

OUTLINE OF WELLCOAT100

— Photocatalyst Coating Agent for Interior Building Materials —

What is unique?

Ecological Photocatalyst coating agent utilizing titanium oxide compound

Photocatalyst, a vital technology for the 21st century, decomposes organic matter using energy of ultraviolet radiation. However, photocatalyst also decomposes and degrades whole materials being coated due to its significantly antibacterial and odor eliminating effect, and that was a challenge in the past.

However, recent progress in nano-technology made possible special coating on the surface of particles of titanium oxide with apatite as well as absorption and decomposition of toxic organic matter alone without direct contact between particles and base materials.

We call this type of unique titanium oxide “wart cluster titanium dioxide”

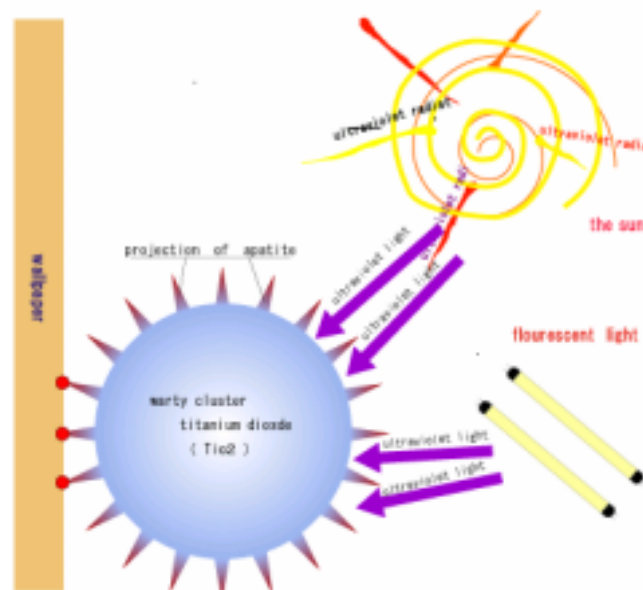
Thus, the field of application of the technology has been diversified.

Using specially processed titanium oxide compound, Wellcoat100, our unique photo-catalyst coating agent for interior building materials, improves environment with our unique organic binder.

Basic Mechanism of photocatalyst

Titanium dioxide particle applied indoors attaches the surface of wallpaper with projection of apatite and creates a certain space between the surface of the particle and the surface of the wallpaper to protect it against oxidative decomposition. The particle is 1/100,000 mm or 10 nanometers in diameter and almost transparent thank to its ultra-small size.

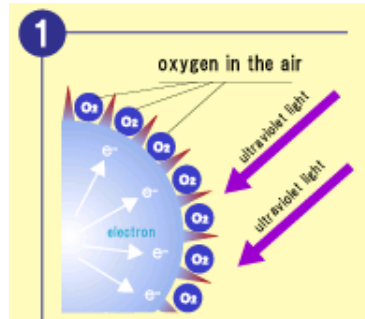
Thus, the texture of materials is well retained.



Detailed process of how to decompose organics

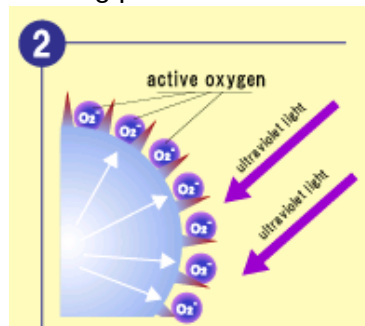
Step1

When photo catalyst(TiO_2) is exposed to ultraviolet light (such as sunlight or fluorescent Light), negatively charged electrons are surfaced from inside of the particle.



Step2

The negatively charged electrons(e^-) surfaced react with oxygen (O_2) in the air and change into active oxygen (O_2^-). Resolving power of the active oxygen has several times that of chlorine or ozone.)



