Nasc Nano Coat products

1 COATING APPLICATION

Coating application by trained technical staff

Nasc Nano Coat is applied to areas that are in contact with hands, such as handrails, to quickly inactivate viruses and bacteria and reduce the risk of contact infection.It also helps in reducing cleaning costs because it reduces the frequency of cleaning with alcohol.
The effect lasts for about three years, depending on the environment in which it is used.
Post-installation certificates and stickers are provided to assure safety and security.

2 SPRAY CAN

Spray can that allows you to coat “Nasc Nano Coat” by yourself.

One spray bottle covers 5㎡(for approximately 1 small sized car) and easy to use.
Since the coating is transparent, you can easily apply the coating to plastic sheet, elevator buttons, registers, shopping baskets and trays by yourself.
Layering is more effective. It is easy to be noticed by “Coating Applied” sticker.
Product name: Nasc Nano Coat antivirus processing spray
Content: NET 100ml / can
20 bottles / box
Price: 120,000 yen / box *6,000 yen / can (tax-excluded)

1 Preparation before coating

2 Spray coating

3 Drying

Applied Facilities

HOSPITAL

NURSING FACILITY

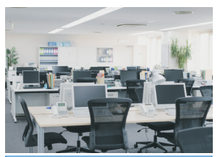
AIRPORT

STATION

SCHOOL

MUSEUM

THEATER



OFFICE

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NASC NANO COAT

Virus infection control with nano technology

Nanocoating is a coating technology using a molecular structure that provides distinctive features at the nanometer order of the thickness of the film produced using nanotechnology.

Nasc’s proprietary single-nanofilm technology

UNIDO ITPO Tokyo's STePP Sustainable Technology Promotion Platform

Our technology is registered with United Nations Industrial Development Organization (UNIDO) sustainable technology promotion platform [STePP].

Manufactured by Nasc Nano Technology Patent No. 6676659

Virus measure that lasts for 3 years

Quickly inactivate 99% of virus and bacteria

Inactivation: a state in which the virus does not multiply and is not active.

“Nasc Nano Coat” application

nasc

5 features of Nasc Nano Coat

❶ Antimicrobial and antiviral effects from the fusion of three original technologies

■ **Antimicrobial and antiviral effects indoors**

An antibacterial and antiviral coating agent for indoor use was achieved by using tungsten oxide as a photocatalyst, which uses visible light (such as LED) as energy to oxidize and decompose organic compounds (dirt, bacteria, etc.) that come into contact. （Conventional products that use titanium dioxide as a photocatalyst use UV as energy and are mainly used outdoors.)

■ **Compounding inorganic nanoparticles**

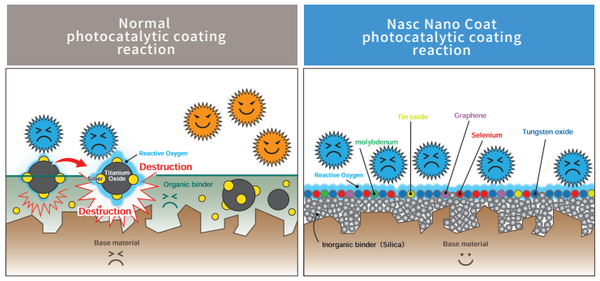
Functional inorganic nanoparticles such as platinum, graphene, silicon dioxide, selenium, molybdenum etc., which have antibacterial and antiviral effects even in places where there is no light, are blended with our unique technology.

■ **Realization of the industry's only single nanometer size particle of less than 10 nanometers**

The size of virus is 10 ～ 300 nanometer. Nasc Nano Coat uses its proprietary technology to manufacture all functional particles to less than 10 nanometers, which means that they are always in contact with nano-sized viruses. The only product in the industry capable of coating single-nanometer (less than 10 nanometers) inorganic metal materials that are uniformly dispersed without clustering.

	Photocatalytic classification	Indoor LED,Fluorescent light (visible light)	Type of solution	Effect against bacteria and virus	Maintaining clean environment	Design quality
Nasc Nano Coat	Visible light reactive	Suitable	It is water-based, inorganic solvent so it is resistant and does not damage the base material.	Formed with nano-particles of 10 nm or less, they have a large contact area and respond effectively to bacteria and viruses.	Contains anti-static ingredients (tin oxide, graphene and molybdenum) to resist dust, dirt, bacteria and viruses on surfaces	Since it is transparent and colorless it can be applied to any material.
Normal photocatalytic coating	UV reactive	Not suitable	Since it is an organic solvent, the photocatalytic component can destroy the binder (bonding component) and remove the coating, or even damage the base material.	Large particle size or clustering particles are less effective a jainst viruses and bacterias.	Photocatalyst with organic solvents can easily attract dust, dirt, bacteria and viruses to the surface.	Since it turns to white color, the design is lost in black material.

