

3M Personal Safety Division

Based on this comparison, it is reasonable to consider China KN95, AS/NZ P2, Korea 1st Class, and Japan DS FFRs as “equivalent” to US NIOSH N95 and European FFP2 respirators, for filtering non-oil-based particles such as those resulting from wildfires, PM 2.5 air pollution, volcanic eruptions, or bioaerosols (e.g. viruses). However, prior to selecting a respirator, users should consult their local respiratory protection regulations and requirements or check with their local public health authorities for selection guidance.

Certification/ Class (Standard)	N95 (NIOSH-42C FR84)	FFP2 (EN 149-2001)	KN95 (GB2626-20 06)	P2 (AS/NZ 1716:2012)	Korea 1st Class (KMOEL - 2017-64)	DS (Japan JMHLW- Notification 214, 2018)
Filter performance – (must be ≥ X% efficient)	≥ 95%	≥ 94%	≥ 95%	≥ 94%	≥ 94%	≥ 95%
Test agent	NaCl	NaCl and paraffin oil	NaCl	NaCl	NaCl and paraffin oil	NaCl
Flow rate	85 L/min	95 L/min	85 L/min	95 L/min	95 L/min	85 L/min
Total inward leakage (TIL)* – tested on human subjects each performing exercises	N/A	≤ 8% leakage (arithmetic mean)	≤ 8% leakage (arithmetic mean)	≤ 8% leakage (individual and arithmetic mean)	≤ 8% leakage (arithmetic mean)	Inward Leakage measured and included in User Instructions
Inhalation resistance – max pressure drop	≤ 343 Pa	≤ 70 Pa (at 30 L/min) ≤ 240 Pa (at 95 L/min) ≤ 500 Pa (clogging)	≤ 350 Pa	≤ 70 Pa (at 30 L/min) ≤ 240 Pa (at 95 L/min)	≤ 70 Pa (at 30 L/min) ≤ 240 Pa (at 95 L/min)	≤ 70 Pa (w/valve) ≤ 50 Pa (no valve)
Flow rate	85 L/min	Varied – see above	85 L/min	Varied – see above	Varied – see above	40 L/min
Exhalation resistance - max pressure drop	≤ 245 Pa	≤ 300 Pa	≤ 250 Pa	≤ 120 Pa	≤ 300 Pa	≤ 70 Pa (w/valve) ≤ 50 Pa (no valve)
Flow rate	85 L/min	160 L/min	85 L/min	85 L/min	160 L/min	40 L/min
Exhalation valve leakage requirement	Leak rate ≤ 30 mL/min	N/A	Depressurization to 0 Pa ≥ 20 sec	Leak rate ≤ 30 mL/min	visual inspection after 300 L/min for 30 sec	Depressurization to 0 Pa ≥ 15 sec
Force applied	-245 Pa	N/A	-1180 Pa	-250 Pa	N/A	-1,470 Pa
CO ₂ clearance requirement	N/A	≤ 1%	≤ 1%	≤ 1%	≤ 1%	≤ 1%

3M™ Disposable Respirator 1860, 1860S, N95

Technical Data Sheet



The 1860 and 1860S healthcare respirators are designed to help provide respiratory protection for the wearer against certain airborne particles. They meet CDC guidelines for Mycobacterium tuberculosis exposure control. As disposable particulate respirators, they are intended to reduce wearer exposure to certain airborne particles including those generated by electrocautery, laser surgery, and other powered medical instruments. As surgical masks, they are designed to be fluid resistant to splash and spatter of blood and other infectious materials.

The 1860 and 1860S particulate respirators are personal protective equipment (PPE) that are primarily intended to protect the health care workers by reducing exposure to harmful airborne particles which are small enough to be inhaled – typically particles less than 100 microns in size. These include airborne particles that may contain biological material e.g. Bacillus anthracis, Mycobacterium tuberculosis, mould and the virus that causes Severe Acute Respiratory Syndrome (SARS), and Influenza.

Features

- NIOSH approved N95 rating
- FDA cleared for use as a surgical mask
- Fluid Resistance 80 mmHg
- Flammability Rating Class I
- Adjustable nose clip
- Braided and stapled headbands
- Particulate Respirator and Surgical Mask

Materials

The following materials are used in the production of 1860, 1860S respirators:

Straps	Braided Polyisoprene
Staples	Steel
Nose Clip	Aluminium
Nose Foam	Polyurethane Foam
Filter	Polypropylene/Polyester
Shell	Polypropylene
Coverweb	Polypropylene

This respirator does not contain components made from natural rubber latex.

