

Forces' Health, Safety, Lethality

KOF 99MT Antibacterial/Antiviral 3D
Design Face Mask (Made in S. Korea,
TAA compliant)

Southwest Synergistic Solutions LLC,

CAGE Code 64U68

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KOF99-MT

**ALL GUARD
PROTECTIVE
FACE MASK**



Product Features

Functional nose support

It doesn't fall off when you wear it, and it prevents the glass from getting misty.

Skin irritation test completed

Minimize skin irritation by using soft inner textures.

Ergonomic 3D design

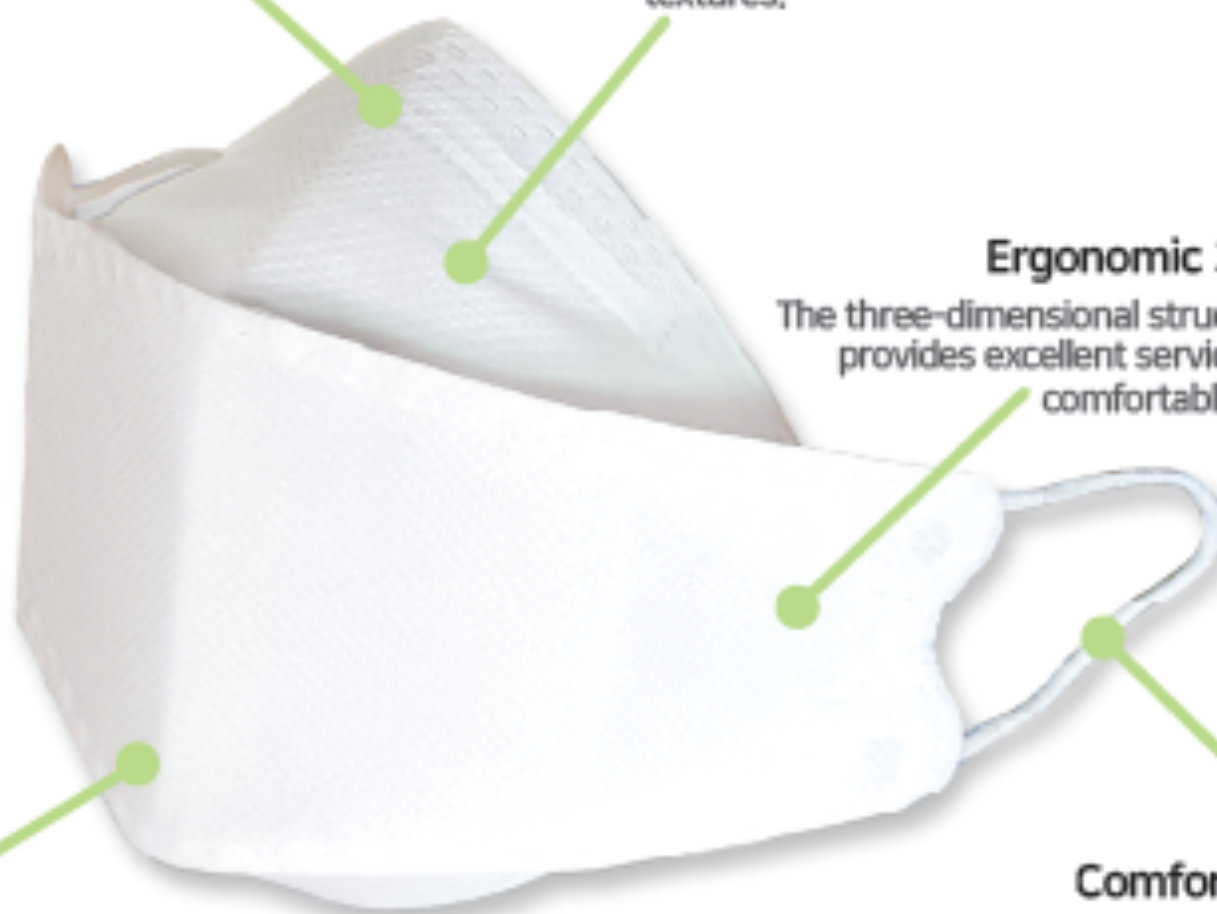
The three-dimensional structure design provides excellent serviceability and comfortable breathing.

