

# Photocatalyst fluid M-Clean

# MV-6

2. March.2013

New Development Division  
MARUSYOSANGYO CO., LTD.





Rev.0

## 1. Description

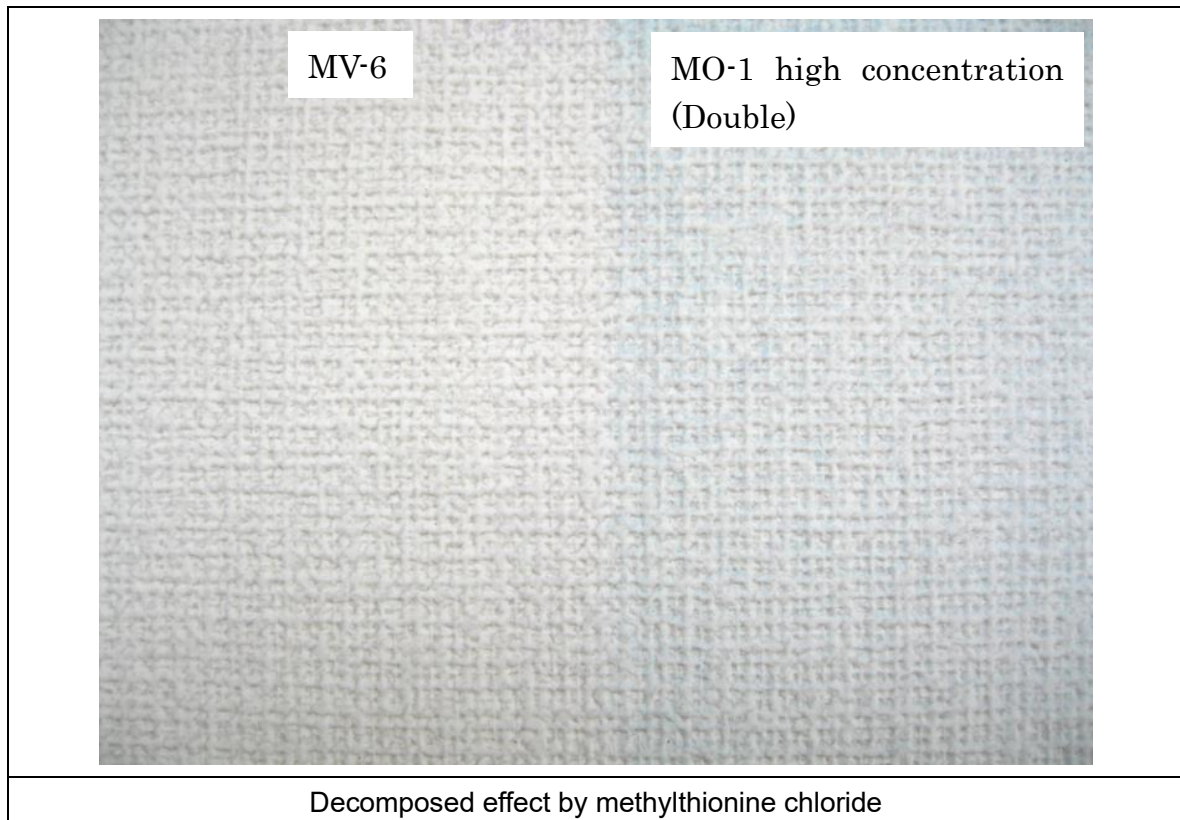
MV-6 is used next generation type of photocatalyst particle. Reacted visible ray is more effective than former visible reaction type of photocatalyst particle. MV-6 has high decomposed effect and gas absorbed effect.

Character	<ul style="list-style-type: none"><li>➤ High photocatalysis effect</li><li>➤ Can use low-light intensity more than other M-Clean series.</li><li>➤ Absorbed several gas substance</li><li>➤ Coated surface can catch up several bacterial</li><li>➤ Used several materials surface</li><li>➤ Promote formation of inorganic film (Does not use any organic substance)</li><li>➤ Does not use any basecoat (single application)</li></ul>
Appearance	White
Fluid type	Water based fluid (not DG)
Main component	TiO <sub>2</sub> and SiO <sub>2</sub>
Dry temperature	At normal temperature
Dry out time	Over 24 hours
Application method	Spray gun, Roller, Brush, etc
Spread quantities	15 – 50 g / 1 m <sup>2</sup> (large of the amount used is high effect)
Appearance of dry out	A little white surface (poor transparency)
Durability	3 – 5 years

## 2. Decomposed effect in a room

Exposed time Default	Default	After 40 min
Former visible reaction type MO-1		
New visible reaction type MV-6		

illuminating radiation : fluorescent 3500Lux



### 3. Decompose effective test on clothes (indoor room under 1300 lux by fluorescent)

(1) Photograph and graph

		※High decomposed effect and high photocatalysis effect are uptrend on graph
↓↓ After 6 days	↓↓ After 6 days	
<b>MO-1</b> (the former visible reaction type of photocatalyst)	<b>MV-6</b> (New visible reaction type of photocatalyst)	

