

Antibacterial and anti-virus composite filter

Upgrade air purification

- ☑ Antibacterial and viral removal 99%
- ☑ Natural filter material and no exhaust emissions



Copper ions and silver ions antibacterial filter

01 Copper ions and silver ions anti-virus PET skeleton

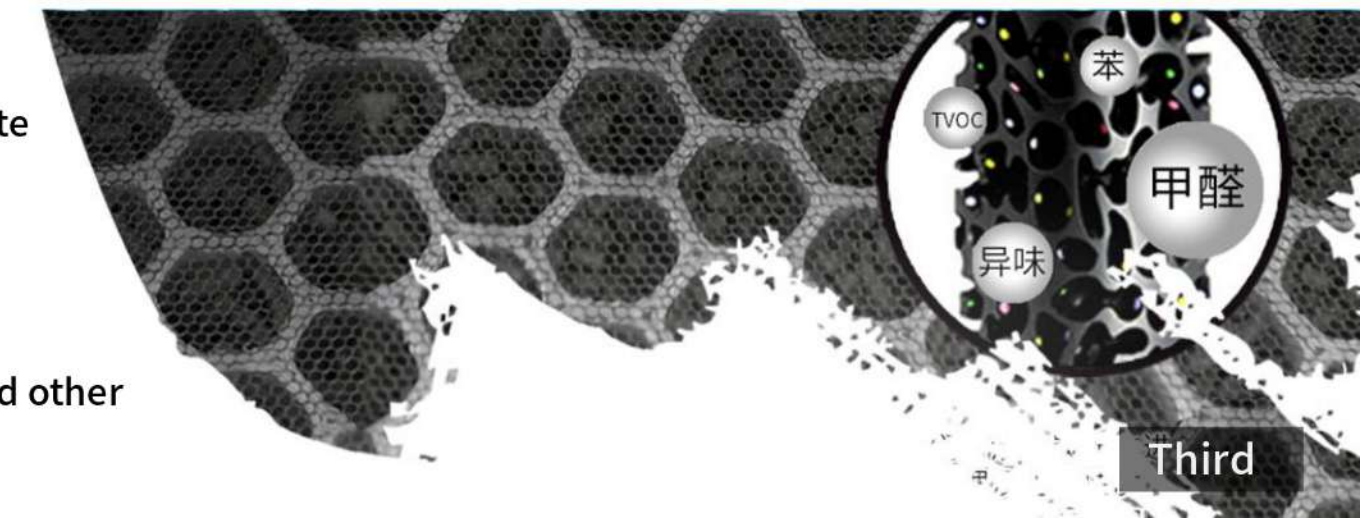
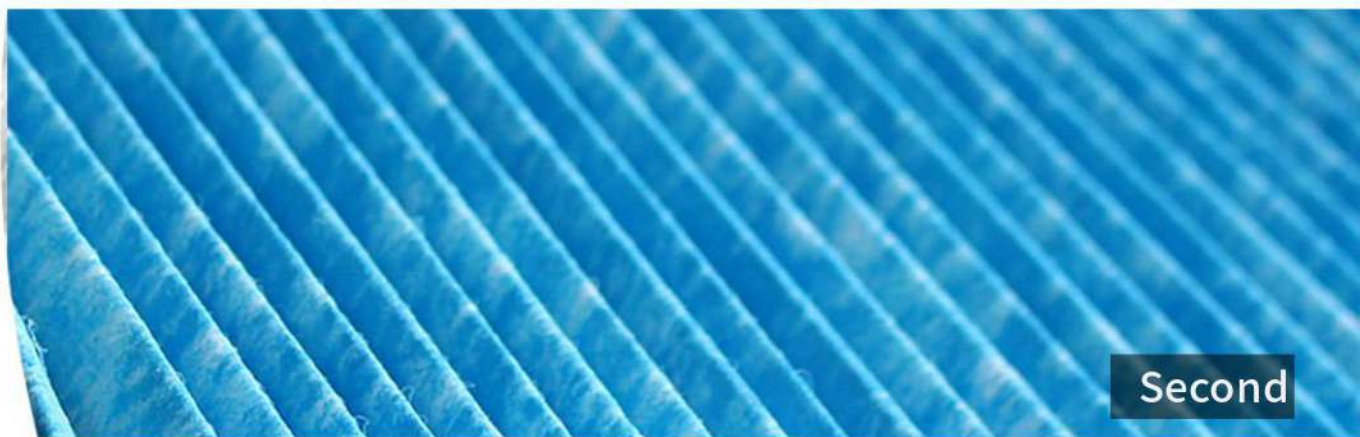
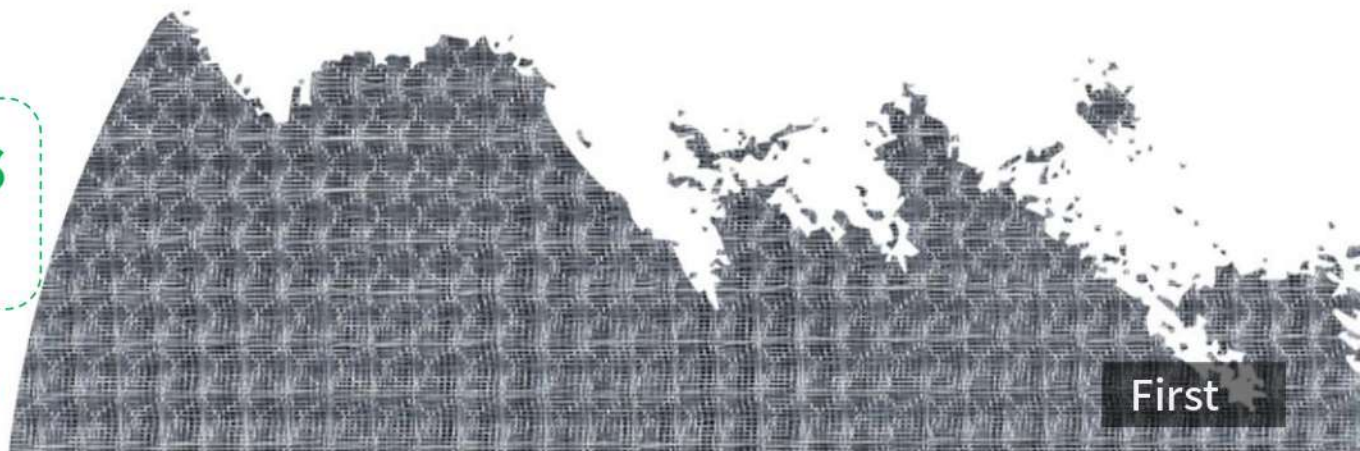
The latest research and development of copper ion and silver ion antibacterial antiviral technology, using PET skeleton as a carrier, carrying copper and silver ions, and then cooperate with medical H13 grade HEPA filter, so as to achieve the best effect of bacteria isolation, sterilization and antiviral. The third release test confirmed the obvious removal effect of SARS (SARS), H7N9 (avian influenza, coronavirus), H1N1 (respiratory influenza virus) and other viruses.

