NPPTL COVID-19 Response: International Respirator Assessment

Manufacturer: BYD Precision Manufacture Co., Ltd.
Model Tested: DG3101
Date Tested: June 5, 2020

These findings pertain to the BYD Precision Manufacture Co., Ltd., model DG3101. The packaging and labeling for this product indicate that it meets GB2626-2006 (the Chinese standard for Respiratory Protective Equipment – Non-Powered Air-Purifying Particle Respirator).

Thirty respirators were submitted for evaluation. The respirators were sampled into groups of ten for evaluation. The samples were tested using a modified version of NIOSH Standard Test Procedure (STP) TEB-APR-STP-0059. This modified assessment plan can be found here.

No certificate of approval was provided with the samples received; therefore, the authenticity of the claims cannot be validated.

The maximum and minimum filter efficiency was 99.78% and 95.03%, respectively. All thirty respirators measured more than 95%.

While the above-listed product classification has similar performance requirements to NIOSH-approved devices, NIOSH does not have knowledge about the sustained manufacturer quality system and product quality control for these products. NIOSH also does not have knowledge about the product’s handling and exposures after leaving its manufacturer’s control.

In addition, this product is an ear loop design. Currently, there are no NIOSH-approved products with ear loops; NIOSH-approved N95s have head bands. Furthermore, limited assessment of ear loop designs, indicate difficulty achieving a proper fit. While filter efficiency shows how well the filter media performs, users must ensure a proper fit is achieved.

This assessment is not a part of the NIOSH respirator approval process and will in no way lead to or preclude NIOSH approval through the official approval process. This assessment was developed as an assessment of the filter efficiency for those respirator’s represented as certified by an international certification authority, other than NIOSH, to support the availability of respiratory protection to US healthcare workers due to the respirator shortage associated with COVID-19. Only particulate filter efficiency was assessed.

The results provided in this letter are specific to the subset of samples that were provided to NPPTL for evaluation.

These results will be used to update the CDC guidance for Crisis Capacity Strategies (during known shortages).
**NPPTL COVID-19 Response: International Respirator Assessment**

**Evaluation of International Respirators**

**Test:** Modified TEB-APR-STP-0059  
**Date Tested:** June 5, 2020  
**Report Prepared:** June 5, 2020  
**Manufacturer:** BYD Precision Manufacture Co., Ltd.  
**Item Tested:** DG3101 (Sample Group 1 of 3)  
**Country of Certification:** China (GB2626-2006)

<table>
<thead>
<tr>
<th>Filter</th>
<th>Flow Rate (Lpm)</th>
<th>Initial Filter Resistance (mmH₂O)</th>
<th>Initial Percent Leakage (%)</th>
<th>Maximum Percent Leakage (%)</th>
<th>Filter Efficiency</th>
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**Minimum Filter Efficiency:** 99.04  
**Maximum Filter Efficiency:** 99.78

- The test method utilized in this assessment is not the NIOSH standard test procedure that is used for certification of respirators. Respirators assessed to this modified test plan do not meet the requirements of STP-0059, and therefore cannot be considered equivalent to N95 respirators that were tested to STP-0059.
- Respirators tested may not be representative of all respirators with the same certification mark. NIOSH has no control over suppliers and distributors of respirators certified by other national or international parties.
- This assessment is not a confirmation that it conforms with any or all of its specifications in accordance with its certification mark.
- This assessment was not a part of the NIOSH approval program. These results do not imply nor preclude a future approval through the NIOSH respirator approval program.

Pictures have been added to the end of this report.
NPPTL COVID-19 Response: International Respirator Assessment

Test: Modified TEB-APR-STP-0059

Date Tested: June 5, 2020

Report Prepared: June 5, 2020

Manufacturer: BYD Precision Manufacture Co., Ltd.

Item Tested: DG3101 (Sample Group 2 of 3)

Country of Certification: China (GB2626-2006)

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Minimum Filter Efficiency: 98.70
Maximum Filter Efficiency: 99.71

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Test: Modified TEB-APR-STP-0059

Date Tested: June 5, 2020

Report Prepared: June 5, 2020

Manufacturer: BYD Precision Manufacture Co., Ltd.

Item Tested: DG3101 (Sample Group 3 of 3)

Country of Certification: China (GB2626-2006)

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</table>

Minimum Filter Efficiency: 95.03  
Maximum Filter Efficiency: 99.61

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KN95 Particulate Respirator

WARNINGS
1. The respirator does not eliminate the risk of contracting any disease or infection.
2. Improper use may lead to illness and even death.
3. Use this product immediately after the package is opened.
4. DO NOT sleep while wearing the respirator.
5. Avoid hand contact with the interior part of the respirator.
6. DO NOT use respirators if they expired.
7. For one-time use only. Dispose the respirator according to regulations.
8. DO NOT use if the package is damaged.

Time use limitation
If the respirator becomes damaged, soiled, or breathing becomes difficult, leave the contaminated area and replace and refit the new respirator.

Important notice
To the extent permitted by law, BYD shall not be liable for any loss or damage including any loss of business, loss of profits, or for any indirect, special, incidental or consequential loss or damage arising from reliance upon any information herein provided by BYD. Nothing in this statement will be deemed to exclude or restrict BYD’s liability for death or personal injury arising from its negligence.

Main materials
- Inner layer: Polypropylene spunbond nonwoven fabric
- Middle layer: Polypropylene melt blown nonwoven
- Outer layer: Polypropylene spunbond nonwoven fabric
- Ear loops: Polyethylene/lycra blend
- Nose clip: Metal wire with Plastic covering

Product model: DC3103
Product meets GB2626-2006 KN95 standard.

Manufactured by
BYD Precision Manufacture Co., Ltd.
Address: No. 3601 Baolong Road, Baoan Industrial City,
Longgang, Shenzhen, China
Tel: +86-755-89688989
BYD CARE

KN95 Particulate Respirator

Description
The BYD KN95 Particulate Respirator is designed to help provide respiratory protection for the user. This product has a filter efficiency of 95% or greater against solid and liquid aerosols free of oil. This product contains no components made from natural rubber latex.

Use Instructions
- For adult use only.
- Do not wash.
- Store in a cool, dry, clean place away from fixing, sun and humidity.
- Store between -20°C and 30°C (4°F and 100°F) with relative humidity below 80%.
- Expiration date: 3 years after production.

Wearing Instructions
- Hold the ear loops in both hands with the metallic strip up.
- Put the respirator against your face covering both nose and mouth.
- Place ear loops around both ears.
- Adjust respirator over nose and under chin.
- Adjust the metallic strip over bridge of nose.
- Make sure the respirator fits properly, covering the nose, mouth and chin.

Fit test
- Place both hands over the respirator.
- Take a deep breath and hold your breath for a few seconds, making sure the respirator collapses inward as you inhale.
- Then exhale and hold your breath for a few seconds, making sure the respirator bulges outward as you exhale.
- If air leaks, reposition the respirator, tighten the metallic strip and reposition the elastic bands for a better fit. Follow steps 1-3 again until a tight seal has been achieved.
- Respirators that have passed the fit test are now safe to use.
- Facial hair or other facial features may prevent the respirator from achieving a proper fit. If a tight seal is not achievable, please DO NOT use this product.
- If you experience difficulty breathing, dizziness, or other symptoms, leave the contaminated area immediately.

2-Step check before use
- Do not use if the packaging has been opened or damaged.
- Check if the elastic bands are in good condition and are not damaged.
- Check that the metallic strip is not broken.
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