HMD Nano Cupric Ion Medical Mask (Non-Sterile)

- It is composed with three layers of non-woven fabrics, which is suitable for use for medical institutions, clinical treatment or examination of medical staff, and also for use in the home life of ordinary people.
- When Nano Cupric Ion are released, it can reduce and inhibit the activity level and growth rate of bacteria and viruses, which can prevent the spread and replication of germs and prevent infection. At the same time, it also has anti-bacterial, deodorant, and dust-proof effects.

- **Compliance with EU standards EN 14683 · approval with CNS 14774 · CNS 14775 · CNS 14777 With high bacterial filtration efficiency and high air permeability**

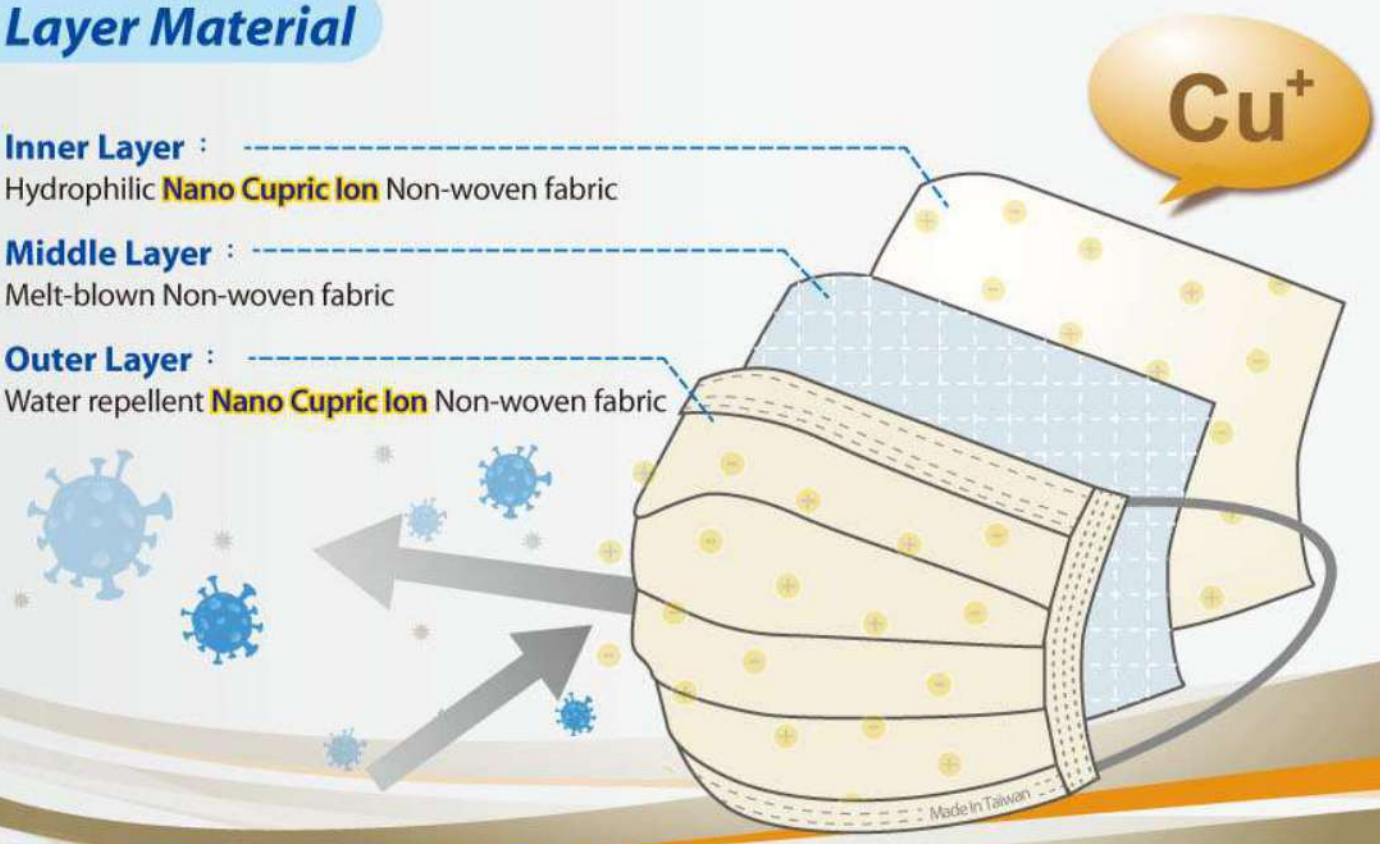
EN 14683 | CNS 14774 | CNS 14775 | CNS 14777

Layer Material

Inner Layer :
Hydrophilic **Nano Cupric Ion** Non-woven fabric

Middle Layer :
Melt-blown Non-woven fabric

Outer Layer :
Water repellent **Nano Cupric Ion** Non-woven fabric



HMD Nano Cupric Ion Medical Mask (Non-Sterile)

Antibacterial properties of Nano Cupric Ion

- MRSA
- Staphylococcus aureus
- Pseudomonas aeruginosa
- E. coli
- Klebsiella pneumoniae
- Corona Virus

Nano Cupric Ion attack the cell membrane, nucleic acid, and enzyme of bacteria, as a result destroying cellular proteins and causing bacterial death or loss of bacterial proliferation.

