

Nano-Silicon Eco Antibacterial Face Mask



- Bactericidal effective after 50 washes | wear for 24 hours before washing and remains odour free
- Self-cleaning while you wear it, preventing cross contamination on removal
- 360 degree triple layer protection with nano-silicon coating on all layers, both sides
- 100% cotton - eco-friendly - biodegradable - recyclable
- No bleach, fluorescent agents or chemical additives

Why Is It Unique?

Self-cleaning while you wear it with antibacterial coating

Antibacterial coating on all sides so 360 degree protection and triple layers

Proven to kill 99.9% bacteria on contact

No need to wash after each wear meaning this is one of the most cost-effective masks on the market

Still bactericidal after 50 washes

SGS Lab Testing proves 99% Bactericidal effective after 50 washes

Environmentally friendly

One mask can last at least 6 months, lessening the environmental harm of disposable masks. 100%

cotton - biodegradable and recyclable

Available in 4 colours: Apple Green, Sky Blue, Black or Branded with your logo



Environmentally Friendly



Mask material is 100% combed cotton - highly biodegradable, sustainable and recyclable
Unlike surgical masks that contain polypropylene (a petrochemical raw material) that takes decades to decompose

One nano mask can be used a minimum of 50 times

SGS testing shows 99.9% bactericidal after 50 washes. Millions of disposable masks are being used and thrown away daily. Many are dumped in the countryside or the sea and the bacteria on them can spread disease

No bleach, fluorescent agent or chemical additives

Perfectly safe for the human body; and even in the production process, no harmful chemical additives are used

Nano-silicon is recognized as an essential 'hero' substance for many green technologies

Helps turn greenhouse gas carbon dioxide into synthetic fuels - potentially a renewable 'green oil'

SGS & Intertek Lab Testing

SGS

- SGS are the world-leading testing, certification & verification company
- 94,000 employees worldwide
- The nano-mask was tested on several of the most common and dangerous harmful pathogens seen in hospitals and results showed that over 99.9% of bacteria was killed
- The mask still maintained 99.9% bactericidal effect even after 50 washes

SGS 台灣檢驗科技股份有限公司
SGS Taiwan Ltd.

Report No. :
Page : 1 of 2
Date :
TAINAN, R.O.C.

The following merchandise was submitted & identified by the client as:
Product Name: NANO ANTI-FORMAL MASK
Client Name: BUSINESS CO.
Date of Receipt: MAY 05
Date of Testing: MAY 06

Test Requested & Method:
ANNEX 102
ANTIBACTERIAL FINISHES ON TEXTILE MATERIALS
TEST BACTERIAL: *Staphylococcus aureus* ATCC 6531
Escherichia coli ATCC 4312

Test Results	Counts at 0 Hour	Counts at 24 Hours	Reduction (%)
<i>Staphylococcus aureus</i> ATCC 6531			
Testing from	Control	Control	
Test Specimens	2.1 x 10 ⁷	1.4 x 10 ⁷	> 99.99
<i>Escherichia coli</i> ATCC 4312			
Testing from	Control	Control	
Test Specimens	1.7 x 10 ⁷	2.7 x 10 ⁷	> 99.99

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SGS TAIWAN LTD.

Intertek

- Brand new from 19th May 2020
- Intertek are also a world-leading test, verification & certification company with 46,000 employees
- Their Lab tests showed over 99.9% of bacteria killed on contact with the nano mask even after 50 washes

intertek Date: May 19, 2020

Test Report Number: TWK0086550
Date Issued: May 19, 2020

Applicant: Chen & Green Technology Co., Ltd.
6F, NO. 110, HUANING ST.,
TAINAN TAIWAN (R.O.C.)