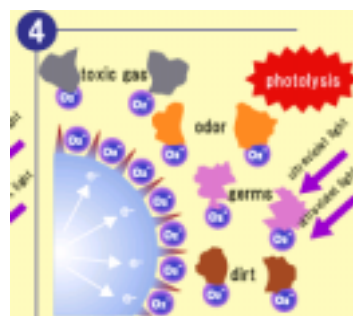
STEP3

Indoor convection of air makes the active oxygen to contact with hazardous component (formaldehyde and toluene), unpleasant odor caused by component such as ammonia, germs, viruses, and stains (tar of cigarette, sebum on hand and others)



STEP4

The active oxygen works on molecular structure, and oxidizes and decomposes various components into CO_2 and H_2O for detoxification. This function lasts as long as it is exposed to ultraviolet light. And the active oxygen never leaves from the surface by itself.



Features

Wellcoat100 uses patented titanium compound for organic matter.

- Ecological and easy to use, water-based single component liquid
- Applicable on base materials such as fiber, paper and vinyl
- Resistant to choking, which decomposes and deteriorates base materials
- Our original formula for the binder preserves texture of base materials
- Extension of applicable areas such as ceilings and wall surface, significantly enhances indoor environment
- Nano-level titanium oxide particles last active and semi-permanent effect

Standard measurement and report service after completion

- Reduced rate of volatile organic compound(VOC) causing sick house syndrome is measured and reported
 - Odor eliminating effect is measured and reported
 - Charge-free, in case that Wellcoat100 had no effect
- These services are available only in Japan.



Portable-model odor sensor
(Multipurpose XP-329)



Portable-model TVOC detector
(XP-339V)

Outstanding cost effectiveness

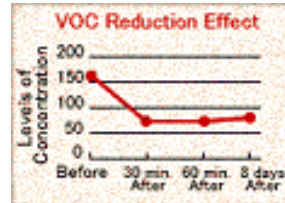
- Cost can be reduced by 30-50%, compared with conventional inorganic two component products
- Enhanced antibacterial product is also available
- Our formula can be customized in accordance with your specific needs



Effects

Sick house syndrome and decomposition of VOC

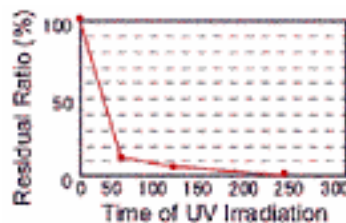
Carcinogenic formaldehyde and dozens of VOCs contained in building materials cause atopic allergy and sick house syndrome. However, undergoing regulation on building materials alone is not enough to cut the VOCs to zero. Wellcoat100 steadily oxidizes and decomposes those toxic substances, and cleans up environment. Uses at new-built and renovated houses are ideal.



In August 2002, an apartment (aged 20 years) located Osaka Prefecture had been reformed and Wellcoat100 was used in the reforming construction. The level of VOC concentration before the reform and one week after the beginning of the reform were measured and the result suggested that the VOC concentration declined 60% respectively. This effect was confirmed to be continuous more than one week after the beginning of the reform.

Odor eliminating effect

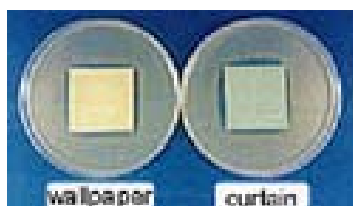
Causative agents of odor can be categorized as nitrogen compound such as fishy and foul smell, sulfur compound such as excrement, and fatty acid such as smell of sweat. Wellcoat100 absorbs and decomposes all of those odors as well as nonenal, fixed smell hard to be eliminated with conventional products.



Test on hydrogen sulfide odor eliminating effect

Antibacterial effect

Recently, Methicillin-Resistant Staphylococcus Aureus(MRSA) has increased in the number of in-hospital infection, and farther extended to out of hospital, possibly to general household. With our enhanced antibacterial formula, Wellcoat100 Antibacterial, steadily fulfills its function even at darker places and is recommendable for medical institutions, food processing factories, and families with seniors and infants with compromised immune systems.



Formation of the halo that against the Methicillin-Resistant Staphylococcus Aureus(MRSA) and the Escherichia coli bacteria was confirmed.

Products Type

1. Wellcoat100 for common use (Type B10)

This multi purpose type derives from the hydrotitanium coating agent which is widely used for fabric process.