■ Patented ■ Single nano size protects solution and base material.



With normal photocatalytic coating...

The photocatalyst is buried in the coating and does not produce enough active oxygen in the space. In addition, the generated reactive oxygen destroy the binder and base material.

With Nasc Nano Coat...

The photocatalyst is fixed by the silica binder and the area exposed to the air is much larger, producing enough active oxygen. The silica binder does not react to active oxygen and the silica layer protects base material from damage. Therefore, the effect lasts permanently.

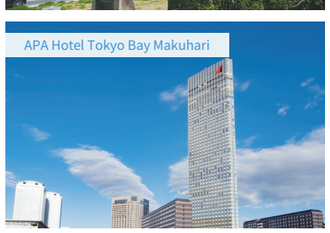
❷ Many achievements over a decade since its initial adoption in 2009

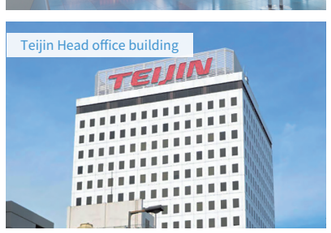

Kansasi International Airport


Ichihara City Hall ／ Health Center


Haneda Airport International Flight


Hotel Nikko Kansai Airport


APA Hotel Tokyo Bay Makuhari



Teijin Head office building

❸ Patented technology

Nasc Nano Coat technology is a patented technology.
It protects the base material from photocatalysis by applying two layers of agent, one composed mainly of silicon dioxide as primer and the other is photocatalysis.
Patent No. 6676659.

Patent No. 6676659

❹ Japanese advanced technology registered with the United Nations Industrial Development Organization (UNIDO)

It is registered in the Sustainable Technology Promotion Platform (STePP) as a technology that can contribute to both industrial development and environmental protection, such as environmentally friendly production technology and industrial waste treatment technology. It leads to ensuring healthy lives and promotes wellbeing, goal 3 of the Sustainable development Goals(SDGs), and industrial development, goal 9, which in turn contributes to the achievement of other SDGs, such as poverty eradication and improved sanitation.
*The STePP will be assessed on the basis of the following five technical criteria and the company's business attitude

- Applicability in developing and emerging countrie
- Comparative advantage over competing technologies
- The contribution to sustainability when this technology is applied
- Technological matuarity
- Comforming to UNIDO’ s industrial development role

Users will be able to indicate that the coating is registered with UNIDO's "STePP" and that it contributes to SDGs 3 and 9.

Sustainable Technology Promotion Platform(STePP)

UNIDO ITPO Tokyo's STePP
Sustainable Technology Promotion Platform

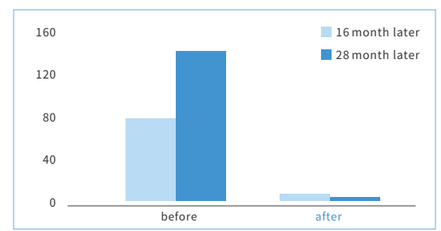
Sustinable Development Goals (SDGs)

❺ The world's first technology for contact infection prevention in public facilities

In 2009, the world's first commercialized antibacterial and antiviral coating with photocatalyst and inorganic materials.The post-application follow-up study (28 months) was presented at an international conference (International Union of Microbiology Conference IUMS 2011). A wide range of other tests have been conducted.

■ **Result of wiping test on carts**
Comparison of coated and uncoated carts

The average bacterial count on handle of 48 coated carts handle was 1 bacteria compared to 141 bacteria in the uncoated carts, with similar results after 1 and 2 years, confirming that the antimicrobial effect continued.



Third-party testing

- Influenza Inactivation Test
- Viral inactivation and antibacterial test
- Acute toxicity test in damselfish
- Food sanitation act toy manufacturing standards
- Food sanitation act toy manufacturing standards polyvinyl chloride
- Closed patch test
- Lightless mold resistance test in alternaria
- Lightless mold resistance test: black and blue molds
- Lightless legionella testing
- Lightless antibacterial test

Wiping test result after 1 year and 4 months and 2 years and 4 months at the airport.