# Test Report

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## TECHNICAL ASSESSMENT REPORT

**REPORT DATE / NO:** 14.08.2020 / 2163-KKD-1277

**Manufacturer:** Wenzhou Junyue Bag Making Co., Ltd.
**Address:** Building 5, Yellow River Industrial Park, No. 4699 Century Avenue, Longgang City, Wenzhou City, Zhejiang Province, China

This report is for the, given above, manufacturer prepared according to the test results obtained from Jiangsu Guojian Testing Technology Co., Ltd. accredited by CNAS (China National Accreditation Service), signatory to ILAC MRA, with number L-10118 for the product identified below, dated 15.07.2020 with Serial M (2020)WSZ FHL NO.7015 based on EN 149: 2001 + A1: 2009 standard and the technical file dated 29 July, 2020 Version 01 provided by the manufacturer.

The technical file of the manufacturer, and risk evaluation against the essential health safety requirements and the test report evaluated for their relation with Essential Requirements of Personel Protective Equipment Regulation and found to be appropriate.

This report is an annex and an integral part of the EU Type Examination Certificate issued to the manufacturer. The test results and issued certificate belongs only to the tested model. The technical report consists of a total of 6 pages.

**Product Description:** Particle Filtering Half Mask
**Classification:** FFP3 NR
**Brand Name:** JUNYUE **Model:** JW078

Junyue CE2163
EN149:2001+A1:2009 FFP3 NR
Model: JW078
Manufacturer: Wenzhou Junyue Bag Making Co., Ltd.

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## ESSENTIAL HEALTH and SAFETY REQUIREMENTS GIVEN IN EUROPEAN UNION REGULATION EU 2016/425 CORRESPONDING RISKS FOR THE PRODUCT

**1.1. Design principles**
**1.1.1. Ergonomics**
PPE must be so designed and manufactured that in the foreseeable conditions of use for which it is intended the user can perform the risk related activity normally while enjoying appropriate protection of the highest possible level.

**1.1.2. Levels and classes of protection**
**1.1.2.1. Highest level of protection possible**
The optimum level of protection to be taken into account in the design is that beyond which the constraints by the wearing of the PPE would prevent its effective use during the period of exposure to the risk or normal performance of the activity.

**1.1.2.2. Classes of protection appropriate to different levels of risk**
Where differing foreseeable conditions of use are such that several levels of the same risk can be distinguished, appropriate classes of protection must be taken into account in the design of the PPE.

**1.2. Innocuousness of PPE**
**1.2.1. Absence of risks and other inherent nuisance factors**
PPE must be so designed and manufactured as to preclude risks and other nuisance factors under foreseeable conditions of use.

**1.2.1.1. Suitable constituent materials**
The materials of which the PPE is made, including any of their possible decomposition products, must not adversely affect the health or safety of users.

**1.2.1.2. Satisfactory surface condition of all PPE parts in contact with the user**
Any part of the PPE that is in contact or is liable to come into contact with the user when the PPE is worn must be free of rough surfaces, sharp edges, sharp points and the like which could cause excessive irritation or injuries.

**1.2.1.3. Maximum permissible user impediment**
Any impediment caused by PPE to movements to be made, postures to be adopted and sensory perception must be minimized; nor must PPE cause movements which endanger the user or other persons.

**1.3 Comfort and effectiveness**
**1.3.1. Adaptation of PPE to user morphology**
PPE must be designed and manufactured in such a way as to facilitate its correct positioning on the user and to remain in place for the foreseeable period of use, bearing in mind ambient factors, the actions to be carried out and the postures to be adopted. For this purpose, it must be possible to adapt the PPE to fit the morphology of the user by all appropriate means, such as adequate adjustment and attachment systems or the provision of an adequate range of sizes.

**1.3.2. Lightness and design strength**
PPE must be as light as possible without prejudicing design strength and efficiency.
Apart from the specific additional requirements which they must satisfy in order to provide adequate protection against the risks in question (see 3), PPE must be capable of withstanding the effects of ambient phenomena inherent under the foreseeable conditions of use.