(2) Comparative figure of decomposed chromaticity

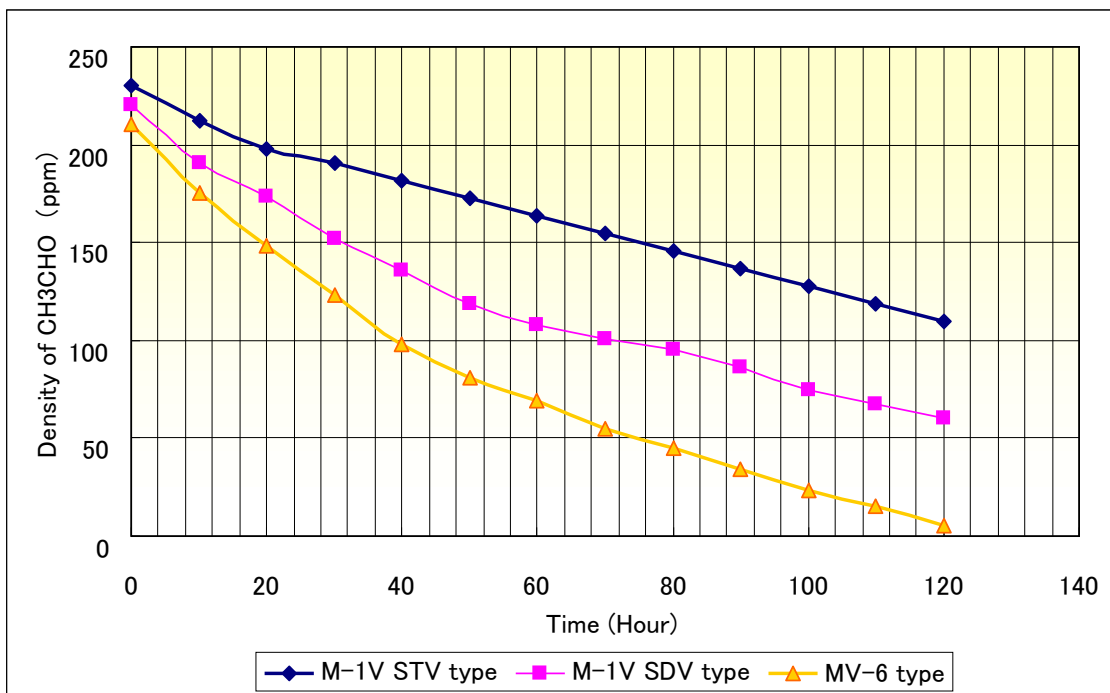
Name	Chromaticity	Chromaticity of after 6 days	Chromaticity differential	decomposition rate	comparative activity
Other mfr UV type	326	339	13	4.26%	4.26%
M-Clean MO-1	335	389	54	17.70%	17.70%
M-Clean MV-6	318	623	305	100.00%	100.00%

MV-6 is about 5.6 times of decomposed activational effect more than MO-1.

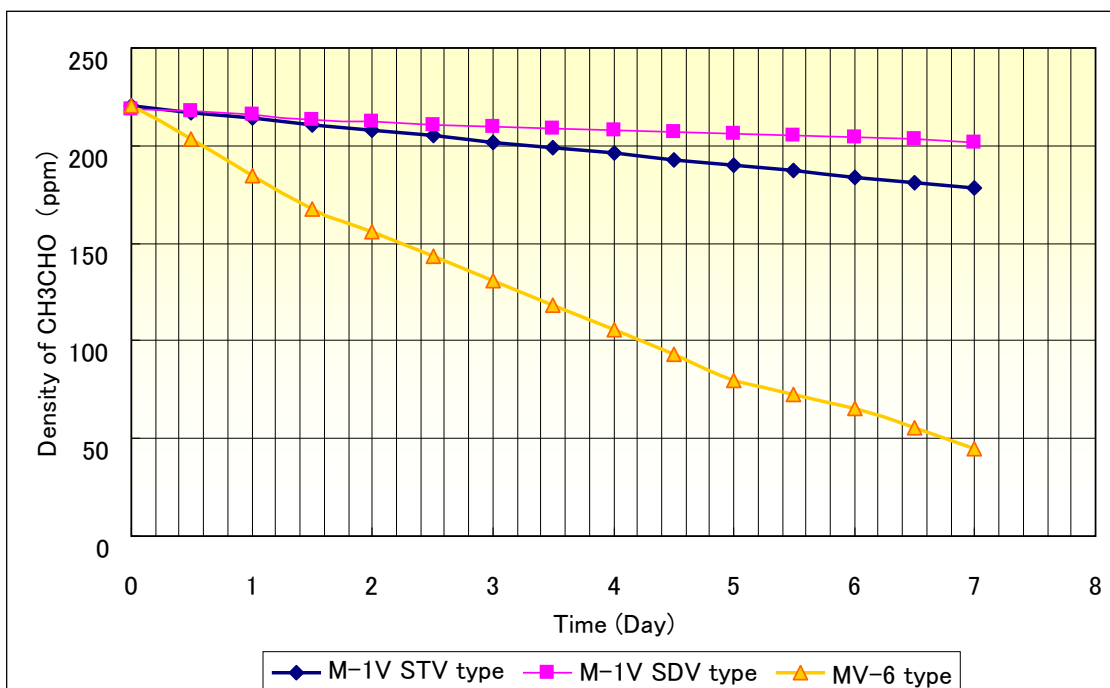
#### 4. Gas decomposed effect

##### 4-1. Data of decomposed acetaldehyde gas

(1) Using lamp: Mercury lamp (Include UV ray)



