# 新型可視光線応答型光触媒液 MV-6

2013 年 4 月 2 日

丸昌産業株式会社
MARUSYO SANGYO CO.,LTD.
http://www.marusyosangyo.jp/

## 1. 概要

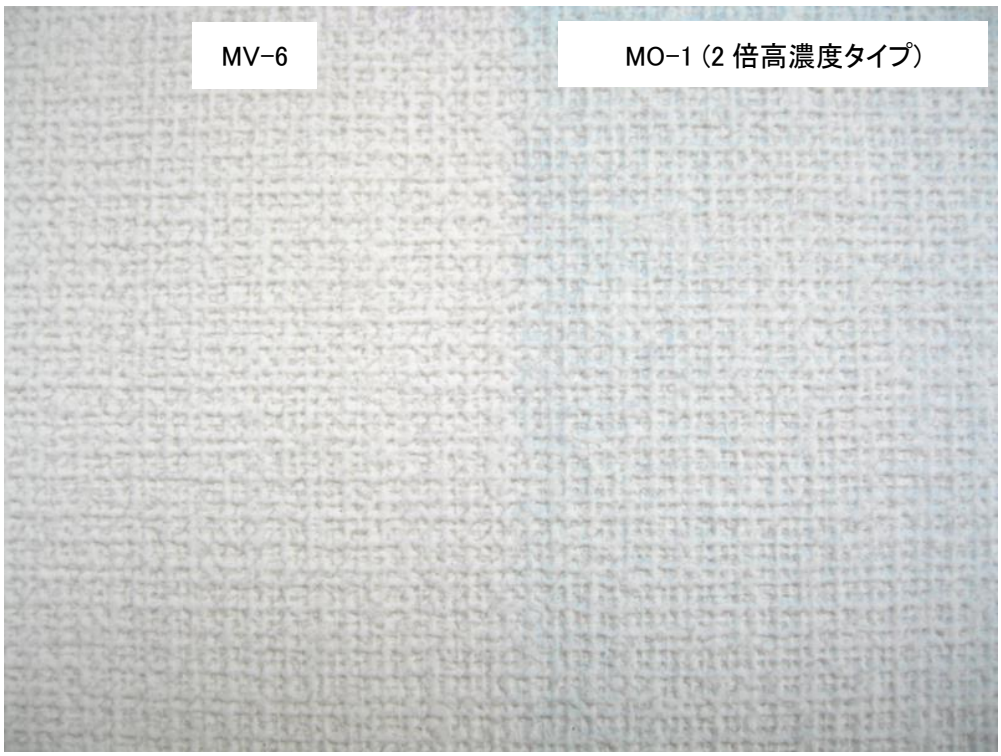
MV-6 は、最新の可視光線応答型光触媒を使用した、新しい室内用光触媒コーティング液です。今までの可視光線応答型光触媒と比較して、室内環境で使用した場合には 3 倍～5 倍程の効果を示します。蛍光灯の光でも反応性能が高く、一般室内での使用が可能となっております。

| | |
|---|---|
| 特徴 | ➢ 室内での高い光触媒効果<br>➢ 室内の臭気ガスの吸着性能を有する<br>➢ 細菌類が付着しやすく、抗菌効果が高い<br>➢ さまざまな素材に付着が可能<br>（フッ素樹脂、シリコーン樹脂以外）<br>➢ 乾燥後は、劣化しにくい無機質皮膜を形成<br>➢ 下地処理剤を必要とせず、1液で加工が可能 |
| 外観 | 乳白色 |
| 液タイプ | 水系 |
| 主成分 | 酸化チタン（1.3～1.8w%）、シリカ（0.8～1.5w%） |
| 粘度 | 30 ～ 300mPa・s |
| 塗膜硬度 | 2H（ガラス上） |
| 施工方法 | スプレーガンによる吹きつけ塗布又は短毛ローラー塗布 |
| 塗布量 | 15～ 50 g / 1 sq m |
| 乾燥温度 | 自然乾燥又は低温乾燥（60～80℃） |
| 乾燥時間 | ２４時間以上 |
| 乾燥後の外観 | 若干白濁（濃色系基材へ加工の場合） |