**1.4. Information supplied by the manufacturer**
The notes that must be drawn up by the former and supplied when PPE is placed on the market must contain all relevant information on:

a) In addition to the name and addresof the manufacturer and/or his authorized representative established in the Community
b) Storage, use, cleaning, maintenance, servicing and disinfection. cleaning, maintenance or disinfectant protection recommended by manufacturers must have no adverse effect on PPE or users when applied in accordance with the relevant instructions;
c) Performance as recorded during technical tests to check the levels or classes of protection provided by the PPE in question;
d) Suitable PPE accessories and the characteristics of appropriate spare parts;
e) The classes of protection appropriate to different levels of risk and the corresponding limits of use;
f) The obsolescence deadlinor period of obsolescence of PPEor certain of its components;
g) The type of packaging suitable for transport;
h) The significance of any markings(see 2.12)
i) Where appropriate the references of the Directives applied inaccordance with Article5(6) (b);
j) The name, address and identification number of the notified body involved in the design stage of the PPE

These notes, which must be precise and comprehensible, must be provided at least in the official language(s) of the member state of destination

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**2. ADDITIONAL REQUIREMENTS COMMON TO SEVERAL CLASSES OR TYPES OF PPE**

**2.1. PPE incorporating adjustment systems**
If PPE incorporates adjustment systems, the latter must be designed and manufactured so that, after adjustment, they do not become undone unintentionally in the foreseeable conditions of use.

**2.3. PPE for the face, eyes and respiratory system**
Any restriction of the user's face, eyes, field of vision or respiratory system by the PPE shall be minimized.
The screens for those types of PPE must have a degree of optical neutrality that is compatible with the degree of precision and the duration of the activities of the user.
If necessary, such PPE must be treated or provided with means to prevent mining.cap
Models of PPE intended for users requiring sight correction must be compatible with the wearing of spectacles or contact lenses.

**2.4. PPE subject to ageing**
If it is known that the design performance of new PPE may be significantly affected by ageing, the month and year of manufacture and/or, if possible, the month and year of obsolescence must be indelibly and unambiguously marked on each item of PPE placed on the market and on its packaging.
If the manufacturer is unable to give an undertaking with regard to the useful life of the PPE, his instructions must provide all the information necessary to enable the purchaser or user to establish a reasonable obsolescence month and year, taking into account the quality level of the model and the effective conditions of storage, use, cleaning, servicing and maintenance.
Where appreciable and rapid deterioration in PPE performance is likely to be caused by ageing resulting from the periodic use of a cleaning process recommended by the manufacturer, the latter must, if possible, affix a marking to each item of PPE placed on the market indicating the maximum number of cleaning operations that may be carried out before the equipment needs to be inspected or discarded. Where such a marking is not affixed, the manufacturer must give that information in his instructions.

**2.6. PPE for use in potentially explosive atmospheres**
PPE intended for use in potentially explosive atmospheres must be designed and manufactured in such a way that it cannot be the source of an electric, electrostatic or impact-induced arc or spark likely to cause an explosive mixture to ignite.

**2.8. PPE for intervention in very dangerous situations**
The instructions supplied by the manufacturer with PPE for intervention in very dangerous situations must include, in particular, data intended for competent, trained persons who are qualified to interpret them and ensure their application by the user.
The instructions must also describe the procedure to be adopted in order to verify that PPE is correctly adjusted and functional when worn by the user.
Where PPE incorporates an alarm which is activated in the absence of the level of protection normally provided, the alarm must be designed and placed so that it can be perceived by the user in the foreseeable conditions of use.

**2.9. PPE incorporating components which can be adjusted or removed by the user**
Where PPE incorporates components which can be attached, adjusted or removed by the user for replacement purposes, such components must be designed and manufactured so that they can be easily attached, adjusted and removed without tools.