02 H13 Medical Grade HEPA

The H13 medical grade HEPA filtration accuracy is less than 0.3 microns, which can capture and reduce 99.97% of fine particulate matter in the air, such as pollen, pollutants, and allergens, and reduce the carrier of bacteria and viruses in the air.

03 Modified activated carbon

Modified activated carbon can filter out formaldehyde / VOCs and other gaseous pollutants to keep the air fresh.



The principle of copper and silver ion sterilization and virus removal

Destroy the barrier structure of microorganisms

Copper ions and silver ions can greatly damage the cell membrane, make the cell membrane loose, unclear, rupture of the cell membrane, cytoplasmic leakage. The bacteria are then destroyed. Silver ions can penetrate into cells and interact with protoplasts, causing protoplasts to shrink.

Effect on enzymes and amino acids in microorganisms

Copper ions and silver ions are first adsorbed on the surface of the bacterial cell wall, destroying some of its physiological functions. When the copper and silver ions are aggregated and reach a certain limit, they penetrate the cell wall into the interior, stay on the cytoplasmic membrane, and inhibit the enzymes in the cytoplasmic membrane Activity, which leads to the death of bacteria and other microorganisms.

DNA molecules that destroy microorganisms

Copper ions and silver ions can also act on specific sites on bacterial DNA molecules, destroying the DNA molecular structure. Copper ions and silver ions can coagulate nucleic acids, causing cross-linking of DNA molecules, or catalyzing the formation of free radicals, leading to the breaking of chemical bonds on DNA molecules.

Six effects are combined

Block a variety of harmful substances in the air

Inhibit the growth of bacteria or molds

Adopt effective bacteriostatic agent to inhibit the propagation of bacteria and mildew adhering to the surface of the filter, so as to supply clean and fresh indoor air.