The good antibacterial function of Nano Cupric Ion can inhibit the proliferation of bacteria and fungi to prevent stinky odors.

Nano copper ion also have anti-bacterial, deodorant, and dust-proof effects.

- 【conform AATCC 100-2019 Antibacterial standards】
- 【BFE Bacterial Filtration Efficiency >99.5%】
- 【antibacterial action >99.99%】
- 【 ISO 18184 Antiviral activity 99%】

HMD BioMedical

Quality Test Report

ORIGINAL

Test Report No. TW-21A0064A

November 22, 2021

BOKEN QUALITY EVALUATION INSTITUTE

BOKEN Taiwan Testing Center
SGS Taiwan Ltd.

31, Wu Chyuan Road, New Taipei Industrial Park,
Wu Ku Dist., New Taipei City 24886, Taiwan

TEL.+886-2-2299-3279/FAX.+886-2-2299-9630

Test results to submitted sample are as follows.

Reception Date : November 18, 2021

Item Name : cupric ion spunbond SBPCZ

Number of Item : 1

Test Item : The test of the antiviral efficacy

Test Method : ISO 18184 : 2019

Infective titre measurement : Plaque assay

Test virus : Influenza A virus (H3N2) : ATCC VR-1679

Test Result :

		The common logarithm average of infectivity titer value		Antiviral activity value log [Va] - log [Vc]
Standard cloth	Immediately after inoculation	log [Va]	6.58	———
	After 2 h	log [Vb]	6.18	———
cupric ion spunbond SBPCZ		log [Vc]	2.65	3.9

Remarks :
* Tested by Boken Osaka laboratory.

*Efficacy of Antiviral activity value (Informative):
Good effect : 3.0> Antiviral activity value ≧ 2.0
Excellent effect : Antiviral activity value ≧ 3.0

* This data is a transcription of Boken Taiwan No.TW-21A0064(November.9,2021).

BOKEN QUALITY EVALUATION INSTITUTE
Taiwan Testing Center

Supervised by N. Yamamoto

Number : TWNC01039308

Test Conducted :

1. Antibacterial Activity

As per applicant's request with reference to standard test method ASTM E 2149-20.

Test Culture	: *Klebsiella pneumoniae* (ATCC 4352) *Methicillin resistant staphylococcus aureus* (ATCC 33591) *Escherichia coli* (ATCC 8739) *Pseudomonas aeruginosa* (ATCC 10145)
Test Specimen	: Submitted samples (1 gram with 50 ml Working Dilution Of Bacterial Inoculum Per Trial)
Sterilization Of Sample Before Test	: No Sterilization
Buffer Solution	: Phosphate Buffer
Broth Media	: Tryptic Soy Broth
Wetting Agent	: 0.01% DC Q2-5211
Contact Time	: 24 Hour ±5 Mins
Incubation Temperature	: 35±2℃
Incubation Period	: 24 Hours
Agar Medium	: Plate Count Agar

Result:

Name Of Test Bacteria (Strain Number)	*Klebsiella pneumoniae* (ATCC 4352)	*Methicillin resistant staphylococcus aureus* (ATCC 33591)
Initial Count	1.8 X10^5 CFU/ml	2.0 X10^5 CFU/ml
The number of bacteria recovered from the inoculum only flask after the specified contact time (b)	1.0 X10^7 CFU/ml	4.2 X10^6 CFU/ml
The number of bacteria recovered from the containing the treated sample after the specified contact time (a)	<30 CFU/ml	<30 CFU/ml
Percent reduction of Bacteria	>99.99%	>99.99%

Name Of Test Bacteria (Strain Number)	*Escherichia coli* (ATCC 8739)	*Pseudomonas aeruginosa* (ATCC 10145)
Initial Count	2.2 X10^5 CFU/ml	2.3 X10^5 CFU/ml
The number of bacteria recovered from the inoculum only flask after the specified contact time (b)	8.0 X10^7 CFU/ml	4.5 X10^7 CFU/ml
The number of bacteria recovered from the containing the treated sample after the specified contact time (a)	<30 CFU/ml	<30 CFU/ml
Percent reduction of Bacteria	>99.99%	>99.99%

Calculation : Percent Reduction of Bacteria = (b-a)/b × 100%

Remark : CFU = Colony forming unit

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