**2.12. PPE bearing one or more identification or recognition marks directly or indirectly relating to health and safety**
The identification or recognition marks directly or indirectly relating to health and safety affixed to these types or classes of must preferably take the form of harmonized pictograms or ideograms and must rem ain perfectly legible throughout the foreseeablemeful life of the PPE. In addition, these marks must be complete, precise and comprehensible so as to prevent any misinterpretation; in particular, where such marks incorporate words or sentences, the latter must appear in the official language(s) of the Member State where the equipment is to be used.
If PPE (or a PPE component) is too small to allow al lor part of the necessary marking to be affixed, the relevant information must be mentioned on the packing and in the manufacturer's notes.

**3. ADDITIONAL REQUIREMENTS SPECIFIC TO PARTICULAR RISKS**
**3.10.1. Respiratory protection**
PPE intended for the protection of the respiratory system must make it possible to supply the user with breathable air when exposed to a polluted atmosphere and/or an atmosphere having an inadequate oxygen concentration.
The breathable air supplied to the user by PPE must be obtained by appropriate means, for example after filtration of the polluted air through PPE or by supply from an external unpolluted source.
The constituent materials and other components of those types of PPE must be chosen or designed and incorporated so as to ensure appropriate user respiration and respiratory hygiene for the period of wear concerned under the foreseeable conditions of use.
The leak-tightness of the facepiece and the pressure drop on inspiration and, in the case of the filtering devices, purification capacity must keep contaminant penetration from a polluted atmosphere low enough not to be prejudicial to the health or hygiene of the user.
The PPE must bear details of the specific characteristics of the equipment which, in conjunction with the instructions, enable a trained and qualified user to employ the PPE correctly.
In the case of filtering equipment, the manufacturer's instructions must also indicate the time limit for the storage of new filters kept in their original packaging.

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Technical Assessment of EN 149: 2001 + A1: 2009 Standard and other Standards it refers to, Clauses Corresponding to the (EU) 2016/425 Directive

