

<For Interior Work> Health-oriented Photocatalytic Water Base Paint

# OPTIMUS INTERIOR MEDICAL PAINT



**OPTIMUS  
MED**

High-performance paint for interior work with a proven anti-virus effect  
by simply applying on the wall

**Anti-virus**

Paint that can achieve  
an activity value of 4.1

※ 2.0 is the required value to be certified

**For a safe environment  
anywhere across the world**



Registered under Japan Paint Manufacturers Association, registration number H11010 / Level of diffusion grade of formaldehyde F☆☆☆☆  
Certified as non-combustible material NM-4760 / Not included among the 13 items designated by the Ministry of Health, Labour and Welfare

8 colors  
toning available (matte colors only)

# For All People Desiring to Create Safe Space



The paint that has achieved an activity value of 4.1 in an anti-virus test

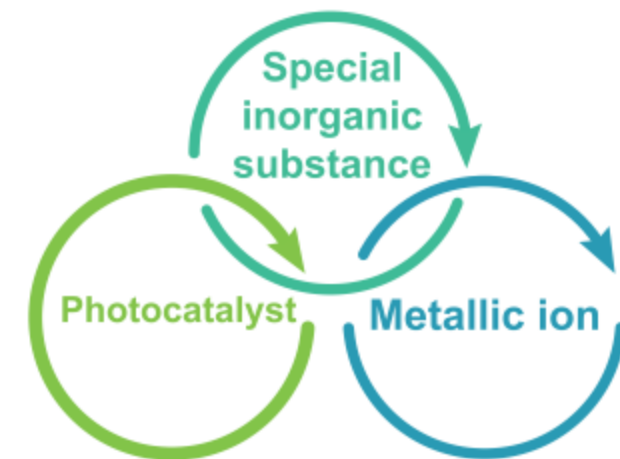
## OPTIMUS INTERIOR MEDICAL PAINT

“Optimus Interior Medical Paint” is a high-performance water base paint with anti-virus, antibacterial, deodorant, mold-proof, thermal features suitable for indoor use. With its inhibiting effect on the “envelope virus”, which has the same basic virus structure as those of flu and Covid-19, by applying this new paint on walls and ceilings of public facilities, commercial or office spaces, or entertainment spaces where people gather, not to mention medical or care facilities, it will serve to prevent infectious diseases of people all over the world.

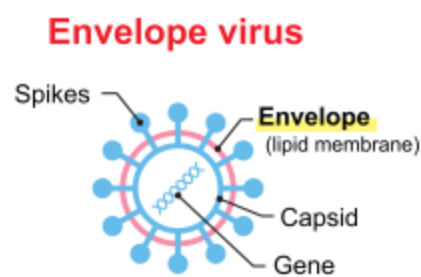
### Strengths of OPTIMUS INTERIOR MEDICAL PAINT with proven anti-virus feature

- 1. Photocatalyst** By absorbing the ultraviolet energy from the sun, it emits oxidized radical (active oxygen) and inhibits the growing of viruses and bacteria.  
 ※ As the photocatalyst is being metal-doped, it emits radical also with visible light (such as fluorescent).
- 2. Metallic ion**
  - i) The metallic ion is taken into cells and delivers antibacterial performance.
  - ii) It bonds with protein, etc. to block their functions.
  - iii) By blocking their functions, it inhibits the growing of viruses and bacteria.
- 3. Special inorganic substance** Hydrogen peroxide will be generated from the surface of the special inorganic substance and inhibits the growing of viruses and bacteria.

The 3 components co-act to thoroughly inhibit the growing of viruses and bacteria



### Works on the envelope virus!



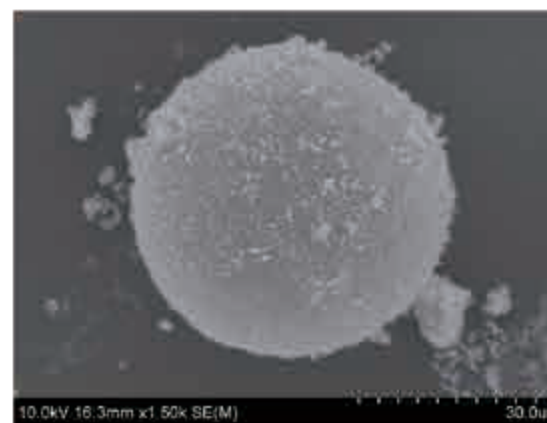
Covid-19 virus, cold sore, flu virus, etc.

The 3 components break into the membrane of the protein of envelope virus and inactivate the RNA (nucleic acid) inside the virus.

