

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). Since 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.

The product is available with various iodine amounts. Since the antibacterial and antiviral power will increase proportionally with the amount of iodine loaded on the mask, also the iodine odor will become slightly stronger. Although the iodine amounts used are not harmful, people with known allergy to iodine should use the lower one.

<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.



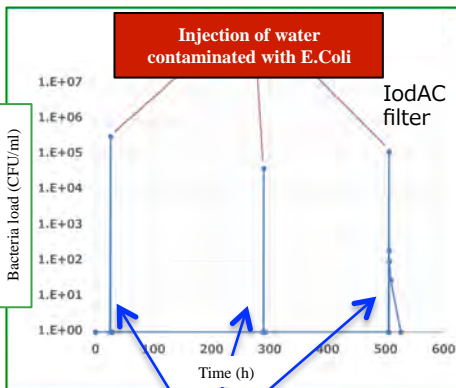
Ordinary mask

Iode-Mask

Applied above an ordinary mask or gauze, our product can eradicate viruses on its surface.

Performance test of iodine based product:
instant sterilization of water contaminated with bacteria upon continuous filtration through an activated carbon filter doped with elementary iodine

Immediate and persistent efficacy

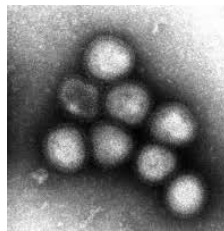


Instant E.Coli eradication

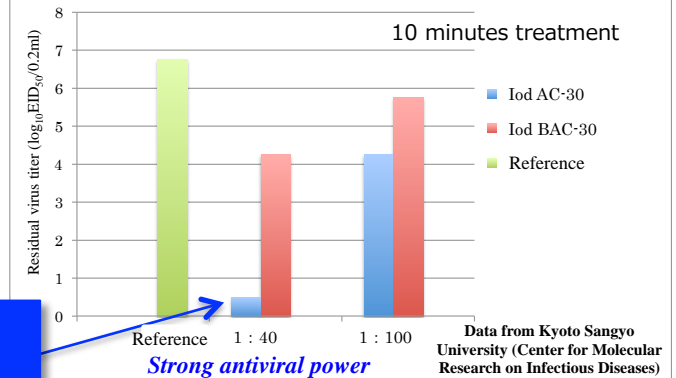
Long lasting disinfection

(E.Coli eradication factor from 1/10,000 to 1/1,000,000)

Avian influenza virus inactivation



Inactivation of avian influenza virus by two types of activated carbon doped with iodine (Iod AC-30 and Iod BAC-30, using 1:40 and 1:100 dosage)



Virus reduced to 1/100,000 in short time

Strong antiviral power

Data from Kyoto Sangyo University (Center for Molecular Research on Infectious Diseases)

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

Sample	Washing / Treatment	Virus solution (400μL)
Cloth Mask Ny	washed 1h after iodine loading	≤ 0.5 *
Cloth Mask Ny+PU	"	≤ 0.5
Clothing fabric Wo	"	≤ 0.5
Fabric mat PU	"	≤ 0.5
Reference		6.67

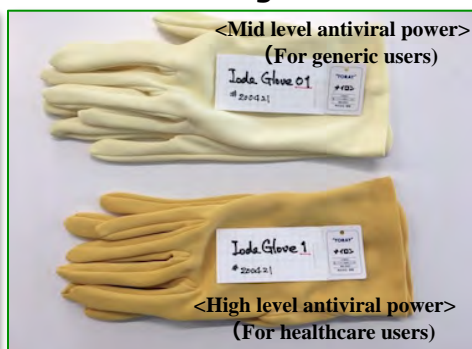
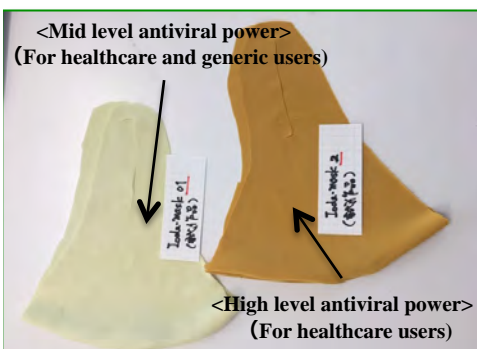
* Residual virus titer (log₁₀EID₅₀/0.2mL)

Ny: Nylon, PU: Polyurethane, Wo: Wool

Iode-mask

Iode-glove

Iode-hood



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

<Mid level antiviral power>
(For generic users)

<High level antiviral power>
(For healthcare users)

<High level antiviral power>
(For healthcare users)

<High level>

<Low level>

For healthcare users

Assuring high antiviral power with just a spray

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



Spraying on a conventional mask

Iodox©-spray

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.

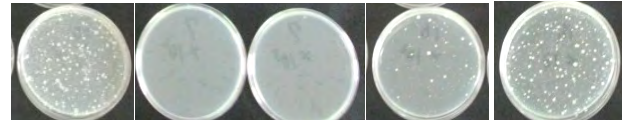
<Caution> depending on the user's utilization and conditions of use, Iodox-spray cannot ensure complete destruction of pathogens.

Immediate and persistent efficacy

Iodox-spray effect of conventional mask

	Conventional mask Nonwoven fabric	Bacteria solution added (ml)	Bacteria counting thin film method (CFU/mL)
1	No treatment (reference)	20	$10^7 \sim 10^8$
2	Using Iodox-spray treatment	20	0

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

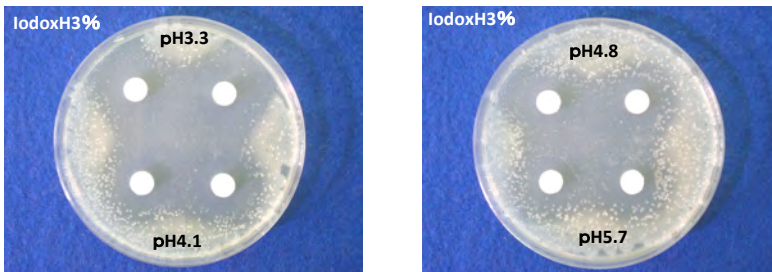


Reference Bacteria load (CFU/ml) 10^7 **Iodox (Wet) Bacteria count 0** **Iodox (Dry) Bacteria count 0** Cl-based (Wet) Bacteria count 10^4 Cl-based (Dry) Bacteria count 10^7

Strong disinfecting power (effective even if dried)

IodoxH(3%) Test on various pH conditions

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



[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.

[Antibacterial power/persistence]

Iodox-spray

It can be applied as a spray when it 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.



Virus reduced to 1/1,000,000 ~ 1/10,000,000

10 minutes treatment

[Antiviral power]

Data from Kyoto Sangyo University (Center for Molecular Research on Infectious Diseases)

> **Iodox-spray**

The virus is almost totally eradicated in short time

Sample tested	Residual virus titer
D①. Iodox C (12)-KSo	$\leq 0.5^*$
D②. Iodox C (4)-KSo	≤ 0.5
D③. Iodox C (1)-KSo	1.5
D④. Iodox B (12)-KSo	≤ 0.5
D⑤. Iodox B (4)-KSo	≤ 0.5
D⑥. Iodox B (1)-KSo	1.75
D⑦. Iodox H (12)-KSo	≤ 0.5
D⑧. Ref-KSo	4.75
Starting virus load	7.0

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



Reference (Bacteria load $\sim 10^7$ CFU/mL)

Iodox-spray (Bacteria count 0)