Quadruple structure

Quadruple filter layers, includes Membrane & Tencel to best protect the user. 3S polypropylene

Comfortable ear bands

Ears don't hurt after long periods



Quadruple filter



Outer fabric

Block the largest particles,
External filter protection



Membrane Filter

Blocks small particles
(viruses/bacteria)



Tencel Filter

Extracted from trees
Eco-friendly tencel sheet
Filter used. Kills Viruses
and Bacterias



Inner fabric

Soft material (4S polypropylene).
Minimize skin irritation and
maximize comfort

Tencel?

It's a natural fiber extracted from eucalyptus trees (renewable source). It has good absorbability and is naturally antibacterial. Treated with a patented sodium chloride based antibacterial/antiviral solution that helps eliminate odors and allows for extended wear. Tested in S. Korea with 99.9% bacteria kill results.

Membrane Filter?

Virus filtration efficiency over 97% with extended use for long periods of time.
It is Hydrophobic filter, US based Nelson lab tests for BFE and VFE confirmed 99.9% results.

1st Protective Layer

- Made of 70g, 3S Polypropylene.
- The thicker the layer, the better.
- High quality fabric, not made in China.
- Durable



Outer fabric

Block the largest particles,
External filter protection

2nd Protective Layer

- Made of ePTFE membrane.
- S. Korean tests show, .3 micron particles blocked with 98.4% results.
- U.S. Based Nelson Lab BFE test results using this filter at 99.9%
- U.S. Based Nelson Lab VFE test results using this filter at 99.9%
- Permeability – ePTFE has a unique property of being impervious to liquids, but permeable to gases. Since Covid-19 is known to be spread by droplets in the air, ePTFE forms an ideal medium to arrest the passage of droplets.

- FDA approved – as PTFE is an FDA approved material, it poses no risks to being used in face masks. Indeed, PTFE is one of the few materials that is approved for insertion into the human body, making it completely safe for such an application.
- Hydrophobic – not only is ePTFE resistant to droplets, it is hydrophobic in nature, meaning that droplets that do reach it are immediately repelled. Hence, there is less risk that an infected droplet would remain on the surface of the material. This allows the face mask to have a longer life, as there is less chance that the infection stays on the surface of the material.
- The material is completely non-toxic and hygienic. It also offers working temperatures up to 260°C.
- Chemically resistant with high linear strength
- Chemically inert
- Watertight at low pressure
- Low dielectric constant
- Excellent radial expansion and UV resistance
- 40+% more breathable than a melt-blown filter used in N95 and KN95 masks

3rd Protective Layer

- Tencel is made from a natural fiber extracted from eucalyptus trees (renewable source). It has good absorbability and is naturally antibacterial.
- Tencel is treated with a patented sodium chloride hydrogel based antibacterial/antiviral solution that helps eliminate odors and allows for extended wear.
- Treated Tencel filter tested in S. Korea with 99.9% bacteria kill results.
- Tencel's production process is a closed loop. More than 99% of the water and solvents used in the process are collected and reused. The bleaching of the fibers is completely chlorine-free.
- Tencel is a green fabric. Tencel carries the European Eco label and was even awarded the European Environment Prize.

- Sodium based solutions have been proven to be extremely effective at killing viruses. See this unrelated 3rd party publication:
- **Universal and reusable virus deactivation system for respiratory protection**
Fu-Shi Quan^{1,*}, Ilaria Rubino^{2,*}, Su-Hwa Lee³, Brendan Koch² & Hyo-Jick Choi²
- **Aerosolized pathogens are a leading cause of respiratory infection and transmission. Currently used protective measures pose potential risk of primary/secondary infection and transmission. Here, we report the development of a universal, reusable virus deactivation system by functionalization of the main fibrous filtration unit of surgical mask with sodium chloride salt. The salt coating on the fiber surface dissolves upon exposure to virus aerosols and recrystallizes during drying, destroying the pathogens. When tested with tightly sealed sides, salt-coated filters showed remarkably higher filtration efficiency than conventional mask filtration layer, and 100% survival rate was observed in mice infected with virus penetrated through salt-coated filters. Viruses captured on salt-coated filters exhibited rapid infectivity loss compared to gradual decrease on bare filters. Salt-coated filters proved highly effective in deactivating influenza viruses regardless of subtypes and following storage in harsh environmental conditions. Our results can be applied in obtaining a broad-spectrum, airborne pathogen prevention device in preparation for epidemic and pandemic of respiratory diseases.**