Sample Description:
One (1) Group of Submitted Sample Said To Be:
Item Name: ECO-Friendly Antibacterial Fabric for Mask Use
(AATCC65-After 50 Washes)

Item of Test Bacteria (Strain Number)	<i>Escherichia coli</i> ATCC 4312
The number of bacteria recovered from the inoculated stability control fabric swatches immediately after inoculation (C) (contact time) (0)	1.02 x 10 ⁷ CFU/Sample
The number of bacteria recovered from the inoculated stability control fabric swatches incubated over 24 hours contact period (B)	8.72 x 10 ⁷ CFU/Sample
The number of bacteria recovered from the inoculated tested sample swatches immediately after inoculation (C) (contact time) (2)	1.02 x 10 ⁷ CFU/Sample
The number of bacteria recovered from the inoculated tested sample swatches incubated over 24 hours contact period (A)	<100 CFU/Sample
Growth value (F)	2.93
Percent reduction of bacteria (R)	>99.99%

Test result: Bacteria reduction abilities ≥ 99.9% (After 50 washes)

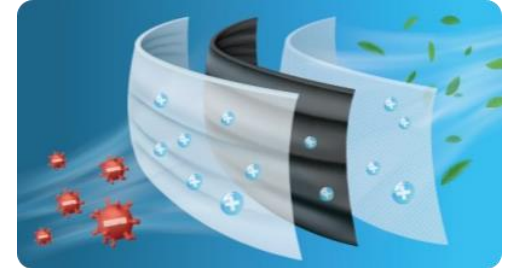
Intertek was founded in 1888 in the U.K. It now has over 100 branches and 46,000 employees across the globe. They're a well-trusted alternative to SGS.

Authorized by: Intertek Testing Services Taiwan Limited
Signed by: Jimmy Chen
Chief Executive Officer

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3 Layers Provide Triple-Sterilizing Effect

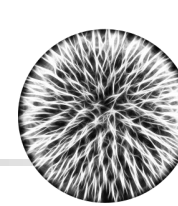
- Most bacteria reaches your mouth and nose via droplets causing infection
- A single-layer mask may block 80-90%
- This nano mask has 3 layers of 100% cotton with very high density woven fabric with tightly packed fibres to block tiny particles. Nano-silicon is sprayed on all 3 layers.
- With no sterilization ability, bacteria on most conventional masks will multiply rapidly



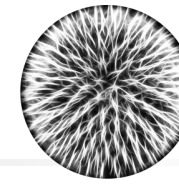
These 3 layers have the function of instant sterilization:

1. First layer of tightly packed microfibers blocks 80-90% of bacteria - killing over 99.9% of that bacteria on contact
2. Second layer is also tightly packed microfibers - any small amount of bacteria that passed through the first layer is sterilized by this second layer
3. The tiny remaining amount of bacteria is sterilized again by the third layer

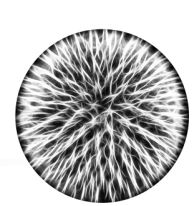
How does it work?



H₂O₂



O₂^{•-}



OH[•]

- The mask has a nano-silicon surface that is a photocatalytic antimicrobial. This means it absorbs light and produces Reactive Oxygen Species
- These are powerful microbiocides, like Hydroxyl, Peroxide and Superoxide anion radicals (which are also used in immune response in the human body) - they're capable of killing bacteria and other harmful pathogens
- These break down the cell wall and attack the bacterial cell DNA, killing the bacteria completely and ensuring they cannot reproduce
- To efficiently transport the pathogen-killing radicals to the bacteria - it's essential to have good contact with the bacteria. The photodynamic nature of nano-silicon also results in a positive surface charge, attracting the bacteria's negative cell wall
- The reason that nano-silicon is such an effective bactericide is that it has a high surface area-to-volume ratio, meaning even more of the powerful bacteria killing radicals can be produced
- SGS Lab testing proves that over 99.9% of bacteria is killed on contact

IMPORTANT: The nano mask also solves a significant problem of almost all other masks - the bacteria that hits other masks is carried throughout the day and reproduces, growing to dangerous levels and it can contaminate hands, clothes and any surfaces it touches.