Copper ions and silver ions antibacterial filter

* Effectively inhibit the proliferation of *e. coli*, *staphylococcus aureus*, *klebsiella pneumoniae*, *pseudomonas aeruginosa*, *salmonella typhimurium* and other bacteria.



Filter formaldehyde effectively

Activated carbon attachment catalyst, can greatly improve the ability to remove all kinds of harmful gases, can decompose and absorb PM2.5, formaldehyde and other harmful substances.



Remove odor strongly

The use of high-performance activated carbon can absorb the odors generated by sofas, cigarettes, mold, pets, etc., and play a role in filtering and deodorizing.



Filter hair and dander etc.

Filter large particles of dust, hair dust, pollen, floating objects and other pollutants.



Filter smog effectively

The filter is made of medical grade HEPA material, and filters fine particles such as smog and other than 20 nanometers in diameter.



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CNAS L0823



201719001121

Test Report

Official testing, use more assured

Test Results

Number of Sample	Virus	Test Number	Control Group			Test Group		Purification Rate (%)
			0 min (TCID ₅₀ /m ³)	60 min (TCID ₅₀ /m ³)	Natural Decay Rate (%)	0 min (TCID ₅₀ /m ³)	60 min (TCID ₅₀ /m ³)	
KY20200147-1	A/PR8/34 (H1N1)							
		1	3.42×10 ⁶	5.06×10 ⁵	85.20	5.06×10 ⁵	/	≥99.99
		2	3.42×10 ⁶	5.55×10 ⁵	83.77	5.06×10 ⁵	/	≥99.99
		3	1.60×10 ⁶	3.42×10 ⁵	78.63	1.60×10 ⁵	/	≥99.99

Note: "/" means not detected.

Test Results

Number of Sample	Virus	Test Number	Control Group			Test Group		Purification Rate (%)
			0 min (TCID ₅₀ /m ³)	60 min (TCID ₅₀ /m ³)	Natural Decay Rate (%)	0 min (TCID ₅₀ /m ³)	60 min (TCID ₅₀ /m ³)	
KY20200149-1	A/PR8/34 (H1N1)	1	1.60×10 ⁶	5.06×10 ⁵	68.35	1.60×10 ⁶	/	≥99.99
		2	5.06×10 ⁶	7.48×10 ⁵	85.22	7.48×10 ⁶	/	≥99.99
		3	3.42×10 ⁶	7.48×10 ⁵	78.13	5.06×10 ⁶	/	≥99.99

Test results

Number of Sample	Test Time (min)	Test Bacteria	Test Number	Control Group			Test Group		Killing Rate K _t (%)
				Original Bacteria Count V ₀ (cfu/m ³)	Bacteria Count after Treatment V _t (cfu/m ³)	Natural Decay Rate N _t (%)	Original Bacteria Count V ₁ (cfu/m ³)	Bacteria Count after Treatment V ₂ (cfu/m ³)	
KJ20200501-1	60	Staphylococcus albus	1	1.50×10 ⁵	1.16×10 ⁵	22.67	1.38×10 ⁵	7	99.99
			2	1.31×10 ⁵	1.04×10 ⁵	20.61	1.41×10 ⁵	7	99.99
			3	1.39×10 ⁵	1.15×10 ⁵	17.27	1.48×10 ⁵	7	99.99
		Escherichia coli	1	1.30×10 ⁵	8.94×10 ⁴	31.23	1.40×10 ⁵	7	99.99
			2	1.22×10 ⁵	7.99×10 ⁴	34.51	1.32×10 ⁵	7	99.99
			3	1.20×10 ⁵	8.34×10 ⁴	30.50	1.45×10 ⁵	7	99.99

Note: The negative control group was sterile growth.

Test Results

Number of Sample	Virus	Test Number	Control Group			Test Group		Purification Rate (%)
			0 min (TCID ₅₀ /m ³)	60 min (TCID ₅₀ /m ³)	Natural Decay Rate (%)	0 min (TCID ₅₀ /m ³)	60 min (TCID ₅₀ /m ³)	
KY20200149-1	A/PR8/34 (H1N1)	1	1.60×10 ⁶	5.06×10 ⁵	68.35	1.60×10 ⁶	/	≥99.99
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		3	3.42×10 ⁶	7.48×10 ⁵	78.13	5.06×10 ⁶	/	≥99.99

* The above data is from Guangzhou Institute of Microbiology