Viruses are generally tinier than bacteria, and there are also 2 types of viruses—those with a protein membrane called envelope and those without. **OPTIMUS INTERIOR MEDICAL PAINT has been proved to have inhibiting effect on the viruses with an envelope (with a decrease rate of 99.9999%).**

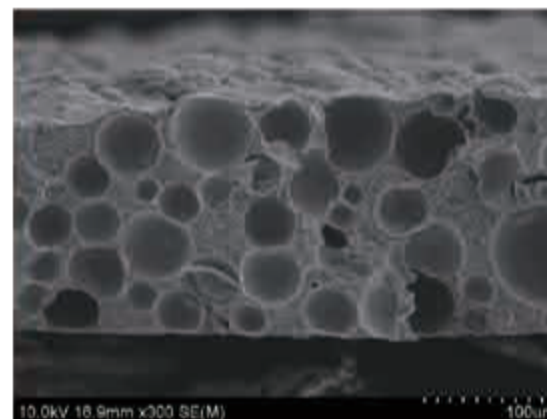
### “Uniqueness and Strength of OPTIMUS”

#### “Super capsule” covered by photocatalyst



The “super capsule” with patent technology, contained in Optimus Interior Medical Paint. A nano-sized photocatalyst is supported by a 20-micron capsule.

#### Optimus paint in section



With the photocatalyst supported in the “super capsule” being oriented in a dispersed manner on the painted surface, it is structured so that the triple power along with metallic ion and special inorganic substance will realize magnificent effect.

# Proven anti-virus effect based on ISO21702 anti-virus test pursuant to the international standards

**Anti-virus**  
Paint that can achieve an activity value of 4.1  
2.0 is the required value to be certified

## Anti-virus test

Viruses and flu viruses with envelope that infect animals

- Purification of test viruses
- Toxicity test of sample cells
- ▼ Inoculate test virus liquid into test sample
- ▼ Attach firmly with film
- ▼ Static cultivation for 24 hours in accordance with the specification at 25°C
- ▼ Collect test virus liquid
- ▼ Prepare 10-time serial dilution
- ▼ Add to host cell
- ▼ Cultivate
- ▼ Measure virus infection value by plaque technique
- ▼ Calculate anti-virus activity value



### 試験結果 (Test Results)

①毒性試験の結果 (Result of toxicity test)

試験項目	毒性試験 (インフルエンザウイルス)	宿主細胞 (MCK細胞) への毒性	MCK細胞への感染に対する影響
無加工ガラス	無し None	無し None	無し None
OPTIMUS INTERIOR MEDICAL PAINT	無し None	無し None	無し None

②抗ウイルス試験の結果 (Result of anti-virus test)

試験項目	ウイルスの感染価 (pfa/cm <sup>2</sup> ) *		抗ウイルス活性値
	0 時間 hour	25 °C, 24 時間 hour	
無加工ガラス	3.8E+05	8.8E+04	-
OPTIMUS INTERIOR MEDICAL PAINT	-	< 6.3	4.1

\*E+05 は、" × 10<sup>5</sup>" を表す。  
 \* 試験ウイルス液の濃度: 2.5 × 10<sup>7</sup> pfa/ml \* Concentration of test virus liquid: 2.5 × 10<sup>7</sup> pfa/ml  
 \* 接種ウイルス液: 0.4 ml \* Inoculated virus liquid: 0.4ml  
 \* 抗ウイルス活性値: R=U<sub>1</sub>-A<sub>1</sub> \* Anti-virus activity value: R=U<sub>1</sub>-A<sub>1</sub>  
 U<sub>1</sub>: 無加工試験片における反応後の単位面積当たりのウイルス感染価の対数値  
 A<sub>1</sub>: 抗菌加工試験片における反応後の単位面積当たりのウイルス感染価の対数値

Tested at "Kanagawa Institute of Industrial Science and Technology"

## There are more than just anti-virus effect! Clean air will last without any maintenance

### Air cleaning and anti-bacteria effect

By adding antibacterial agent feature to the inherent antibacterial function of photocatalyst, it will improve the function of destroying the bacteria coliform. In a test conducted by an external organization to check the effect of antibacterial paint, **an antibacterial effect has been confirmed** against MRSA, which causes O-157, an intestinal tract hemorrhagic bacteria coliform, and healthcare-acquired infection

### Mold-proof effect

Mold can cause allergies as well as pneumonia and other diseases. Photocatalyst **destroys not only bacteria but also mold**. It also **prevents growing of mold in a humid environment**. It **prevents mold bacteria floating in the air**, which cause asthma and pneumonia, from growing.

### Deodorant effect

Inside the medical and welfare facilities, there are **odors characteristic to hospitals** as well as unpleasant odors of excrement of patients taking medicines. **With the photocatalytic effect, Optimus adsorbs and decomposes substances that cause bad odors**, such as ammonia (odor from bathrooms), nonenal (aging body odor), and acetic acid (odors of sweat and tobacco).