## 2. 分解効果（室内テスト）

| 照射時間<br>製品名 | 光照射前 | 光照射 40 分後 |
|---|---|---|
| 旧式可視光応答型光触媒<br>MO−1 | | |
| 新型可視光線応答型光触媒<br>MV−6 | | |

illuminating radiation : fluorescent　3500Lux

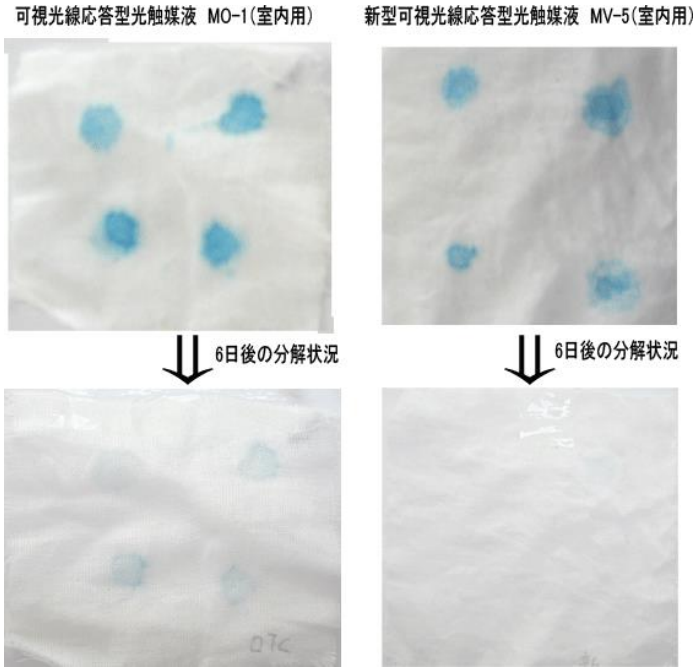



メチレンブルー分解試験

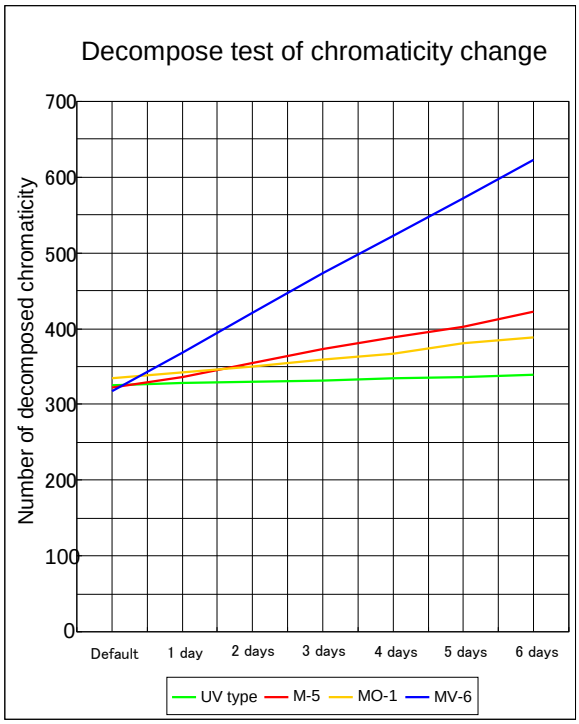
注記：MO−1 は、以前のタイプの室内用光触媒コーティング剤

## 3. 綿生地状での分解性能試験（室内 1300Lux 照射下）

(1)分解状況及びグラフ




| MO-1<br>（旧型可視光線応答型） | MV-6<br>（新型可視光線応答型） |
|---|---|




※色度分解数値が上がる程、分解性能が高い事を示しています。

(2)色度測定による分解性能比較値

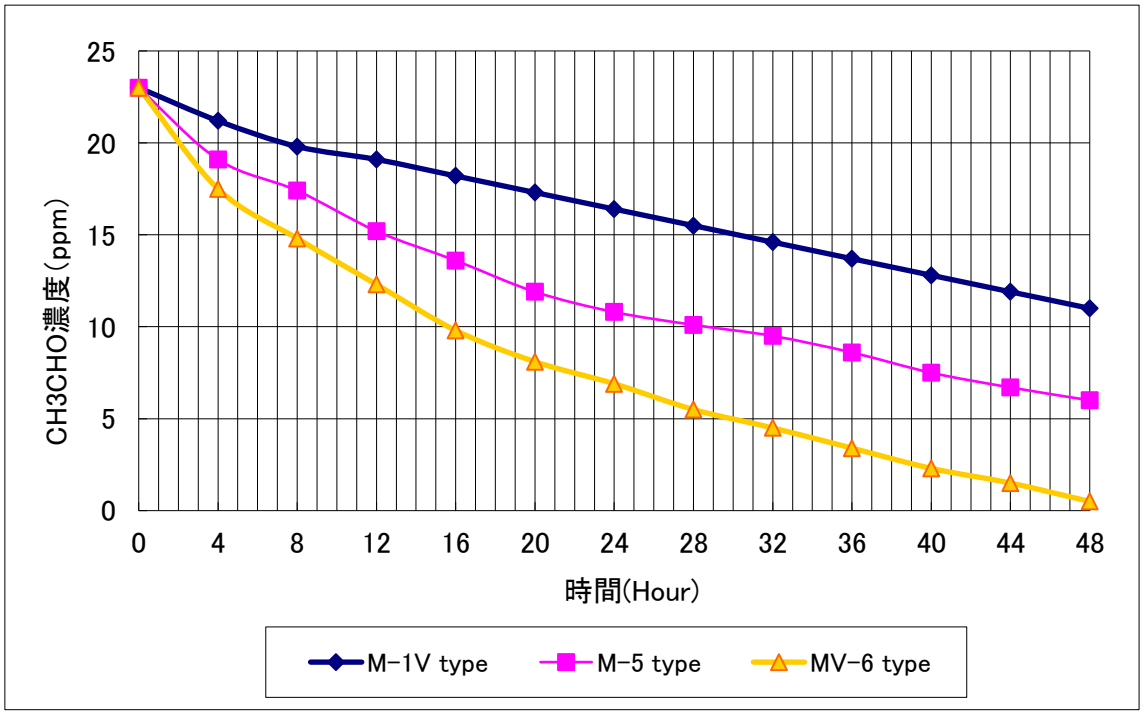
| 製品名 | 初期色度 | 6 日目色度 | 色度差 | 分解率 | 活性比率 |
|---|---|---|---|---|---|
| 他社製<br>紫外線タイプ | 326 | 339 | 13 | 4.26% | 4.26% |
| M-クリーン<br>MO-1 | 335 | 389 | 54 | 17.70% | 17.70% |
| M-クリーン<br>MV-6 | 318 | 623 | 305 | 100.00% | 100.00% |

新型の可視光線応答型光触媒 MV-6 は、旧型の可視光線応答型光触媒 MO-1 と比較して、約 5.6 倍の汚れ分解能力が向上しています。

## 4. ガスの分解性能試験

### 4-1. アセトアルデヒドガスの分解性能試験

水銀ランプによる分解性能試験（紫外線をカットした光照射）



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



Certificate No. : OS-18-041316

Date : October 9, 2018

# 検査証明書
# 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

ホルムアルデヒドガスの減少試験

Performance Testing for Reduction of Formaldehyde Gas

減少率

| Test Item / Sample | 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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Certificate No. : OS-18-041316