4th Protective Layer

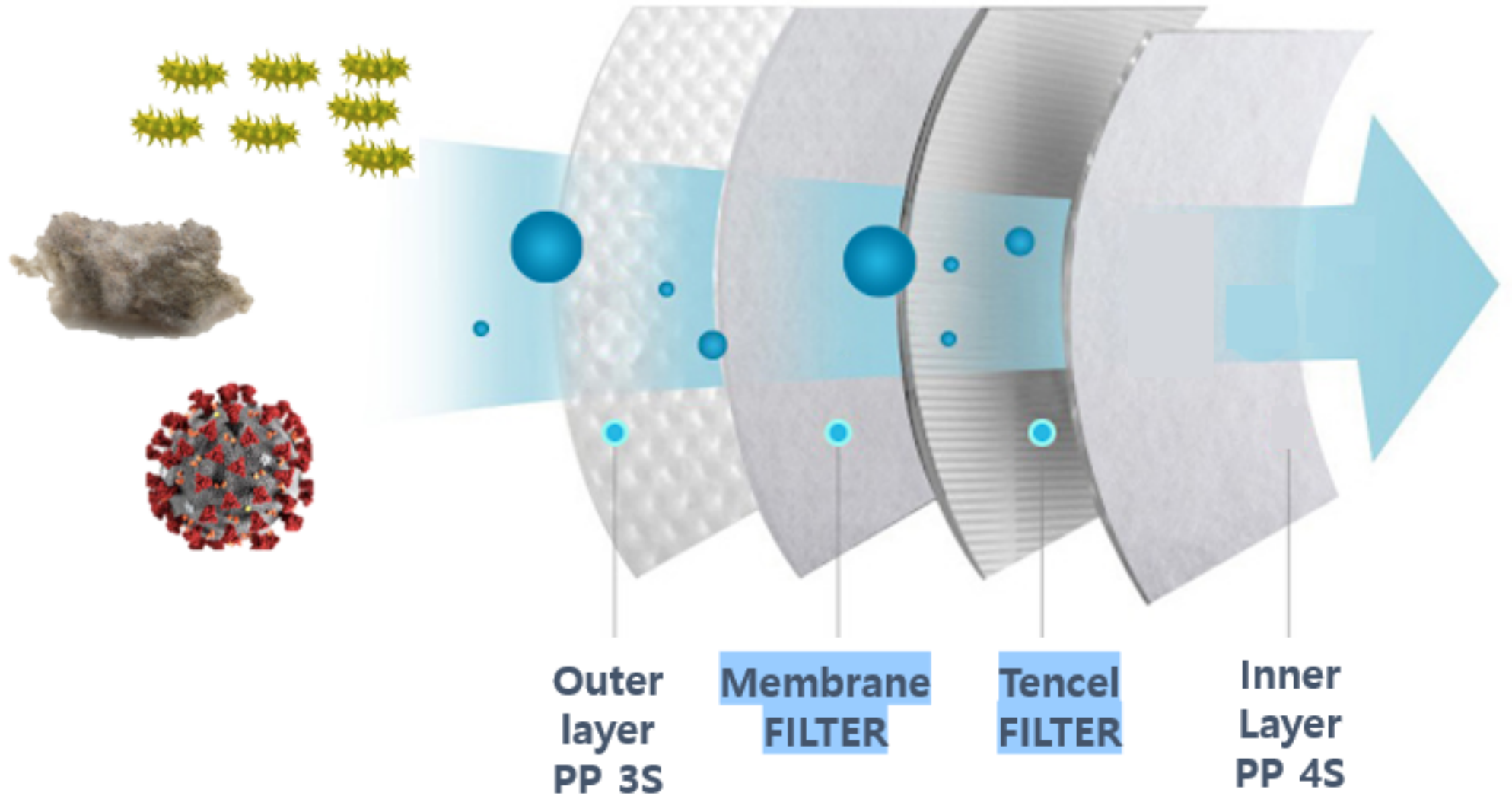
- Made of 40g, 4S Polypropylene
- High quality helps reduce contact dermatitis
- Passed US based laboratory fabric quality testing for pH, 8 Heavy Metals, Formaldehyde, Odor, Color, Volatile Organic Compounds (VOCs) and Semi-volatile Organic Compounds (SVOCs)
- Maximizes comfort