Try it for yourself

- **Most masks will gather bacteria throughout the day and start to smell - even more so if it's worn for several days**
- **Test the nano mask yourself - try it for 5-8 hours per day, for 5-7 days**
- **There will be no unpleasant odor**
- **This is because smells are made of bacteria and the nano mask kills over 99.9% of this bacteria on contact and is effectively self-cleaning**

Some masks have a silver coating which has some antimicrobial properties:

- **Silver and copper are metals, and silicon is an inorganic material**
- **Metals are more likely to have heavy metal residue and are more likely to cause skin allergies. Inorganic materials don't have this problem**
- **Nano-silver cannot be used to change colors when dyeing mask fabric - nano-silicon can**
- **As a metal, silver is relatively easy to oxidise and has poor durability**
- **Silver fibre, copper fibre and silver-titanium masks have basically the same characteristics as nano-silver masks**

360° Protection



OTHER MASKS:

- ALL masks have a small amount of particles getting through gaps
- On most masks, the bacteria that gets through stays on the mask as you breathe in and out
- Bacteria that is on the mask for several hours will grow larger and has more chance of being breathed in

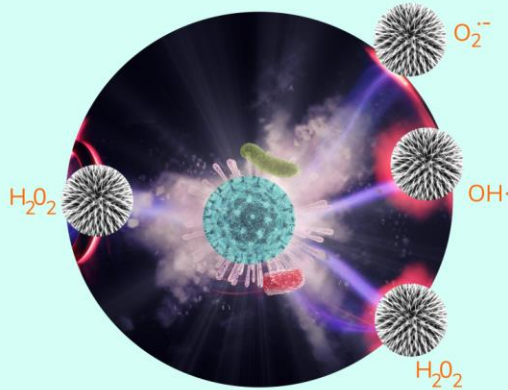
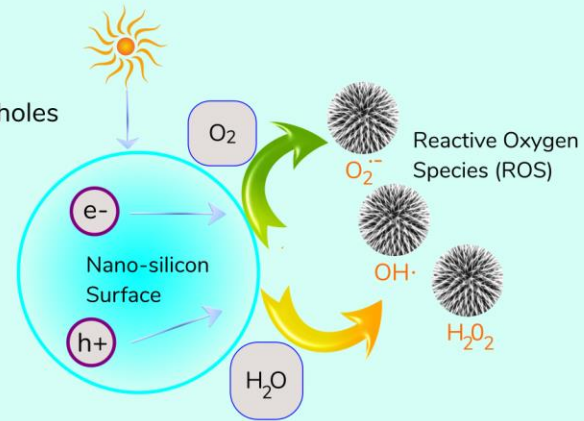
NANO-SILICON MASK:

- The Nano-silicon Mask has triple-layer sterilization with the 3 cotton layers dipped in nano-silicon solution
- Even the inside of the mask kills bacteria
- So bacteria that lands inside the mask are killed instantly
- As you breathe in and out, you breathe the sterilized air

How do the nano-silicon mask layers kill harmful pathogens?

Photocatalysis produces Reactive Oxygen Species

- Silicon nanoparticles reaction with light causes electron-hole pairs to be produced on nano-silicon surface.
- The electrons and holes cause Oxidation reactions with Oxygen (O_2), Water (H_2O) and other chemicals to create Reactive Oxygen Species on the nano-silicon surface



- The Reactive Oxygen Species are highly efficient killers of harmful pathogens: viruses, bacteria, yeasts, molds and more
- This nano-silicon mask has 99.9% bactericidal effectiveness, more than other masks with antimicrobial solutions. This is because the special nature of the nano-silicon surface produces more electron-hole pairs, creating a very large amount of Reactive Oxygen Species that kill effectively all the bacteria

- Nano-silicon is a superior and highly effective killer of harmful pathogens as it produces more positive holes (h^+) that are free to move, producing an overall positive charge
- The positive charge attracts negatively charged bacteria cell walls, making the bacteria easier to kill