(Ingredients)	specially-treated titanium oxide ingredient	21%
	Emulsion Binder	3%
	Surface active agent	2%

2. Wellcoat100 with natural fragrance (Type C10)

Adding aromatic odor eliminating agent to Wellcoat100 Type B6, we got Wellcoat100 C6. The effect of odor eliminating in early phase is significant so the effect of construction is recognizable as well.

(Ingredients)	specially-treated titanium oxide ingredient	21%
	Emulsion Binder	3%
	Odor neutralizing aromatic odor eliminating agent	1%
	Surface active agent	2%

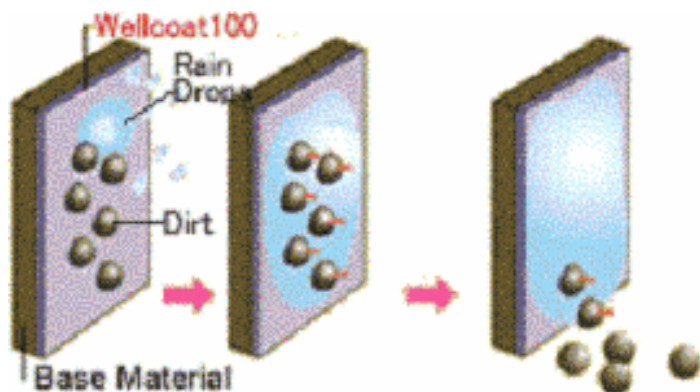
3. Wellcoat100 for antibacterial use (Type D10)

We got the Wellcoat100 Type D6 by adding antibacterial agent for in hospital infection to Type B6. This type is recommendable for medical facilities or food processing factories.

(Ingredients)	specially-treated titanium oxide ingredient	21%
	Emulsion Binder	3%
	antibacterial agent	1%
	Surface active agent	2%

4. Wellcoat100 for self-cleaning of exterior (Type EX and EX-MG)

Mechanism is based on control of contact angle of water(10 to 30 °).The narrower the contact angle of water to the base materials such as painted wall, glass or others, the greater water spread on the surface and enhance hydrophlicity and self-cleaning capability. It can wash away stains from the exterior of building by rain water. It is not using photocatalyst TiO₂ but special ceramics or silicate.



Wellcoat100 for family use

‘ Synergy of titanium oxide as photocatalyst and inorganic antibacterial agent ’

1) Wellcoat100 for Interior use (200ml in bottle, with a trigger spray head);

- decomposes toxic substances such as formaldehyde, causing sick house syndrome
- decomposes smells of pet and cigarette and nonenal indoors as well as the inside of a car
- decomposes disease germs such as MRSA and E.coli O157.
- can be sprayed on about 15-20 square meters per bottle. Nano-level particles are to be fixed on the surface of base materials.

2) Wellcoat100 for fabrics (200ml in bottle, with a trigger spray head);

- decomposes smells of sweat, body and tobacco smoke fixed on clothes.
- makes you feel relaxed with minus ion.
- decomposes disease germs such as MRSA and E.coli O157.
- can be sprayed at about 30-40 shirts. Nano-level particles are to be fixed on the surface of fabrics.

3) Wellcoat100 Aero Spray (220ml in bottle, use DME gas);

Formula and effects is almost same as Wellcoat 100 for interior use.



Inquiry

GODAI INC.

5-3-5, Uehonmachi-nishi, Chuo-ku, Osaka 542-0062, JAPAN

TEL: +816 6764 0367 FAX +816 6764 0358

e-mail: order@godai-inc.co.jp

URL: <http://www.godai-inc.co.jp>

Examples of Wellcoat100 construction

Hotel Metropolitan Tokyo

We are now providing wellcoat100 constructing service over 880 guest rooms of executive city hotel, because of Its magnificent function for eliminating odd.



Care Hospital 'Yao-Tokyushuenn'

This facility is mainly for people of an advanced age. Wellcoat100 was used not only for eliminating odd, but for antibacterial effect.



New-built residences in Osaka

For reducing carcinogenic formaldehyde and dozens of VOCs which cause atopic allergy and sick house syndrome at new-built residence, Wellcoat100 is adopted by housing company to solve this problem.

