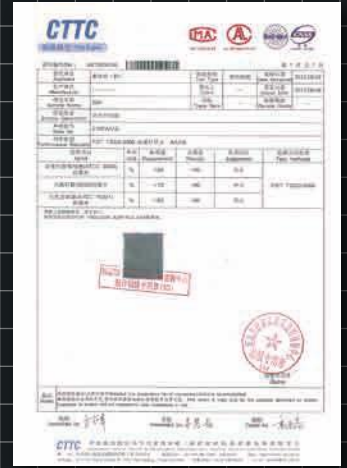


Photocatalytic bacteria-eliminating fiber

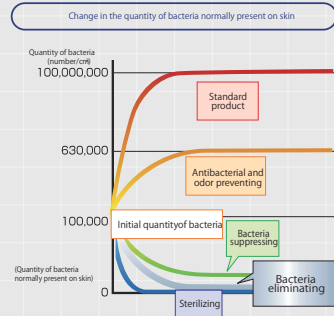


Ginsekai is a bacteria-eliminating fiber that incorporates silver ions in acrylic fiber to achieve excellent bacteria elimination effectiveness, safety and durability.

Bacteria elimination effectiveness

Among antibacterial fibers, Ginsekai is at the level of a bacteria-eliminating material

● Antibacterial effects and their classifications

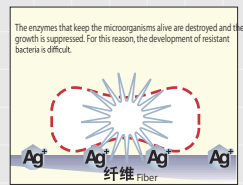
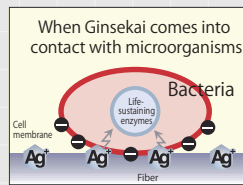


Basic test method: JIS L1902 Culture medium: 1/20 Sabouraud liquid culture medium
Bacteria used: Trichophyton mentagrophytes

Bacteria elimination mechanism
Bacteria are eliminated by two functions

Direct bacteria elimination

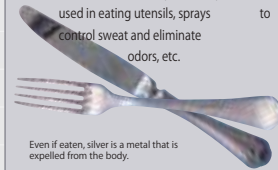
Contact with silver ions stops the functioning of the enzymes that keep microorganisms alive, making them inactive and suppressing their growth.



Ag+
The significance

Antibacterial

Silver ions have a bacteria eliminating effect and, because it is very safe, they are used in eating utensils, sprays to control sweat and eliminate odors, etc.

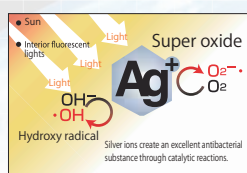


Even if eaten, silver is a metal that is expelled from the body.

Photocatalytic bacteria elimination

When light hits silver ions, a catalytic reaction produces oxidants that have excellent bacteria elimination ability.

The sterilization capability of the main antibacterial substances in photocatalytic bacteria elimination (oxidation power)



Oxidation potential (Volts)	Sterilization capability
Hydroxy radical OH·	2,80 (High)
Singlet oxygen O	2,42
Ozone O ₃	2,07
Hydrogen peroxide H ₂ O ₂	1,77
Super oxide O ₂ ⁻	1,70
Hypochlorous acid HClO	1,49
Chlorine Cl ₂	1,36

Metals with high bacteria elimination abilities
Minimum concentrations required to achieve bacteria elimination

(E.coli K 12 W31 10)

Ag ⁺	0,00024	ppm
Zn ²⁺	3,9	ppm
Cu ²⁺	>2000	ppm

Contact medium: purified water Period of contact: 30 minutes
Contact temperature: 30°C

Recovery medium: nutrient broth Recovery time: 24 hours

Initial quantity of bacteria: 10⁸ cell/ml

Reference: Ag⁺ in fabric that uses 10% Ginsekai thread is 300 ppm.

Note: The above data are evaluation results based on specific fabric standards and are not guaranteed values.