### Thermal effect

As there are weakened patients, adjustment of temperature is also important in medical and welfare facilities to maintain body conditions. Micro-capsule of Optimus **prevents heat movement and captures the heat inside the room**. It keeps comfortable temperature and saves approximately 10-15% electricity, thereby **contributing to the reduction of CO<sub>2</sub>**.

## Related Products

**Virus-free Series** For the anti-virus measures of doorknobs, rails, and tables!

# Bio Clear Coat

Anti-virus clear paint

Easy installment

Wiping with damp cloth

Painting by brush or roller

Need to apply only once

Tested by Japan Textile Products Quality and Technology Center

## ISO 21702 TESTED

Tested virus: influenza A (H3N2)

A/Hong Kong/8/68; TC adapted ATCC VR-1679

### How to Install



For preparation, completely remove oil and dust from the application surface by using alcohol or the like.



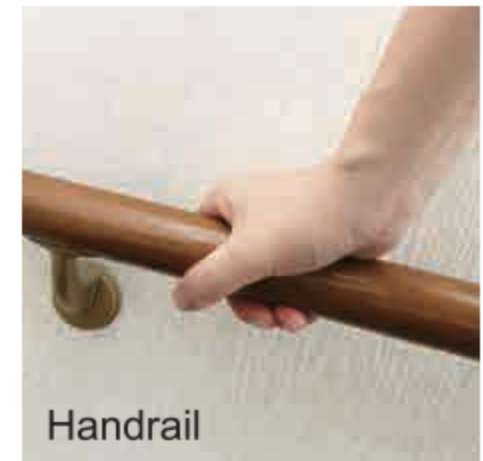
Apply the defined amount (50g/ ) using a brush or a roller. Excessive or too little amount may result in malfunction



Leave to dry out and formed completely for at least 18 hours after the application. Although you may touch lightly after 4 hours, the effect will be greater if dried completely.



Doorknob



Handrail

### ○ Can be applied mainly on:

Stainless steel, wood, cloth resin-type, rail, aluminum, non-ferrous metals

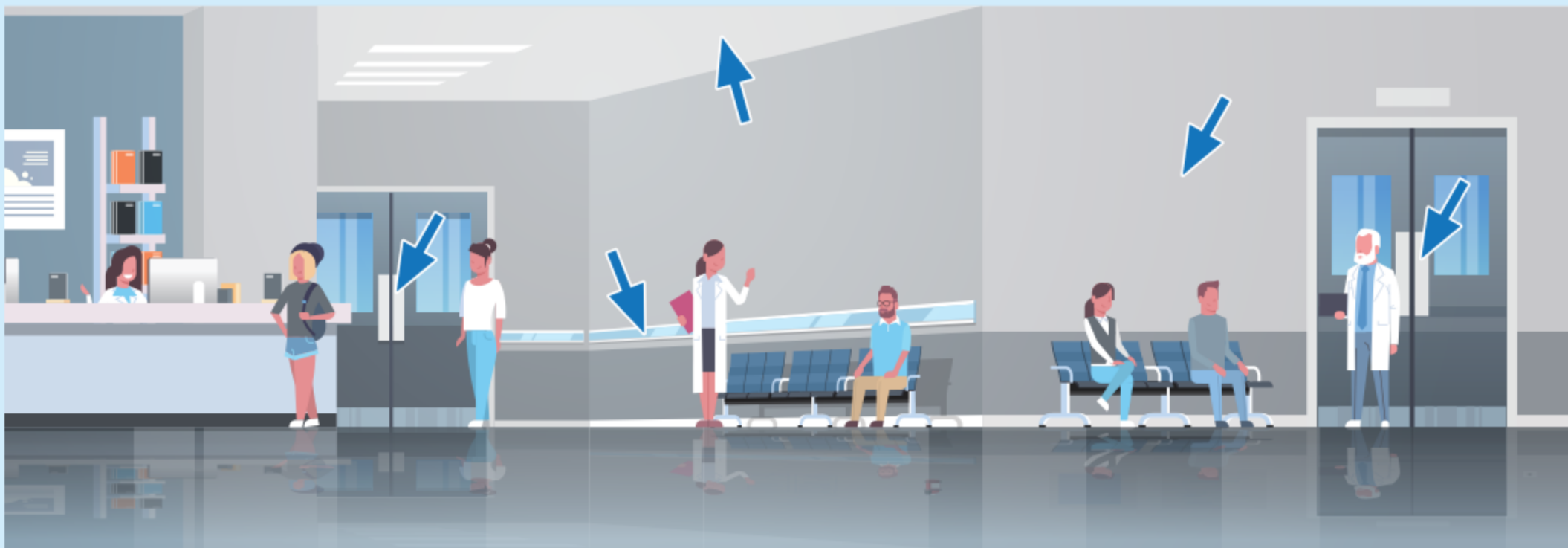
### ✗ Cannot be applied on:

Fluorine, polyethylene, silicon, etc.

