Protecting healthcare workers from infectious diseases

[For medical staff] Iode-Mask, Iode-Glove, Iode-Hood

Antibacteria • Antivirus features

To prevent infection by viruses, we developed personal protective equipment (PPE) characterized by strong antibacterial and antiviral features: Iode-Mask, Iode-Gloves and Iode-Hood. Made of elemental iodine stably supported on the fabric, our PPE can kill in a short time the bacteria and viruses on its surface. Even after repeated washing with water, the antibacterial and antiviral effect is preserved for a long time (up to about 6 months after continuous or intermittent use, depending on conditions).

The mask is made of a soft elastic fabric it is comfortable to wear, and, thanks to the antiviral-antibacterial activity, it gives a sense of security. It can also be used above a standard mask or a gauze, preventing the spread of viruses in the environment.

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<Caution> the use of PPE, including our iodine-based products, will not fully protect from acquiring or passing an infection to another person. Other infection control practices, such as hand-washing, are also important to minimize your risk of infection.

Iode-Mask

[Features]
- Long-lasting antibacterial and antiviral power
- Rapid inactivation of E. coli / Avian influenza virus (reduced to less than 1/1,000,000)
- Continuous / intermittent use for up to 6 months
- Iode-Mask fabric filtration performance 3-30 μm particle trapping rate: 95-99%
- (to be worn over a common mask or gauze)
- Safe on skin and harmless
- Washable and reusable

Avian influenza virus inactivation

Immediate and persistent efficacy

Avian influenza virus inactivation test results on iodine-bearing fabrics (A / swan / Shimane / 499/83 (H5N3) virus used)

<table>
<thead>
<tr>
<th>Sample</th>
<th>Virus solution (400μL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cloth Mask Ny</td>
<td>≤ 0.5 *</td>
</tr>
<tr>
<td>Cloth Mask Ny+PU</td>
<td>≤ 0.5</td>
</tr>
<tr>
<td>Clothing fabric Wo</td>
<td>≤ 0.5</td>
</tr>
<tr>
<td>Fabric mat PU</td>
<td>≤ 0.5</td>
</tr>
<tr>
<td>Reference</td>
<td>6.67</td>
</tr>
</tbody>
</table>

* Residual virus titer (Log10EID50/0.2mL)

Ny: Nylon, PU: Polyurethane, Wo: Wool

Iode-glove

<Mid level antiviral power>
(For healthcare and generic users)

<High level antiviral power>
(For healthcare users)

Iode-hood

<Mid level antiviral power>
(For generic users)

<High level>
(For healthcare users)

<Low level>
(For healthcare users)
Assuring high antiviral power with just a spray

[For healthcare and generic users] Iodox-spray
Antibacterial/antiviral, antifungal, deodorant

Just lightly spray on the surface of conventional masks, towels, clothes, doorknobs, hands, etc. to assure a long-lasting antibacterial and antiviral effect and deodorant power. The effect is preserved until washed. The spray solution contains an iodine compound (Iodox-salt) and a liquid conditioning agent and has been tested for safety to skin, eyes, and mouth. In case of repeated use on a mask, it is recommended to wash and dry it before spraying the solution again.

<Caution> depending on the user's utilization and conditions of use, Iodox-spray cannot ensure complete destruction of pathogens.

Immediate and persistent efficacy

Iodox-spray effect of conventional mask

<table>
<thead>
<tr>
<th>Conventional mask</th>
<th>Bacteria solution added (ml)</th>
<th>Bacteria counting thin film method (CFU/mL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonwoven fabric</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>No treatment (reference)</td>
<td>$10^7$-$10^8$</td>
</tr>
<tr>
<td>2</td>
<td>Using Iodox-spray treatment</td>
<td>$20$</td>
</tr>
</tbody>
</table>

IodoxH3 (%) Test on various pH conditions

[Results] strong disinfecting power on a wide pH range (3.3-5.7)

[Antibacterial power/persistence] Iodox-spray

It can be applied as a spray when necessary to assure protection from infectious diseases. Readily and easily use, like chlorine-based disinfectants (but gentler to the skin).

Iodox can also be used outdoor on soil, since it binds to the soil components assuring a long-lasting disinfection power.

Disinfection power comparison between a chlorine-based commercial disinfectant and Iodox-spray

<table>
<thead>
<tr>
<th>Reference/Cl-based</th>
<th>Iodox (Wet) Bacteria count</th>
<th>Iodox (Dry) Bacteria count</th>
<th>Cl-based (Wet) Bacteria count</th>
<th>Cl-based (Dry) Bacteria count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bacteria load (CFU/ml)</td>
<td>$10^7$</td>
<td>$0$</td>
<td>$10^4$</td>
<td>$10^7$</td>
</tr>
</tbody>
</table>

Strong disinfecting power (effective even if dried)

[Features]

- Long-lasting antibacterial and antiviral power
- Rapid inactivation of E. coli / Avian influenza virus (reduced to less than 1/1,000,000).
- Disinfecting power preserved for over 1 year when left at room temperature
- Iodox-spray can add antibacterial and antiviral capabilities to masks and clothes, and the effect persists unless washed or removed.
- Tested for safety on eyes and skin.

Virus reduced to $1/1,000,000 \sim 1/10,000,000$

10 minutes treatment

[Antiviral power] Iodox-spray

The virus is almost totally eradicated in short time

Results of various Iodox types (iodine loadings) on avian influenza virus

<table>
<thead>
<tr>
<th>Sample tested</th>
<th>Residual virus titer</th>
</tr>
</thead>
<tbody>
<tr>
<td>D₁. Iodox C (12)-KSo</td>
<td>≤0.5*</td>
</tr>
<tr>
<td>D₂. Iodox C (4)-KSo</td>
<td>≤0.5</td>
</tr>
<tr>
<td>D₃. Iodox C (1)-KSo</td>
<td>1.5</td>
</tr>
<tr>
<td>D₄. Iodox B (12)-KSo</td>
<td>≤0.5</td>
</tr>
<tr>
<td>D₅. Iodox B (4)-KSo</td>
<td>≤0.5</td>
</tr>
<tr>
<td>D₆. Iodox B (1)-KSo</td>
<td>1.75</td>
</tr>
<tr>
<td>D₇. Iodox H (12)-KSo</td>
<td>≤0.5</td>
</tr>
<tr>
<td>D₈. Ref-KSo</td>
<td>4.75</td>
</tr>
</tbody>
</table>

Starting virus load | 7.0

*: Residual virus titer $(\log_{10}\text{EID}_{50}/0.2 \text{ mL})$