| Conforming to EN 149:2001 + A1:2009 Standard Requirements | |
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| *Article 5* | **Classification:** Particle Filtering Half Mask<br>The mask subject to evaluation based on the test results and technical file provided by the manufacturer is classified as;<br>Filtering Efficiency and maximum Total Inward Leakage: Classified as **FFP3**<br>Mask is classified for single shift use, **NR** |
| *Article 7.4* | **Packing:** Particle filtering half masks are packaged to protect them from contamination before use and with cardboard boxes to prevent mechanical damage. The packaging design and the product is considered to withstand the foreseeable conditions of use based on the visual inspection results given in the test report. |
| *Article 7.5* | **Material:** Materials used in particle filtering half masks, according to the simulated wearing treatment and temperature conditioning results. It is understood it withstands handling and wear even the period for which the particle filtering half mask is designed to be used, it suffered mechanical failure of the facepiece or straps, any material from the filter media released by the air flow through the filter has not constitute a hazard or nuisance for the wearer. The manufacturer declares that the materials used in manufacturing of the mask does not have an adverse effect to the health and safety of users. |
| *Article 7.6* | Based on the test results, the masks did not collapse when subject to simulated wearing and temperature conditioning. No ruinous situation is reported during the practical performance tests by human subjects.<br>**Cleaning and Disinfection:** Particle filtering half mask is not designed to be re-usable. No cleaning or disinfection procedure provided by the manufacturer. |
| *Article 7.7* | **Practical Performance:**<br>The test report indicates that the human subjects did not face any difficulty in performing the exercises while they were wornnd by the sample masks, in walking test or work simulation tests. The wearers did not report any failure by means of head harness / straps/ earloops/ comfort, severity of fastenings and field of vision. Also no imperfections reported during total inward tests about the comfort, field of vision and fastening issues.<br>Assessed Elements / Positive / Negative / Requirements in accordance with EN 149:2001 + A1:2009 and Result<br>1.Head harness comfort / 2 / 0 / Positive results are obtained from the test subjects<br>2. Severity of fastenings / 2 / 0 / No imperfections<br>3.Field of vision / 2 / 0<br>**Conditioning:** (A.R.) As Received, original |
| *Article 7.8* | **Finish of Parts:** Particle filtering half masks, which are likely to come into contact with the user, do not have sharp edges and do not contain burrs. |
| *Article 7.9.1* | **Total Inward Leakage:**<br>The Total Inward Leakage test is conducted by 10 individual in an aerosol chamber with a walking load, and samples are taken during the conduction of the exercises defined in the standard. The samples used in the test are subjected to the conditioning required in the standard as Temperature conditioning and as received. The face dimensions of the subjects are also reported. The measurement details for each subject and for each exercise are available in the test report.<br>It was reported that;<br>All 50 exercise measurement results are smaller or equal to 5%, the values varies between 0,9 % and 1,8 %.<br>All 10 individual's arithmetic mean is smaller or equal to 2%, the values varies between 1,1 % and 1,4 %.<br>**According to the reported results, the product meets the limits for FFP3 classification.** |
| *Article 7.9.2* | **Penetration of filter material:** Sodium Chloride Testing<br>Condition / No. of Sample / Sodium Chloride Testing 95 Limits max (%) / Requirements in accordance with EN 149:2001 + A1:2009 / Result<br>(A.R.) / - / 0,1<br>(A.R.) / - / 0,1<br>(A.R.) / - / 0,2<br>(S.W.) / - / 0,1<br>(S.W.) / - / 0,1<br>(S.W.) / - / 0,2<br>(M.S. T.C.) / - / 0,2<br>(M.S. T.C.) / - / 0,2<br>(M.S. T.C.) / - / 0,3<br>FFP3 ≤ 20 %<br>FFP2 ≤ 6 %<br>FFP1 ≤ 1 %<br>Filtering half masks fulfill the requirements of the standard EN EN 149:2001 + A1:2009 given in 7.9.2 in range of the **FFP1, FFP2 and FFP3** classes.<br>95 Limits = 1,6 dm³ m⁻²<br>**Conditioning:** (M.S.) Mechanical Strength<br>(T.C.) Temperature Conditioning<br>(A.R.) As Received, original<br>(S.W.) Simulated wearing treatment |

