

N95 vs. KN95 respirator masks

In light of protective mask shortages across the United States, the Food and Drug Administration announced on April 3rd that it would allow the use of the KN95 respirator. This infographic aims to compare and contrast between the two models.

	N 9 5	K N 9 5
Filter performance (must be \geq X% efficient)	✓	✓
Test Agent - NaCl (Sodium Chloride)	✓	✓
Flow rate (85L/min)	✓	✓
Total Inward Leakage	N/A	$\leq 8\%$ leakage (arithmetic mean)
Inhalation resistance (max pressure drop)	≤ 343 Pa	≤ 350 Pa
Flow rate (85L/min)	✓	✓
Exhalation resistance (max pressure drop)	≤ 245 Pa	≤ 250 Pa
Flow rate (85L/min)	✓	✓
Exhalation valve leakage req.	Leak rate \leq 30 mL/min	Depressurization to 0 Pa \geq 20 sec
Force applied	-245 Pa	-1180 Pa
CO2 clearance req.	N/A	$\leq 1\%$

GLOSSARY OF TERMS / KEY TAKEAWAYS

The **N95** is the American standard.

The **KN95** is the Chinese standard.

Filter performance is evaluated to measure the reduction in concentrations of specific aerosols in air that passes through the filter.

The **test agent** refers to the aerosol generated during the filter performance test. In this case, it was sodium chloride.

Total inward leakage (TIL) refers to the amount of a specific aerosol that enters the tested respirator facepiece via both filter penetration and face seal leakage, while a wearer performs a series of exercises in a test chamber.

Inward leakage (IL) means the amount of a specific aerosol that enters the tested respirator facepiece, while a wearer performs a normal breathing for 3 minutes in a test chamber. The test aerosol size is about 0.5 micrometer.

Pressure drop is the resistance air is subjected to as it moves through a respirator filter.