



AKKARAIPATTU BASE HOSPITAL



ABH 39 The face mask

LAUNCHING FOR
ERGONOMIC EXPERIMENT

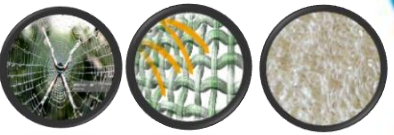
ABH 39 FACE MASK

ON 22nd of June 2020 AT
AKKARAIPATTU BASE HOSPITAL



Twin
Generation

Fluid
resistance Filtration Absorption



Active Triple Action

Discovered by
HQS



ABH 39 The face mask

When our staff and community inbound to the compelling situation to live with preventive measures against the covid-19, it is essential to wear face mask to safe our life.

Even though to identify the alternative materials for this effective face mask is the huge challenge, the Healthcare Quality & Safety (HQS) Unit of Akkaraipattu Base Hospital (ABH) realized this situation and took a marvelous effort to make effective reusable face mask not only for its health staff but also to entire community of this region.

As we all are experiencing that the demand of using face mask is increasing dramatically it is scientifically proved that decreases the availability of standard surgical mask in this country. Therefore as a proactive state, we (ABH) have to do research to find the alternative material to discover the effective reusable face mask.

After the continuous studies of the relevant guidelines and discussion with several experts in textile engineering about the mechanism and steps to be carried out on preparation of standard mask the ABH discovered two type of masks.one is reusable and other one is disposable. The purpose discovering this mask is not for sale or continuous production, but providing the guideline how to make effective mask at work place or at home in the emergency situation when the provision of standard masks are impossible from authorized sectors.

ABH-39 masks are tested for quantitative evaluation particulate permeation (QEPP) in Sri Lanka institute of Nanotechnology (SLINTEC) and proven their effectiveness

in terms of reducing the particulate sizes which are similar to covid-19 viruses when it's considered with droplets.

Details of Comparison on particle permeation through sample mask
Nanotechnology Institute, Sri Lanka
Samples tested on 29th of April 2020

Type of mask	The percentage (%) reduction by mask when sending following particle size (Diameter in micrometer)						Priority of best small particles	Priority of best large particles
	0.3	0.5	1	2	3	5		
3M N95 mask	80	84	89	90	88	93	1	2
Surgical standard mask	37	53	74	79	86	94	3	1
ABH 39	39	45	65	71	76	78	2	3

The permeation results received by sending the different types of particles through the sample mask in different size in micrometers is showed in the above-table in micrometers. It is protected by 39 percent when standard surgical mask it is protect by 37 percent. That's why named this mask as **ABH-39** and it has been proved quantitative evaluation of particulate permeation (QEPP) best for 0.3 micrometer particles.

Now we are able to recommend reusable **ABH 39** masks which can protect even 2% more than standard surgical masks when we considered 0.3 micrometer size of particulates as Covid-19 particles is 0.125 micrometer mentioned by the WHO laboratory services.

IMPORTANT

Before using this unit, wearer must read these user instructions carefully. Keep this instructions for further reference. However, with reference to the evaluation report submitted by SLINTEC of Sri Lanka the test outlined in this document only test the materials ability to filter particles of different sizes. Therefore, it only complements (not identical) to the submicron particulate filtration at 0.1

micrometers test. Also we are launching this mask for ergological experiment only.

FEATURES OF ABH 39

- This ABH 39 mask has been mainly designed to help wearer to protect from the permeation of airborne particles with size of diameter from 0.3 micrometers.
- ABH 39 mask functions as two in one such as surgical mask and respirator as it has been designed with three layer set with following functions.
 - a. Outer layer - Fluid resistance
 - b. Middle layer - Filtration
 - c. Inner layer - Absorption
- Fully covers your face without any direct air leaks through any holes or angles and helps to maintain the free space between the nose point of mask and your breathing organs.
- Tested by Nanotechnology institute (SLINTEC) of Sri Lanka, which is the leading institution for laboratory services to the permeation test by sending the airborne particles in minimum size.
- Sample tested for quantitative evaluation of particulate permeation (QEPP) in following sources.
 - I. Fluid resistance by synthetic blood, in mm Hg (ASTM F1862)
 - II. Differential pressure, mm H₂O / cm²
 - III. Bacterial filtration efficiency percentage
 - IV. Submicron particulate filtration at 0.1 micrometers as a percentage
 - V. Flammability

USE INSTRUCTIONS

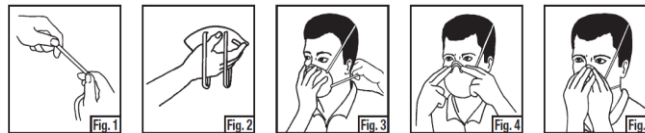
- Failure to follow the all instructions and limitations given bellow on the use of this face mask against the covid-19 infection or failure to wear this mask during all times of exposure may reduce in the effectiveness of ABH-39 mask.
- This mask is produced for the reusable purpose till it is only with the good conditions for the user and make sure to wash by hands using with usual detergent or

permitted soaps. Avoid to wash or spin with the help of washing machines.

- Leave the contaminated area immediately and contact supervisor if dizziness, irritation, or other distress occurs.
- Store this ABH 39 mask away from contaminated areas when not in use.
- Inspect this ABH 39 mask before each use to ensure that it is in good operating condition. Examine all the mask parts for signs of damage including the two headbands, attachment points and nose foam. The mask should be disposed off immediately upon observation of damaged or missing parts. Immediately replace mask if damaged.
- Dispose off used product in accordance with applicable regulations.
- Do not alter, abuse or misuse this ABH 39 mask in any situation.

WEARING INSTRUCTIONS

Please follow the wearing instructions according to the bellow figures.




- Pull the upper and lower straps (elastic band) backward before you place the mask on your face (Fig.1)
- Cup the mask in your hand, with the nosepiece at your fingertips and release the bended upper and lower edges of the mask to comfortably fit to your face (Fig. 2).
- Position the mask under your chin with the nosepiece up. Pull the lower strap over your jaws and position it around the neck below the ears. Pull the upper strap over your head and position it around the back of your head (Fig. 3)

It will assist you to free from the feeling of pain at upper part of your ears due to tightness by the elastic bands.

- Place your fingertips from both hands at the top of the metal nosepiece. Using two hands, mold the nose area to the shape of your nose by pushing inward while moving your fingertips down both sides of the nosepiece (Fig.4).

Pinching the nosepiece using one hand may result in improper fitting and less effective mask performance. Use both hands.

- Perform a User Seal Check prior to each wearing. To check the mask to face seal, place both hands completely over the mask and slowly pull the nose point of the mask catching by your fingers to ensure the free space between your face and the inner surface of the mask. Be careful not to change the position of the mask. If air leaks around nose, readjust the nosepiece as described in step 4. If air leaks at the mask edges, work the straps back along the sides of your head (Fig. 5).

 **WARNING**

This ABH 39 Mask helps to protect against certain airborne particulates from Covid-19 and other infections with size is similar to 0.3 micrometer or larger than this. Before use, the wearer must read and understand the User Instructions provided as a part of the product packaging.



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The face mask

A Production of Healthcare Quality & Safety Unit