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| *Article 7.9.2* | **Penetration of filter material:** Paraffin Oil Testing<br>Condition / No. of Sample / Paraffin Oil Testing 95 Limits max (%) / Requirements in accordance with EN 149:2001 + A1:2009 / Result<br>(A.R.) / - / 0,2<br>(A.R.) / - / 0,1<br>(A.R.) / - / 0,2<br>(S.W.) / - / 0,2<br>(S.W.) / - / 0,2<br>(S.W.) / - / 0,2<br>(M.S. T.C.) / - / 0,4<br>(M.S. T.C.) / - / 0,5<br>(M.S. T.C.) / - / 0,4<br>FFP3 ≤ 20 %<br>FFP2 ≤ 6 %<br>FFP1 ≤ 1 %<br>Filtering half masks fulfill the requirements of the standard EN EN 149:2001 + A1:2009 given in 7.9.2 in range of the **FFP1, FFP2 and FFP3** classes.<br>**Conditioning:** (M.S.) Mechanical Strength<br>(T.C.) Temperature Conditioning<br>(A.R.) As Received, original<br>(S.W.) Simulated wearing treatment |
| *Article 7.10* | **Compatibility with skin:** In Practical Performance report, the likelihood of mask materials in contact with the skin causing irritation or other adverse effect on health was not reported. |
| *Article 7.11* | **Flammability:**<br>Condition / No of Sample / Visual inspection / Requirements in accordance with EN 149:2001 + A1:2009 / Result<br>(A.R.) / - / Burn for 0.4s / Filtering half mask shall not burn or not continue to burn for more than 5 s after removed from the flame / **Passed**<br>(A.R.) / - / Burn for 0.5s<br>(T.C.) / - / Burn for 0.4s<br>(T.C.) / - / Burn for 0.5s<br>**Passed**<br>Filtering half masks fulfill requirements of the standard<br>**Conditioning:** (A.R.) As Received, original<br>(T.C.) Temperature Conditioning |
| *Article 7.12* | **Carbon dioxide content of the inhalation air:**<br>Condition / No. of Sample / $CO_2$ content of the inhalation air [%] by volume / Average $CO_2$ content of the inhalation air / Requirements in accordance with EN 149:2001 + A1:2009 / Result<br>(A.R.) / - / 0.7015<br>(A.R.) / - / 0.7027<br>(A.R.) / - / 0.7050<br>0.70 [%]<br>$CO_2$ content of the inhalation air shall not exceed an average of 1,0% by volume<br>**Passed**<br>Filtering half masks fulfill requirements of the standard<br>**Conditioning:** (A.R.) As Received, original |
| *Article 7.13* | **Head harness:** In Practical Performance and TIL test reports no adverse effects have been reported for donning and remove of the mask also the results of these tests indicates that the ear loops / head harnesses are capable of holding the mask firmly enough. |
| *Article 7.14* | **Field of vision:** In Practical Performance report, no adverse effects were reported for the field of vision availability when the mask is wornnd. |
| *Article 7.15* | **Exhalation Valve(s):** The model under inspection have no valves. |
| *Article 7.16* | **Breathing Resistance:** Inhalation<br>The overall evaluation in the figures gathered for 9 different samples 3 as received, 3 with temperature conditioning, and 3 simulated wearing treatment conditioned complies with the limits given in the standard for **FFP1, FFP2 and FFP3** classes. This is valid for inhalation results for 30 Litres, 95 Litres and exhalation at 160 Litres.<br>**Passed.** |

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| *Article 7.17* | **Clogging:** This test is not applied to Particle Filtering Half Mask which is not reusable.<br>*(For single shift use devices, the clogging test is optional test. For re-usable devices test is mandatory.)* |
| *Article 7.18* | **Demountable Parts:** There are no demountable parts on the product. |
| *Article 8* | **Testing:** All tests conducted according to Clause 8 of this standard is available in the test report and are evaluated in this report for qualification and classification of the mask. |
| *Article 9* | **Marking – Packaging:** Necessary markings are available on the product package (box). The manufacturer, the trademark and the model are is clearly visible. The type of the mask and the classification including the status of re-usability, the reference to EN 149:2001+A1:2009 standard, the shelf life, using and storage instructions and pictograms and CE mark are available on the product package. The above evaluation is based on the technical document for packaging and marking, for box design. Verified on the Annex 9.1 of the technical file.<br>The technical documentation for mask design (drawing) also evaluated for marking requirements, drawing J0078. The mask template (drawing) indicates that the mask will carry information about the trademark and the name of the manufacturer (Sun yue / Wenzhou Junyue Bag Making Co., Ltd.), type of mask, the reference to EN 149:+A1:2009 standard and classification including the re-usability of the mask. The manufacturer declares that the mask will not carry any other marking on the mask. The mask do not have sub-assemblies. From the tested sample by the laboratory do not exist necessary marking information or mistakes in the technical documentation, the manufacturer shall follow marking instructions for serial production. Model J0078 drawing exists in the technical file of the manufacturer, Annex 6 of technical file. |
| *Article 10* | **Information to be supplied by the manufacturer:** In each of the smallest commercially available packaging of the product, information (installation instructions) pre-use controls, storage and warnings of limitations, storage and warnings of symbols / pictograms are defined. User instruction document in the technical file found to be appropriate, Annex 8. The manufacturer shall include this documented user information text in every smallest commercially available package. |

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