



Accelerated wear test: Evaluation of antiviral protective film effectiveness after simulated long term use

Testing Regime

In order to test the effectiveness and efficacy of the film after long term use, a wiping test was developed to simulate regular cleaning for six months

Test Methodology

To simulate real life sanitation procedures, a rag soaked with various cleaning products was used to regularly wipe the protective film. The results below are reflective of three, six and 12 months, assuming cleaning is done three times daily. Wiping was carried out with standard force.

T-1 Solution used for wiping test impregnated Solution	T-2 Acceleration period and number of wiping sessions	
Tap water	Assumed Period	Wiping frequency (round trip)
Neutral detergent diluent	3 month	270
70% ethanol	6 month	540
200ppm Aqueous Na Hypochlorous acid solution	12 month	1080

ISO 22196 Test Method

The antiviral performance was evaluated according to ISO 22196 at three, six and 12 months.

Viruses used in the evaluation Influenza virus (H3N2) A/Kitakyusyu/159/93

1. The recovered anti-viral processed PET film is cut.
2. A 100- μ L of the viral suspension was added, and a 4 \times 4 cm cover film was covered with it.
3. Settle at 25 $^{\circ}$ C for 15 minutes.
4. The specimen surface was washed out with medium containing surfactants.
5. The virus infectious titer (virus count) in the above washout solution was measured by plaque test.
6. The antiviral activity value was evaluated as the following equation. $R = U_t - A_t$

R: Antiviral activity value

U_t : Logarithmic values of viral infectious titers obtained from tests using raw samples.

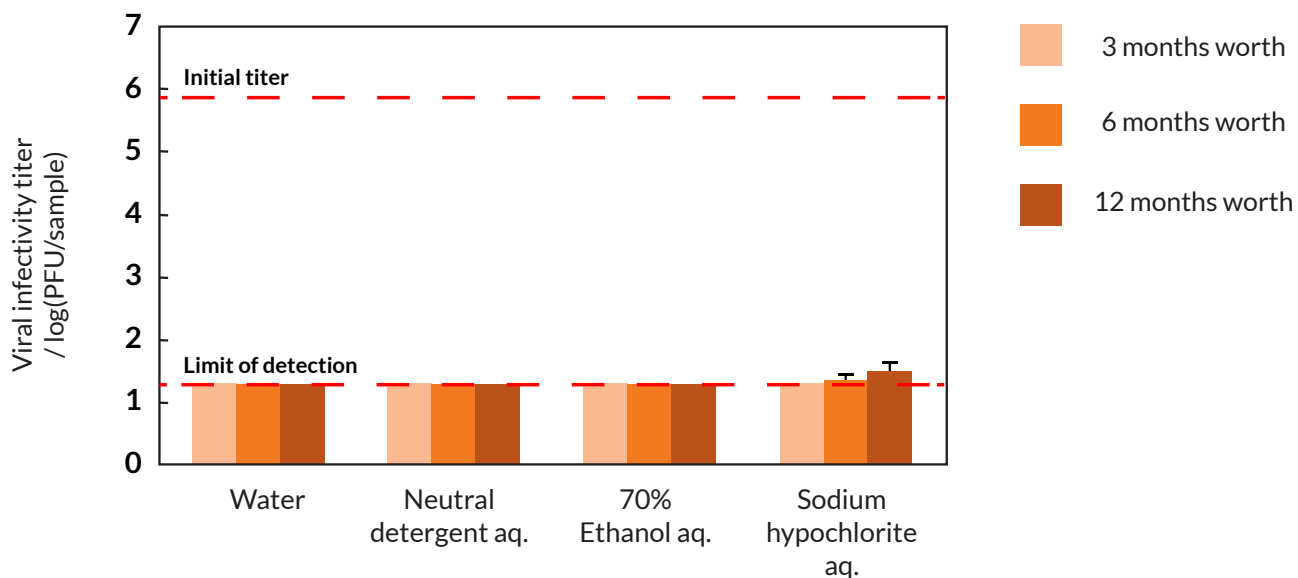
A_t : The logarithmic value of the viral titer obtained in an antiviral test using processed antiviral specimens (actual use specimens).

Evaluation Results

Figure 1: Antiviral performance of the protective film after accelerated wear test

The anti-viral film still effectively kills 99.9% of the influenza virus after 12 months usage for all cleaning protocols, only a slight decrease in antiviral activity was observed with the sodium hypochlorite solution (household bleach).

Figure 1



Antiviral properties of anti-viral-treated PET film after wiping test

Disclaimer – actual results may vary based on testing conditions, abrasion or wiping strength and frequency of wipes