Inner fabric

Soft material (4S polypropylene)
Minimize skin irritation and
maximize comfort

All put together



Benefits & points for discussion

A. Current alternatives:

- i. KN95 Pros – Block particles 0.3 microns with 95% efficiency. Good seal around the face.
- ii. KN95 Cons – 95% efficiency drops considerably through out the day, and even more the higher the humidity. One time use.
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- i. Cloth masks Pros – Better than nothing. Washable so less wasteful.
- ii. Cloth mask Cons – Poor fit. The more washes, the less effective. Double masking.
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- i. Surgical mask Pros – Better protection than cloth masks
- ii. Surgical mask Cons – Gaps allow for escape of particles. One time use. Double masking.
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A. Potential shortcomings from all above:

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- i. Counterfeits of KN95, N95, and facemasks is widespread, leading to poor quality.
- ii. Most surgical masks and KN95's, are made in China. Quality control is an issue. I have heard defect rates are as high as 20 to 30 percent. Use of the lowest quality materials and chemicals in the manufacturing process often-times leads to smells and/or contact dermatitis, among other shortcomings.

- i. Having 4 layers of materials is better than having less layers.
- ii. 3D design allows for superior fit and breathability. This superior fit allows less water droplets to escape.
- iii. Utilizing a Tencel salt-solution/hydrogel treated filter kills bacteria and viruses so less active bacteria/virus is released from the mask.
- iv. Utilizing a Tencel salt-solution/hydrogel treated filter permits for repeated use of the facemask for periods of up to 10+ days. This is due to the filter not expiring and continually killing bacteria and viruses which would result in an odor build up and need to throw away.
- v. The KOF 99MT is not only eco-friendly in some of the materials that are used but by it being an extended wear facemask it can potentially reduce the quantity of discarded masks by up to 10 times or more.
- The KOF 99MT is a more economical choice. Military pricing at 100,000 units is \$3.54 ea. Take the \$3.54 and divide it by the ten days of use and you get a cost of \$0.35 per day. This is not only far less expensive than any KN95 or N95 cost per day, but it is equivalent or less expensive than good quality surgical face masks.

CAPABILITY STATEMENT

Southwest Synergistic Solutions, LLC designs, manufactures and sells warfighter field equipment based on expressed needs and feedback from warfighters. We manufacture two products (E/T Lights and Compass Light) and represent another (S-Cut).

The E/T Lights combine four colors in one durable, long lasting, combat proven device. Designed to improve on chemical light technology, the E/T Lights accomplish the following when utilized to augment chemical light use for common repetitive tasks:

- Reduce weight for capability up to 95%
- Reduce volume for capability up to 97%
- Reduce plastics/chemical waste by over 2 million pounds per year.
- Reduce chemical light stick budget by over 90% (keep chemical lights for truly crack and forget tasks, utilize reusable E/T Lights for common repetitive tasks)
- E/T Lights function in all austere environments, chemical lights freeze and do not function.
- E/T Light turned off in emergencies
- Reduce need to resupply one time use chemical lights. Lesson logistical costs & burden.
- Bring cost per use down to 1 cent to 4 cents per hour vs. cracking the \$1.50+ chemical light every time
- Reduce disposal costs associated with chemical lights.

E/T Version 6.8A – NSN 6230-01-605-9650

E/T Version 6.8IR – NSN 6230-01-605-9635

DLA Medical DAPA contract SP0200-1-H-0064 (E/T Lights), & SP0200-19-H-0005 (S-Cuts)

E/T Lights are certified an “Approved Product for Homeland Security”. Vetted by DHS, “Safety Act” program.

E/T Light are designated a “Qualified Anti-Terrorism Technology (QATT)”. Vetted by DHS, “Safety Act” program.

E/T Light are MIL-STD 810 tested, Army APG lab & MIL-STD 810 (Explosive Atmosphere) tested.

Included in Army Medical kits UA269C, UA1374

Compass Lights – Built for very specialized community.

SSS, LLC represent S-Cuts line of clothing removal, emergency cutout tools in the U.S.

- S-Cuts improve on shears & cutout rippers. When tested, the S-Cuts were 4X faster than shears and 2+ times faster than cutout rippers.
 - Reduce weight & volume for the capability, while improving patient safety and getting them out much faster.
 - NSN 6515-01-668-7095 – Model 501/red
 - NSN 6515-01-668-7090 – Model 701red
 - NSN 6515.01.668-5393 -Model QE black
 - Other NSN issued for ACP Kit & QE blue
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NIACS E/T & Compass Lights – 335129, 423610
S-Cuts – 423450, 423710

Small minority owned business, State (Texas, SCTRCA) certifications: ESBE, HABE, MBE, SBE, HUB

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QUESTIONS: