Clean living environment with blessings of light

Innovation of photocatalystic technology in textile finishing

A suit, for example, that you wear in daily commute.

You wear it day by day, but it may not be laundered frequently.

In general, various bacteria and sources of odor exist in a suit although they are invisible.

If those bacteria and odor could be removed only by exposing to light,.....

Gaea Clean Photocatalystic Treatment agent (GCT) can make it possible.

GCT is applied to textile products to kill bacteria and reeks of sweat and smoking,

where photocatalystic reaction of titanium dioxide with light of the sun or a fluorescent lamp

introduces antibacterial and odor killing functions.

GCT is applicable to various kinds of fiber without losing the original softness.

Specially modified titanium dioxide and binder, main components of GCT

do not damage substrate of fabric.

Innovation of photocatalystic technology in textile finishing.

Would you try and touch on it?

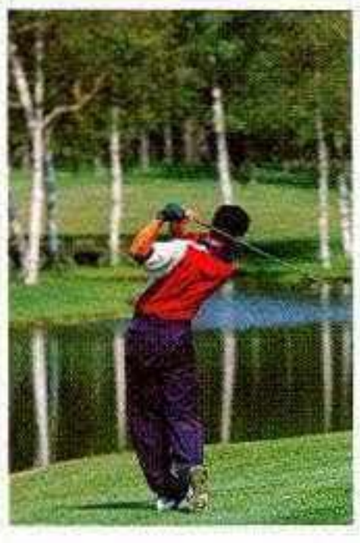
Application

Men's wear

Ladies' wear

Uniform

Sports wear

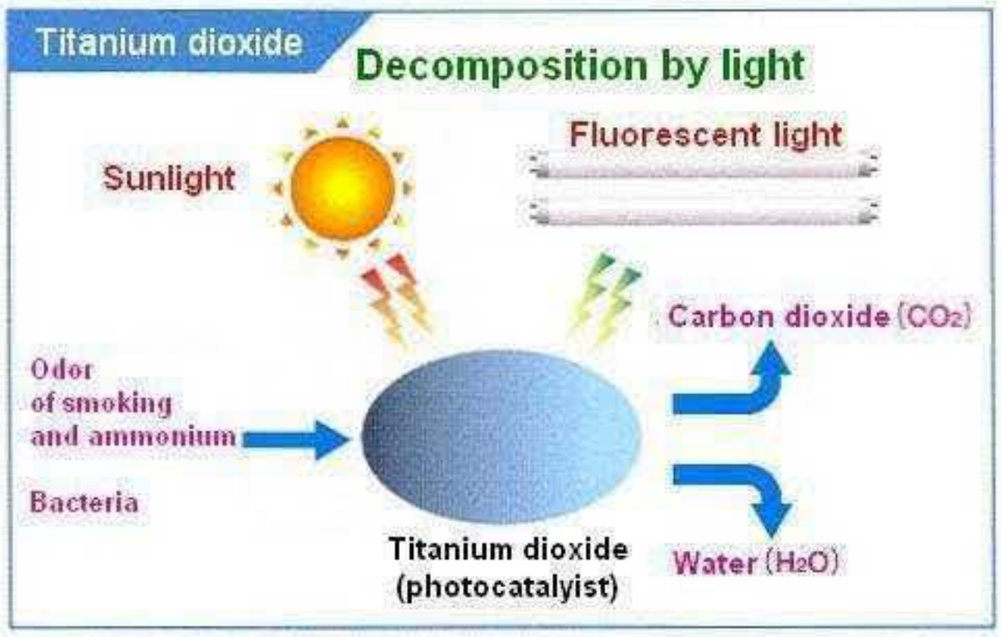


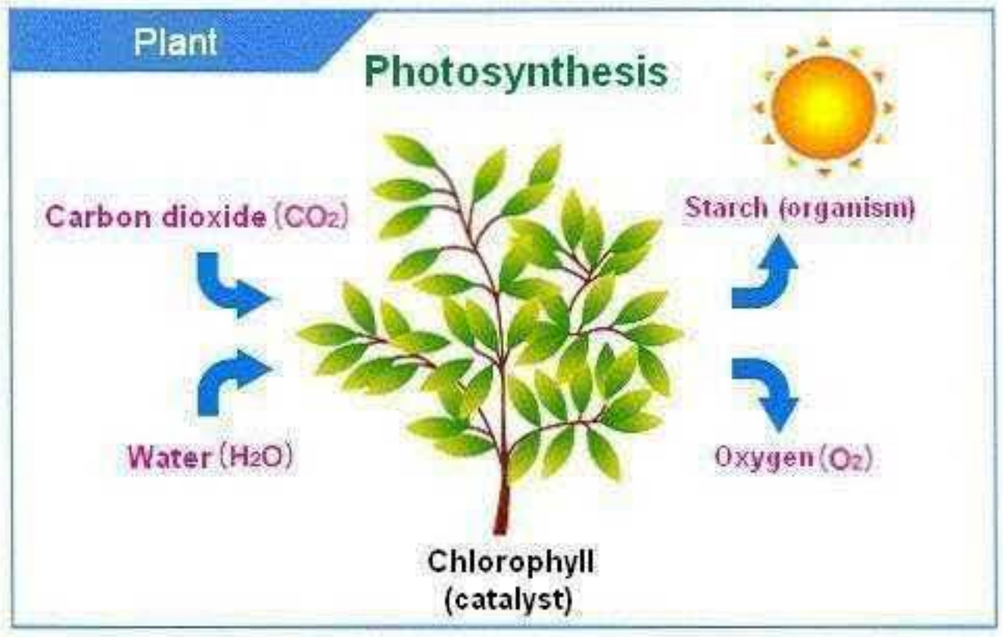
Babies'/Children's

Bedding/Interior cloths

Structure

Titanium dioxide is a photocatalyst to react as plant photosynthesis with ultraviolet rays emitted from the sunlight or fluorescent light. It decomposes harmful gas and reeks of smoking or ammonium.





Antibacterial and odor killing action

by strong oxidation and decomposition

Like plant photosynthesis, titanium dioxide uses light as energy source to has the function of decomposing such causes of sick house syndrome as bacteria, harmful gas, and elements of odor. By applying such titanium dioxide to fiber, organisms adhered to fiber are decomposed when exposing to the sunlight or fluorescent light, and bacteria and odor are killed as a result.

Feature

In addition to conventional uses for inorganic materials like tiles, photocatalystic titanium dioxide has been brought to a new use for textile finishing with wearable and safe performance. Fabric can be treated at a normal temperature, and treated fabric retains its inherent softness.

1	Easy treatment	An old type of photocatalyst required a few stages in processing. However, GCT can be applied to fabric independently in a stage at a normal temperature without losing fabric's inherent softness.
2	Wearability	According to antibacterial test (*2), no degradation occurred after laundering 50 times. Besides, antibacterial effect is produced by GCT only without using other antibacterial agent. GCT is an eco-friendly product.
3	Safety	Titanium dioxide, main component of GCT is officially approved as a food additive, and widely used as an ingredient of foods and cosmetics. Besides, safety to skin was confirmed by skin patch test (*3).
4	High quality	GCT has acquired 'SITPA mark' certified by independent regulations pertaining to quality and safety established by The Japanese Society of Industrial Technology for Photocatalystic Articles. Besides, GAEA mark is another quality certificate mark for articles treated by GCT.

Quality certificate mark for conveying the quality and safety of GCT to consumers

GCT has acquired 'SITPA mark'

SITPA mark is a certificate mark to be marked on articles controlled by independent regulations pertaining to quality and safety and guideline for photocatalystic articles established by SITPA. Information of those articles is disclosed.

光の力でずっとキレイ Ultraviolet cleans for ever ガイアクリーン

It is recommended to attach GAEA mark, quality certificate mark on articles treated by GCT.

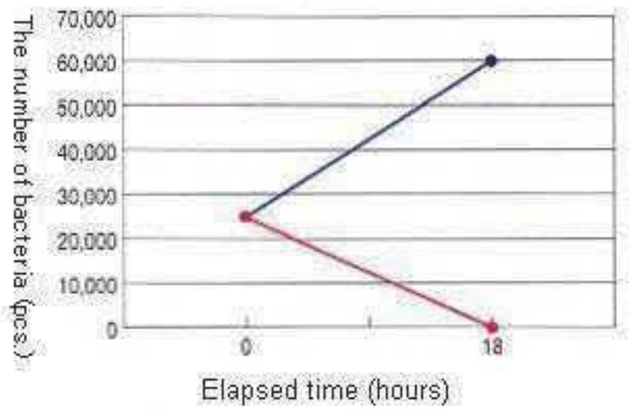
(*2) tested by Japan Spinners Inspecting Foundation (*3) tested by Japanese Society for Cutaneous Health

Data

Antibacteria / odor killing test

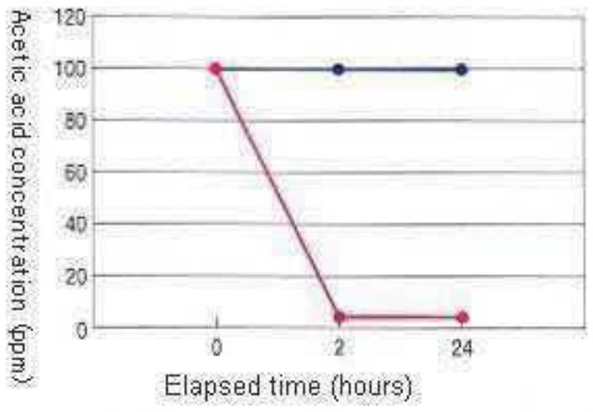
Staphylococcus aureus, acetic acid, formaldehyde …… they can be eliminated by CGT

Antibacterial test (S. aureus)



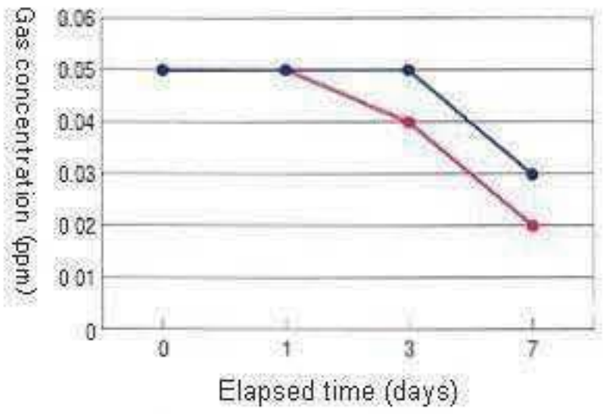
After incubated bacteria for 18 hours, the number of bacteria was increased double on blank (untreated fabric), but they were almost decomposed on GCT treated fabric.

Odor killing test (acetic acid)



Acetic acid concentration was not changed on blank when 2 hours passed, but almost all acetic acid was decomposed on GCT treated fabric.

Odor killing test (formaldehyde)



In comparison of formaldehyde gas concentration around GCT treated fabric placed on a dark place and a place exposed to fluorescent light, the gas at the latter place was decomposed a few days earlier.

[Tested by Japan Spinners Inspectng Foundation]

Ammonium decomposition test

GCT treated fabric decomposes reeky elements of ammonium when exposed to ultraviolet rays.

Ammonium solution returns red in color when phenol naphthalene, reagent is added. And it returns transparent when ammonium is decomposed. GCT treated fabric is added in such solution and exposed to ultraviolet rays, and decomposition of ammonium is measured by observing change in color.

A: Blank B: Treated by GCT

Related products

Our various ideas and original technology offer GAEA Clean performance

GAEA Clean Interior

Clarify the air by spraying on wall and floor: suitable for preventing sick house syndromes

Super Chouette

Spray type easy-to-use deodorant to remove distinctive odors and bacteria easily

- Effective for 3 - 5 years once sprayed
- Applicable to curtain, carpet, car seat, sofa, furniture, etc.
- One bottle of spay covers 9 - 10 m^2

GAEA Green

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