**Date : October 9, 2018**

TEST CERTIFICATE

MARUSYO SANGYO CO.,LTD.

2.試験方法

**2. Test Method**

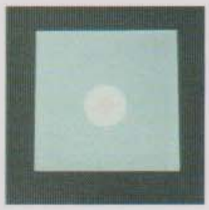
5Lのサンプリングバックに３Lの試験ガスを注入後、蛍光灯下（1000lx)で24時間光照射を行った後にガス検知管により測定。

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$^2$
Gas used for dilution: Conditioned air(20℃ 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.**

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



Test report No.: OS-18-046287

抗菌試験結果

**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

初期値 光照射 暗所 抗菌活性値

| Test sample *1 | The number of viable cells (CFU/Specimen) | | | Photocatalyst Antibacterial activity value ($R_{F-I}$) | ΔR |
|---|---|---|---|---|---|
| | Immediately after inoculation (Us) | After irradiating the visible light for 8 hours *2 ($U_{F-I}$, $T_{F-I}$) | After keeping the dark place for 8 hours ($U_D$, $T_D$) | | |
| 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$^2$ 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) UVカットフィルター タイプBを使用して、白色蛍光灯により1000lxで光を照射

**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 : 中薗根寿明
T.Nakasone

**Period.**

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## 5. 施工風景

壁面等についてはスプレーガンによる吹きつけ塗布

天井面については、スプレーガン又はローラー、刷毛塗り