Maximum mass of products = 11.3g



Use For

- Intended to be worn by operating room personnel during surgical procedures to help protect both the surgical patient and the operating room personnel from transfer of microorganisms, body fluids, and particulate material.
- Always follow *User Instructions* and use in manners as indicated

Do Not Use for

- DO NOT use in industrial settings
- DO NOT use for gases or vapours (i.e. anesthetic gases such as isoflurane or vapours from sterilants such as glutaraldehyde.)
- DO NOT use in any manner not indicated in the *User Instructions*

Approvals and Standards

- NIOSH approved N95 respirator
- Meets NIOSH 42 CFR 84 N95 requirements for a minimum 95% filtration efficiency against solid and liquid aerosols that do not contain oil.
- NIOSH approval number: TC-84A-0006
- FDA cleared for use as a surgical mask
- Health Canada Class I medical device
- Bacterial Filtration Efficiency F2101 >99% BFE
- OSHA Assigned Protection Factor (APF) 10
- Australia TGA approved

Packaging	Product Code	3M Order Code
20 Respirator/box, 6 boxes/case	1860 (Regular size)	AT010607219
20 Respirator/box, 6 boxes/case	1860S (Small size)	XA010000546

Fitting Instructions

Must be followed each time the respirator is worn. Before fitting device, ensure hands are clean.

See Figure 1 below.

All respirator components should be inspected for damage prior to each use.

1. Cup respirator in one hand with nosepiece at fingertips, allow headbands to hang freely below hand.
2. Hold respirator under chin, with nosepiece up.
3. Locate the upper strap across the crown of the head and the lower strap below the ears.
4. Straps must not be twisted.
5. Using both hands, mould noseclip to the shape of the nose to ensure a close fit and good seal. Pinching the noseclip using only one hand may result in less effective respirator performance.
6. The seal of the respirator on the face should be fit-checked before entering the workplace.

Figure 1



Warning

Respirators must not be used until your employer has determined whether usage will be in accordance with manufacturers instructions. The wearer must be trained in the proper fitting and use of this product. Failure to follow all instructions and warnings on the use of this product and/or failure to wear this respirator during all times of exposure can reduce respirator effectiveness and result in illness or death. All respirators should be used in accordance with Australian standard AS/NZS 1715. It is recommended that fit testing be conducted before assigning a respirator to an individual. If you cannot achieve a proper fit, do not enter contaminated areas. Do not use with beards or other facial hair or conditions that prevent a good seal between the face and the sealing surface of the respirator.

Important Notice

To the extent permitted by law, 3M 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 3M. Nothing in this statement will be deemed to exclude or restrict 3M's liability for death or personal injury arising from its negligence.



Warnings and Use Limitations

Always be sure that the complete product is:

- Suitable for the application;
 - Fitted correctly;
 - Worn during all periods of exposure;
 - Replaced when necessary.
- It is recommended that fit testing be conducted before assigning a respirator to an individual. If you cannot achieve a proper fit then do not enter contaminated area. See your supervisor.
 - Inspect respirator before each use to ensure it is in good working condition. Examine all the respirator parts for signs of damage including the two straps, noseclip, nose foam and staples. The respirator should be disposed of immediately upon observation of damaged or missing parts. The respirator should be disposed of immediately upon observation of damaged or missing parts.
 - Leave the contaminated area immediately and contact supervisor if dizziness, irritation or other distress occurs.
 - Dispose of used product in accordance with applicable regulations.
 - All respirators should be used in accordance with local regulations.
 - Do not alter, repair, wash, and abuse or misuse the respirator.
 - Do not use with beards or other facial hair or conditions that prevent a good seal between the face and the sealing edge of the respirator.
 - The respirator can help protect the wearer's lungs against certain airborne contaminants; however, it will not prevent entry through other routes such as the skin or eyes, which would require additional personal protective equipment (PPE).
 - The respirator is designed for occupational/professional use by adults who are properly trained in its use and limitations. The respirator is not designed to be used by children.
 - Individuals with a compromised respiratory system, such as asthma or emphysema, should consult a physician and complete a medical evaluation prior to use.
 - Maximum Operating Temperature: +50 degrees Celsius.
 - The filtration efficiency of the respirator may decrease in the presence of oily mists.

Storage and Transportation

Shelf life of the unopened product is five (5) years from date of manufacture when stored within temperature range of -20°C to +30°C and at less than 80% relative humidity. End of shelf life date is marked on the product packaging. Before initial use, always check that the product is within the stated shelf life. When storing or transporting this product use original packaging provided.