

# SANITECT SYSTEM

A Total Anti-bacterial Coating System



PROVIDING

A

HEALTHIER

&

RELIABLE

INDOOR

ENVIRONMENT

SK KAKEN CO. LTD.

# Anti-bacterial coating system for hygienic environment

It is a social problem that contagious diseases caused from colone virus, O-157, MRSA virus, etc. are transmitted inside clinics and hospitals.

In response to the need for "Hygiene" and "Good Health", preventive measures against such indoor infection has been public concern.

SK Kaken Co., Ltd. has launched anti-bacterial coating system "SANITECT SYSTEM" applicable to all kinds of internal surface and enhancing protection against bacteria for hygienic environment.



Indoor infection is a social problem now.

- Today, our housing condition is providing indoor environments to breed micro-organisms such as mould, fungus, algae, etc. which cause influence to human bodies.
- For example a disease known as "Deep Seated Mycosis" is caused by aspirating mould and shows symptoms similar to tuberculosis. And the attack rate by such a disease is increasing.
- Thus, coating system is expected to play an important role as a preventive measure.

# EXCELLENT ANTI-BACTERIAL EFFECTS

SANITECT SYSTEM comprises an anti-bacterial agent containing silver as a main element that has been proven effective and safe through the use in tableware and dental materials for many centuries, and an organic agent that has been approved by FDA (Food and Drug Administration) as a safe material. With the use of those agents SANITECT SYSTEM brings strong anti-bacterial action on MRSA (Methicillin-Resistant Staphylococcus Aureus), pseudomona aeruginosa, escherichia coil, candida albican, etc. spread inside clinics and hospitals. It is also highly resistant to moulds and micro-organisms.

## ANTI-BACTERIAL PERFORMANCE

Bacteria/Yeast  
(A: Bacteria, B: Yeast)



Halo Test (Test Method)

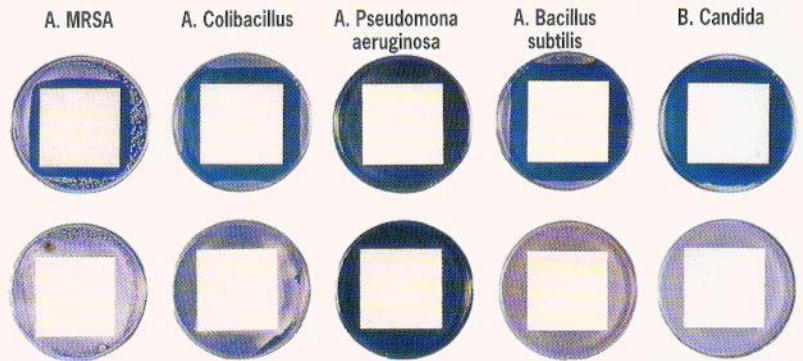
Square samples (in white colour) are attached to agars implanted with various bacteria.

After incubation inhibition to growth of bacteria is evaluated according to existence of obstructing ring (halo) around those samples.

● Test method for evaluation

Medium : A. Bacteria SCD implanted in agar  
Medium : B. Yeast GP implanted in agar  
Sample size : 5cm x 5 cm

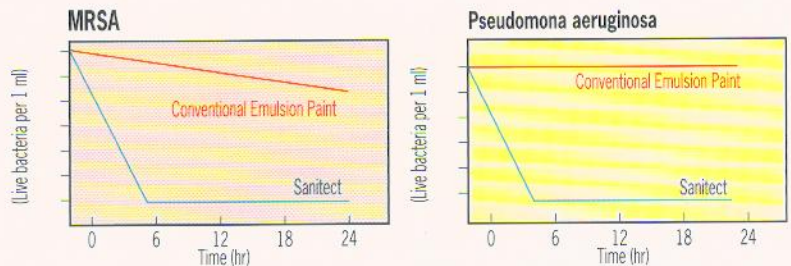
Incubation : A. For 3 days at 35°C  
B. For 3 days at 30°C



## ANTI-BACTERIAL EFFECT

Anti-Bacterial Test by Film Adhesion Method  
(Test Method)

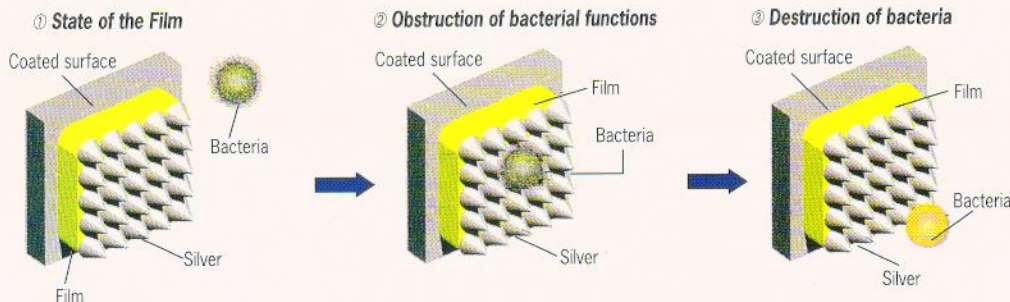
Inoculate a 0.5ml bacterial solution on samples (5cm X 5cm), lay sterilized film over them, ensuring adequate contact with the bacterial solution, and allow them to stand for 6 hours at 35°C and 90%RH and for 6 hours at 20°C, 65%RH. Then wash the bacteria adhering to the film by 10 ml SCDLP solution. Finally measure the surviving bacterial per ml in SCDLP mediums from time to time.



## ANTI-BACTERIAL MECHANISM

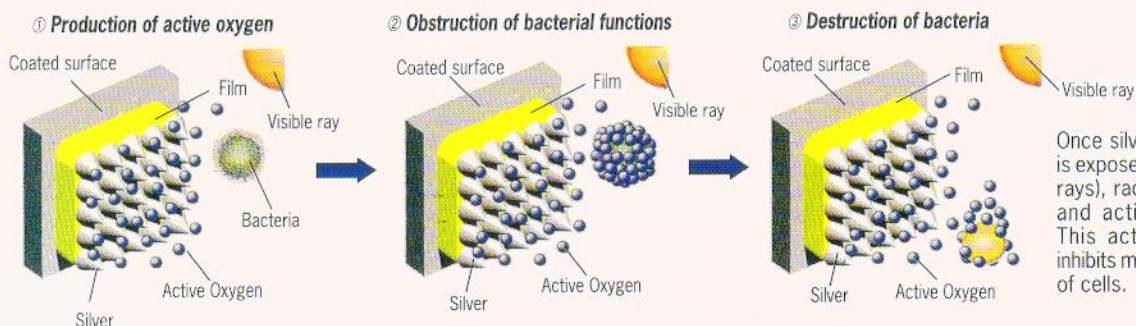
### 1 Anti-Bacterial Action from Contact with Silver

SANITECT SYSTEM forms a complex body of a silver based anti-bacterial agent and an organic agent, providing resistance to various types of micro-organisms, moulds and fungus, etc.



Silver ions of SANITECT bond with cell membrane of bacteria and its membrane of protein and damage the structure and inhibit the function in a short period of time. Furthermore those ions go inside cells, inhibit oxygen of electronic transmission, react with DNA, and inhibit its function.

### 2 Anti-Bacterial Action by Activated Oxygen



Once silver of SANITECT is exposed to light (visible rays), radical is released and activates oxygen. This activated oxygen inhibits metabolic function of cells.

### 3 Anti-Bacterial Action of Organic Agent

By reaction of water (vapour) on the film of SANITECT anti-bacterial function is activated and propagation of bacteria is inhibited. It also resists mould, fungus and yeast.

## SUPERIOR DURABILITY & CHEMICAL RESISTANCE

"SANITECT System" provides a hard-wearing paint film formed by reactive curing and provides high durability and various chemicals resistance including disinfectant, alcohol, and detergent.

### CHEMICAL RESISTANCE DATA

Chemicals Tested	Result	Test method
Benzalkonium chloride	No degradation	Apply each chemical on a paint film surface (covered with a Gloss cover). Observe the film condition after allowing it to stand for 24 hours.
Formalin Solution	No degradation	
Cresol	No degradation	
Glutar-aldehyde	No degradation	
Sodium hypochlorite	No degradation	
Ethanol	No degradation	

### PERFORMANCE TEST RESULT

TABLE A (Sanitect W / Sanitect Mild)

Test Item	Sanitect-W		Sanitect Mild		Quality
	Gloss	Matt	Gloss	Satin	
Condition in container	Passed	Passed	Passed	Passed	When being stirred, it makes uniform condition without any hard lumps.
Drying time	20°C	Passed	Passed	Passed	2 hours max.
	5°C	Passed	Passed	Passed	4 hours max.
Appearance of paint film	Passed	Passed	Passed	Passed	Film has normal appearance.
Alkali resistance	Passed	Passed	Passed	Passed	More than 65% gloss retention after 48 hours immersion : no abnormalities on film surface.
Resistance against repeated wetting, warming and cooling actions	Passed	Passed	Passed	Passed	More than 80% gloss retention : no abnormalities on film surface.
Opacity (white and light colour)	0.97	0.98	0.95	0.95	0.95 min.
Specular gloss	80	2.3	86	15	70 min.
Low temperature stability (-5°C)	Passed	Passed	Passed	Passed	No deterioration.
Application properties	Passed	Passed	-	-	No application difficulties, when applied twice.
Water resistance	Passed	Passed	-	-	More than 80% gloss retention after 96 hours immersion : no abnormalities on film surface.
Wet scrub resistance	Passed	Passed	-	-	Must pass 500 cycles.
Impact resistance	-	-	Passed	Passed	No change : drop 500g steel ball from 50cm height.
Adhesion strength	-	-	Passed	Passed	Based on JIS A 5400 8.7
Acid resistance	-	-	Passed	Passed	After 7 days immersion (5% sulfuric acid water) : no abnormalities on film surface.

TABLE B (Sanitect Floor)

Test Item	Result	Quality
Adhesion strength	294 N/cm <sup>2</sup>	JIS A 5400 8.7
Film hardness	H	JIS K 5400 8.4 Pencil scratch test
Impact resistance	Passed	JIS K 5400 8.3.2
Abrasion resistance	30mg	JIS K 5400 8.9 Must pass 1000 cycles
Permeability	Passed	JIS K 6911
Slide resistance	: Rubber	JIS A 1407
	: Stainless	
Resistance against repeated, warming and cooling actions	Passed	JIS A 6909 6.11

### APPLICABLE TO A WIDE RANGE OF SUBSTRATES

SANITECT System is comprised of various types of products including acrylic resin paint, NAD type polyurethane resin paint, and solvent free epoxy resin floor coating which are available on a wide range of substrates at internal walls, floor, metal doors, staircases, handrails, etc.

SANITECT-W	Reactive curing acrylic resin water based paint (gloss and matt finish)
SANITECT Mild	NAD special polyurethane resin paint (gloss and satin finish)
SANITECT Floor	Non-solvent epoxy resin floor paint (gloss finish)

## STANDARD APPLICATION SPECIFICATIONS

### SANITECT W Reactive Curing Acrylic-resin Water-Based Paint

Uses : Internal Wall, Ceiling  
 Suitable Substrates : Concrete, Calcium Silicate Board, Slate Board, Plaster Board, etc. (20°C, 65% RH)