Please make sure to check the specification for the installment for the detailed method of application.

Durability: 1-5 years (depending on the frequency of use and where you apply)

## By applying this on ceiling, walls, doorknobs, and rails, spaces where people spend time will be cleaner





Medical Corporation Kosenkai Takata Kamitani Hospital

## USER'S VOICE

The odors characteristic to the linen rooms have been removed. With the anti-virus and antibacterial effect, we can always provide sheets to our patients in a clean environment. (Hospital staff)

We could get rid of the characteristic disturbing odor and kids come to our place without feeling unpleasant. (Dental assistant)

With its function of inactivating the airborne droplets of viruses on the walls and ceilings, by merely applying Optimus Interior Medical Paint on the walls and ceilings, it protects your loved ones against the risk of virus infection.

## We have been hearing appreciative voices from users

### USER'S VOICE

Odors of nonenal and bodily waste have been reduced by applying this product.  
(Secretary General of an elder care facility)

We applied it in our living room. With a good finish and cleaner air, we feel comfortable. (Individual)

By applying Optimus Interior Medical Paint on the ceiling, it will clean the air in the space as an air purifier does and refresh the air environment each day.



Stellar education garden

# High function, high quality, and easy to apply, with rich design and elegant finish

## Method of application

Process flow	Used material	Diluent	Amount of application (kg/ )	Application interval (20°C)	ACovered area ( /can)
Preparation	For the surfaces of new concrete and mortar, dry well until the moisture content rate is 10% or lower and PH is 9.5 or lower. When repainting, remove fragile and old paint film, smudge, mold, and chalking, etc. with sander, leather skiving, or wire brush to make the surface clean. Spackle the joint part of the board and fill large unevenness and holes with emulsion putty.				
Paint	Optimus Interior Primer	Water 0-5% (dilution rate)	0.15(kg/ ) Roller, brush	2 hours or longer	Apprx 100 /15kg
1st paint 2nd paint	Optimus Interior Medical Paint	Water 0-5% (dilution rate)	0.15(kg/ ) when applied using a roller. Brush and spray can also be used.	2 hours or longer	Apprx 50 /15kg

## List of physical properties

Item	Details	Item	Details
Raw material	Water base acrylic emulsion paint	Shockability resistance	No cracking, deformation, or peeling
Thickness of paint film	Apprx 0.2mm (standard level of painting: paint in 2 layers)	Alkali resistance	No cracking, deformation, peeling, expansion, softening, or melting, and no fogging or change in color compared to the parts not abraded
Luster	Matte	Fading or change in color resistance	No cracking, deformation, or peeling recognized
Low-thermal stability	No detachment or aggregation of components	Mold proof	No growing of mold
	Based on JIS-A 6909	Electrification	Surface resistance value 108Ω
Cracking or resistivity due to initial drying	No cracking	Heat conductivity	0.15 (w/m.k)
Adhesion level	1.2N/		
Detergence resistance	No exposure of basis due to peeling or abrasion		

Developed in collaboration with industry, government and academia



Sakai City

### Key Products:

Optimus Interior Paint and White Paint have been developed in collaboration with the Graduate School of Osaka Prefecture University with a support from Sakai City.

Patented: Patent number 6027394

### OPTIMUS INTERIOR MEDICAL PAINT

Registered by the Japan Paint Manufacturers Association  
Registration number H11010

Level of diffusion grade of formaldehyde F☆☆☆☆

Certified as non-combustible material NM-4760

Not included among the 13 items designated by the Ministry of Health, Labour and Welfare

Under patent application

Can be applied on the wallpaper



Best for renovation and maintenance, as it can be applied without peeling off the wallpaper

## OPTIMUS INTERIOR MEDICAL PAINT

www.optimusmedicalpaint.com



# OPTIMUS

OPTIMUS INC.  
www.optimus.jp



Visit us at our showroom!

Developed and manufactured at our own factories

### Manufacturer

Hoei Sangyo Co., Ltd.  
Postal code 599-8233  
94 Onoshibacho, Naka-ku, Sakai City, Osaka Prefecture  
TEL 072 235 1131  
FAX 072 234 0835  
ISO9001: certified in 2015  
ISO14001: certified in 2015



<https://www.facebook.com/Optimus.jp>



<https://www.instagram.com/optimuspaint/>

### Headquarters Showroom OPTIMUS SHOWROOM

Postal code 556-0021  
3F, 1-2-8 Saiwaicho,  
Naniwa-ku, Osaka City,  
Osaka Prefecture  
TEL 06 6562 1151  
FAX 06 6562 3111

### Tokyo Laboratory

Postal code 150-0001  
2F Hill Top Jingumae,  
2-3-10 Jingumae,  
Shibuya-ku, Tokyo  
TEL 03 6804 3292  
FAX 03 6804 3293