(2) Using lamp: Mercury lamp (Exclude UV ray)



Note: M-1V STV and M-1V STV is used former visible reaction type of photocatalyst. MV-6 of photocatalyst particle is used new type of visible reaction type of photocatalyst.

# KAKEN

## Kaken Test Center GENERAL INCORPORATED FOUNDATION

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Tel: +81-(0)6-6441-6752, Fax: +81-(0)6-6441-6803

Kaken Test Center is formerly named as "Japan Synthetic Textile Inspection Institute Foundation(JSTIIF)".

No.1/2

Certificate No. : OS-18-041316

Date : October 9, 2018

### TEST CERTIFICATE

Requested : MARUSYO SANGYO CO.,LTD.  
Test Sample : Photocatalyst M-Clean MV-6 1 sample  
Test Items : Performance Testing for Reduction of Gas  
Received : October 1, 2018

**This is to certify that the results of laboratory test applied on the sample are as follows:**

#### 1. Test Results

Performance Testing for Reduction of Formaldehyde Gas

Sample \ Test Item	Concentration of gas(ppm)		The rate of reduction (%)
	Initial	After 24 hours	
Original*	20	6.6	53
Blank test	20	14	—

\* Removed backside release paper

Kaken Test Center General Incorporated Foundation  
Osaka Laboratories  
T.Takashima—Chemical Testing Laboratories Manager

Approved by : T. Takashima

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Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted.

Certificate No. : OS-18-041316Date : **October 9, 2018**

## TEST CERTIFICATE

MARUSYO SANGYO CO.,LTD.

**2. Test Method**

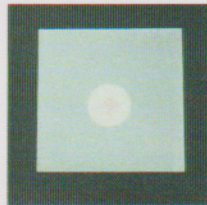
A specimen is placed into a sampling bag with a capacity of 5 liters. Inject 3 liters of testing gas into the sampling bag, then measure the gas concentration by using a gas detector tube, after 24 hours under the fluorescent lamps (1000 lx).

Sampling bag, used in the test: Smart Bag PA, by GL Sciences Inc.

Dimension of specimen: 100cm<sup>2</sup>

Gas used for dilution: Conditioned air(20°C 65%RH)

Type of Gas Detection Tube Used: (Type from Gastec Corporation)	Effective Measuring Range (ppm)	Amount of Gas Drawn (ml)
Formaldehyde, No. 91 L	0.1~5.0	500
	5.0~40.0	100

**3. Sample****End of report.**

**KAKEN**  
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Kaken Test Center is formerly named as "Japan Synthetic Textile Inspection Institute Foundation(JSTIIF)".

No.1/1

Test report No.: OS-18-046287

Date: November 2, 2018

**TEST REPORT**

Requested : MARUSYOSANGYO CO., LTD.  
Test sample : Plastic plate 1 sample  
Test items : Antibacterial activity  
Received : October 22, 2018

**This is to report that the results of laboratory test applied on the sample are as follows:**

**1. Test results**

Test sample *1	The number of viable cells (CFU/Specimen)			Photocatalyst Antibacterial activity value (R <sub>F-1</sub> )	ΔR
	Immediately after inoculation (U <sub>s</sub> )	After irradiating the visible light for 8 hours*2 (U <sub>F-I</sub> , T <sub>F-I</sub> )	After keeping the dark place for 8 hours (U <sub>D</sub> , T <sub>D</sub> )		
Photocatalyst M-Clean MV-6	—	1.9E+02	3.8E+02	2.5	0.3
Control (Untreated sample)	1.8E+05	1.4E+05	1.3E+05	—	—

\*1 Specimens were irradiated with UV ray at an irradiance of 1 mW/cm<sup>2</sup> for 24hours just before the test.

\*2 Irradiated with a white fluorescent lamp with an illuminance of 1 000 lx (UV cut-off filter TYPE B used)

**2. Test method:** JIS R 1752:2013(Film adhesion method)  
Test bacteria: *Escherichia coli* NBRC 3972

**3. Sample:**

Sample omitted

Kaken Test Center General Incorporated Foundation  
Osaka Laboratories  
Biological Test Laboratory

Inspector : 中曾根 寿明  
T.Nakasone

**Period.**

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## 5. Application method

It applies MV-6 by spray gun or roller method.

Wall surface: Spray gun, Ceiling: roller

