

Test Inspection Report


04/20/07

Client: Kon Co., Ltd.

We had a test of samples commissioned to our institute from you in 2nd of April 2007, and we are demonstrating the results as described below.

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検査責任者: 

1. Sample Name: TPX-85
2. Objective: Testing anti-fungal performance
3. Test Method: Test method for film adhesion under photoirradiation (dark condition)

Following "the Test method for film adhesion under photo irradiation by SIAA", drop fungus liquid prepared by 500/1 normal bouillon onto the surface of a sample piece and adhesion the film, and keep under darkness situation in 20-25°C. Measure the number of viable bacteria of fungus liquid on the sample piece.

4. Strain: Escherichia coli NBRC-3972
Staphylococcus aureus NBRC-12732
5. Medium: Normal bouillon (*Eiken*)
Standard ager medium (*Eiken*)

6. Test Result

Fungus Name	Change with time of number of fungus					
	beginning	24hrs-1	24hrs-2	average		
E.coli	1.4×10^5	8.4×10^4	7.1×10^4	7.8×10^4		
St.aureus	1.7×10^5	1.1×10^5	1.4×10^5	1.3×10^5		

Control Test Result

Fungus Name	Change with time of number of fungus					
	beginning	24hrs-1	24hrs-2	average		
E.coli	1.4×10^8	8.8×10^8	1.0×10^8	9.4×10^8		
St.aureus	1.7×10^8	1.1×10^8	9.4×10^8	1.0×10^8		

* <10 : not detected

unit : CFU/sheet

Air purification by photocatalyst

Decomposition function(Air purification) of nitrogen dioxide NO_x has been confirmed from the test result. (Attachment : data of Environmental Technical Laboratory, Ltd.)

To evaluate the function we compared air purification by photocatalyst to that by trees.

Further details are summarized below, and excerpts referred to “Manual of Air Purification Tree” (Environmental Restoration and Conservation Agency) are attached.

1. Function of air purification by photocatalyst

Decomposition function of NO_x per 1 day

from test result (Environmental Technical Laboratory)

Purifying function per 1 m² · 1 day is 0.7392mmol···①

※Assuming light radiation time per 1 day is 8 hours.

2. Function of air purification by plants (trees)

Decomposition function of NO_x per 1 day

Reference: “Manual of Air Purification Tree”

Purifying function per a tree · 1 day is 18.39mmol···②

※Assuming that NO₂ concentration of the atmosphere is 23ppb, and 1 tree (a maidenhair tree) of breast height diameter 15cm.

With those results above

Seeking a necessary applying area in order to obtain air purifying function as same as the function of 1 tree.

$$\textcircled{2} / \textcircled{1} \rightarrow 25 \text{ m}^2$$

Seeking air purifying by actual photocatalyst applying cases

Applying photocatalyst solution toward an outer wall of five-story building about 100 m² → It equivalent to 4 trees.

Applying photocatalyst solution only to an outer wall of a ten-story building about 500 m² → It equivalent to 20 trees.

Applying photocatalyst solution only to an outer wall of a twenty-story building about 2,000 m² → It equivalent for to 80 trees.

◎In areas of high concentration of nitrogen oxides in the atmosphere and areas where doesn't have enough trees as an urban area, applying photocatalyst solution will be considered to have high air purification effect.