 1 — Penetration of filter material**	Pass. Sodium chloride test 95 l/min=19.79% Paraffin oil test 95 l/min=19.89%
Compatibility with skin	EN 149:2001+ A1:2009 Clause 7.10r	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.	Pass. No adverse effect.

Classification	Maximum penetration of test aerosol	
	Sodium chloride test 95 l/min % max.	Paraffin oil test 95 l/min % max.
FFP1	20	20
FFP2	6	6
FFP3	1	1

Property	Method	Principle / Requirements	Result
Flammability	EN 149:2001+ A1:2009 Clause 7.11& Clause 8.6	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. Testing shall be done in accordance with 8.6.	Pass. The particle filtering half mask does not burn for more than 5 s after removal from the flame.
Carbon dioxide content of the inhalation air	EN 149:2001+ A1:2009 Clause 7.12& Clause 8.7	The carbon dioxide content of the inhalation air (dead space) shall not exceed an average of 1,0 % (by volume). Testing shall be done in accordance with 8.7.	Pass. Carbon dioxide content of the inhalation air=0.97%

Property	Method	Principle / Requirements	Result
Head harness	EN 149:2001+ A1:2009 Clause 7.13	The head harness shall be designed so that the particle filtering half mask can be donned and removed easily. 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.	Pass
Field of vision	EN 149:2001+ A1:2009 Clause 7.14	The field of vision is acceptable if determined so in practical performance tests.	Pass.
Exhalation valve(s)	EN 149:2001+ A1:2009 Clause 7.15	A particle filtering half mask may have one or more exhalation valve(s), which shall function correctly in all orientations. 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. When the exhalation valve housing is attached to the faceblank, it shall withstand axially a tensile force of 10 N applied for 10 s.	N.A.
Breathing resistance	EN 149:2001+ A1:2009 Clause 7.16& Clause 8.9	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 continous flow 160 l/min. Use a suitable pressure transducer. Measure the exhalation resistance with the dummy head successively placed in 5 defined positions: - facing directly ahead - facing vertically upwards - facing vertically downwards - lying on the left side - lying on the right side Test the inhalation resistance at 30 l/min and 95 l/min continuous flow. The breathing resistances apply to valved and valveless particle filtering half masks and shall meet the requirements of Table 2.	Pass. Inhalation 30 l/min=0.58 Inhalation 95 l/min=2.07 Exhalation=2.97

Property	Method	Principle / Requirements	Result
		Table 2 — Breathing resistance Classification | Maximum permitted resistance (mbar): inhalation 30 l/min, 95 l/min; exhalation 160 l/min FFP1 | 0,6 | 2,1 | 3,0 FFP2 | 0,7 | 2,4 | 3,0 FFP3 | 1,0 | 3,0 | 3,0	
Clogging	EN 149:2001+ A1:2009 Clause 7.17& Clause 8.10	Convey dust from the distributor to the dust chamber where it is dispersed into the air stream of 60 m /h. Fit the sample particle filtering half mask in a leaktight manner to a dummy head or a suitable filter holder located in the dust chamber. Connect the breathing machine and humidifier to the sample and operate for the specified testing time. The concentration of dust in the test chamber may be measured by drawing air at 2 l/min through a sampling probe equipped with a pre-weighed, high efficiency filter (open face, diameter 37 mm) located near the test sample, as shown in Figure 10. Calculate the dust concentration from the weight of dust collected, the flow rate through the filter and the time of collection.	N.A.
Demountable parts	EN 149:2001+ A1:2009 Clause 7.18	All demountable parts (if fitted) shall be readily connected and secured, where possible by hand.	N.A.

ANNEX A: Photo-documentation

Photo 1 View ☑front	
Photo 2 View ☑back	

Report Remark

1. There is any discrepancy in this report, please after receipt of the report made in writing within 15 days.
2. This report is considered invalidated without the Special Seal for Inspection of the HTK. At any time ,without the written approval of HTK report shall not be part of the copy detection.
3. The authorized agencies responsible for the authenticity of the representative of the sample and the information, otherwise, the unit does not undertake any responsibility.
4. This report is only responsible for the test sample, not as a social justice data usage. Only for the purpose of customer entrustment, scientific research, teaching or internal quality control.For the use of test data and the use of direct or indirect losses and legal consequences, My company does not undertake any economic and legal responsibility.
5. Do not repetitive or retest samples, entrust unit giving up of retest. The Report refers only to the tested sample (Sample information is provided by customer) and does not apply to the bulk, unless the sampling has been carried out by the Company and is stated as such in the Report.
6. The Company shall not be called or be liable to be called to give evidence or testimony on the Report in a court of law without its prior written consent, unless required by the relevant governmental authorities, laws or court orders.
7. In the event of the improper use of the report as determined by the Company, the Company reserves the right to withdraw it, and to adopt any other additional remedies which may be appropriate. Samples submitted for testing are accepted on the understanding that the Report issued cannot form the basis of, or be the instrument for, any legal action against the Company.
8. Clients wishing to use the Report in court proceedings or arbitration shall inform the Company to that effect prior to submitting the sample for testing.
9. Fifteen working days later,my company has the right to the complete test after processing the measured samples.
10. My company to ensure that the test objective, impartial to entrust units of the commercial information, technical documents such as commercial secrets confidential obligations.The data and information will be disposed of after the aforementioned retention period has elapsed. Under no circumstances shall we provide any data and information which has been disposed of after retention period. Under no circumstances shall we be liable for damage of any kind, including (but not limited to) compensatory damages, lost profits, lost data, or any form of special, incidental, indirect, consequential or punitive damages of any kind, whether based on breach of contract of warranty, tort (including negligence), product liability or otherwise, even if we are informed in advance of the possibility of such damages.

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