

## NEWS RELEASE

17 March 2021

### **Development of Sol-gel Antibacterial and Antiviral Coating for Glass**

NSG Group has successfully developed a new antibacterial and antiviral coating for glass substrates, based on its proprietary sol-gel technology.

Copper contained in the newly developed coating, reacts with water, oxygen and other substances in the air to generate active oxygen ( $H_2O_2$ , OH, etc.), which in turn inactivates bacteria and viruses by destroying their envelopes and decomposing lipids, protein and gene materials.

The laboratory evaluation conducted by a public institution based on international standards has confirmed a high virus inactivation effect of 99.99% or more without the need for light activation.

In addition to the excellent antibacterial and antiviral performance with effectiveness in darker places, the coating's other properties such as high durability and transparency make it suitable for a wide range of glass applications which may be directly contacted by people. In addition to mobile information devices such as smart phones and tablets, it can be used for the operating panels and buttons of various equipment such as cash registers, ATMs, medical equipment, elevators and household appliances. The Group believes that the technology can contribute to making home and public places requiring stringent hygiene, such as hospitals, care facilities and restaurants, safer and more comfortable.

The Group plans to launch the new coating within fiscal year March 2022.

#### **About NSG Group**

NSG Group (Nippon Sheet Glass Co., Ltd. and its group companies) is one of the world's largest manufacturers of glass and glazing products for the architectural, automotive industry and technical glass sectors. With around 27,000 employees, NSG Group has principal operations in about 30 countries and sales in over 100 countries. <https://www.nsg.com>

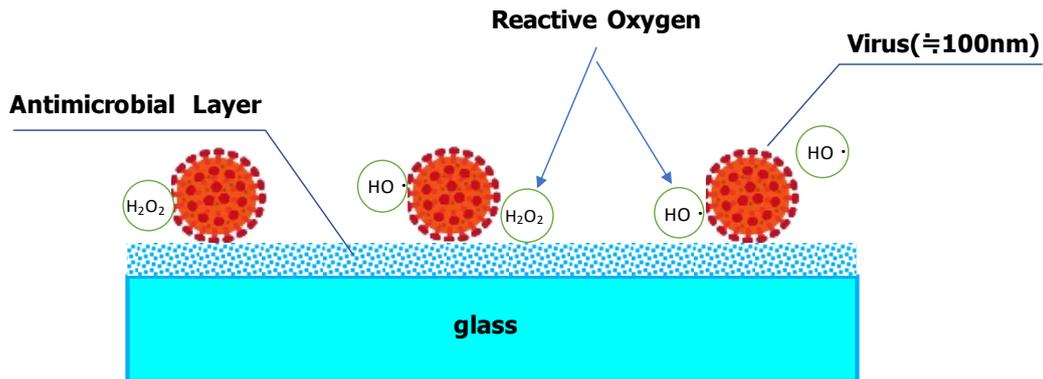
**MEDIA CONTACT:** Please visit Media Contacts on NSG Group website from the following link  
<https://www.nsg.com/en/media/media-contacts>

**CUSTOMER CONTACT:** Please visit the contact page from the following link setting the inquiry type as "Display Glass"  
<https://www.nsg.com/en/contact-us>

## [Reference]

**Sol-gel technology:** A material synthesis method for producing ceramics and glassy coatings, by densifying a gel synthesized by the chemical reaction of the solution raw material by heat treatment. Capable of forming highly adhesive coatings with the same silica structure as the glass substrate.

### Surface reaction:



### Strength of the new coating technology:

1. Excellent antibacterial and antiviral properties
  - 99.99% influenza virus reduction effect under the ISO21702 evaluation conditions (antiviral activity value 4.2)
  - Confirmed effect on human coronavirus (HCoV-NL63 (human coronavirus NL63))
  - Confirmed effect in antibacterial performance test (ISO22196: Escherichia coli)
 

Test method: A bacterial solution or virus solution containing bacteria and virus is dropped onto the test piece with 35 C ± 1 C, relative humidity 90% or more. After culturing for 24 hours in, measure the number of viable cells per 1cm<sup>2</sup>
2. Excellent durability
 

With the proprietary sol-gel technology, highly durable against friction and chemicals, suitable for frequent contact operations and can be cleaned by wiping cloth (Pencil hardness 9H)
3. Excellent optical and electrical characteristics
 

Almost as transparent as uncoated glass. Can be used for capacitive touch panels, etc.
4. Effective in darker places
 

Based on the reaction of copper, can retain its antibacterial and antiviral effects even in darker places without ultraviolet rays or visible light.

### **Caution**

- This product is not intended to treat or prevent illness. In addition, it is not intended for medical treatment such as medical products and medical equipment.
- The antiviral performance is based on laboratory test results and may vary depending on actual usage conditions.
- This product does not completely prevent infection by viruses and bacteria. The antiviral and antibacterial effects are expressed against viruses on the surface of the coating and do not guarantee infection prevention.