Procedure	Material	Mix (weight ratio)	Consumption (Kg/m <sup>2</sup> )	Number of applications	Interval (hrs)			Remarks
					Within Process	Between Process	Final Curing	
1 Substrate Preparation	● Allow the substrate to dry to a moisture content of 10% or less, ensuring a pH of 10 or below. ● Remove all foreign matters, make good cracks and surface imperfections.							-
2 *1 Undercoat	SANITECT-W Primer	Pre-mixed	0.10-0.15	1	-	Min. 2	-	Roller, brush, airless spray gun. Discharge 600-1000ml/min. Pattern width: 25-30 cm.
3 *2 Top Coat	SANITECT-W	100	0.24-0.28	2	Min. 3	-	Min. 24	Roller, brush, airless spray gun. Discharge 600-1000ml/min. Pattern width: 25-30 cm.
	Water	5-20	-					

### SANITECT MILD NAD Special polyurethane-resin paint

Uses : Food Factory, Dining Hall, Toilet, Operation room  
 Suitable Substrates : Concrete, Calcium Silicate Board, Slate Board, Plaster Board etc. (20°C, 65% RH)

Procedure	Material	Mix (weight ratio)	Consumption (Kg/m <sup>2</sup> )	Number of applications	Interval (hrs)			Remarks
					Within Process	Between Process	Final Curing	
1 Substrate Preparation	● Allow the substrate to dry to a moisture content of 10% or less, ensuring a pH of 10 or below. ● Remove all foreign matters, make good cracks and surface imperfections.							-
2 *3 Top Coat	SANITECT Mild Base	100	0.28-0.32	2	Min. 3 Max. 7 days	-	Min. 24	Roller, brush, airless spray gun. Discharge 600-1000ml/min. Pattern width: 25-30 cm.
	SANITECT Mild Hardener	14.3	-					
	Paint Thinner A	0-20	-					

Note : Onto a degraded substrate or a highly alkaline concrete, Mirac Sealer ES shall be applied.

### SANITECT FLOOR Non-solvent epoxy-resin floor paint

Uses : Floor  
 Suitable Substrates : Concrete, Mortar Cement (20°C, 65% RH)

Procedure	Material	Mix (weight ratio)	Consumption (Kg/m <sup>2</sup> )	Number of applications	Interval (hrs)			Remarks
					Within Process	Between Process	Final Curing	
*1 Substrate Preparation	● Allow the substrate to dry to a moisture content of 10% or less, ensuring a pH of 10 or below. ● Remove all foreign matters completely by blast cleaning or acid etching, smooth out scratches cavities and irregularities.							-
2 Under Coat	SANITECT Floor Primer (B)	100	0.15-0.20	1-2	Min. 4	Min. 4	-	Roller, brush.
	SANITECT Floor Primer (H)	25	-					
3 Top Coat	SANITECT Floor (B)	100	1.4-2.1	2	8-24	-	Min. 24	Roller, brush.
	SANITECT Floor (H)	20	-					

#### USES

- Interior of hospitals, clinics and other medical facilities
- Interior of food processing plants and food catering centres
- Interior of public facilities such as schools, daycare centers and kindergartens
- Interior of restaurants, cafeteria and dining halls
- Interior of hotels and private residential apartments
- Interior of nursing homes and homes for the aged  
 (Interior applications include usage on ceilings, skirting, doors and walls)

#### HANDLING PRECAUTIONS

- ★ 1 For priming to fragile substrate, powdery surface, porous substrates, damaged surface, surface having uneven absorption of primer, MIRAC SEALER ES (15 kg/can) would be recommended instead. (Consult SKK for the detail)
- ★ 2 Dilution Ratio of SANITECT W : for brush or roller application mix 5-10 (Wt.%), for spray application mix 10-20 (Wt.%)
- ★ 3 SANITECT MILD : for brush or roller application mix 5-10 (Wt.%), for spray application mix 10-20 (Wt.%)
- ★ 4 Where the drying speed is too slow due to high humidity or low temperature should be well-ventilated to accelerate drying speed.
- ★ 5 Basically avoid application under 5°C. In case of application under 5°C, warm up the surface and atmosphere
- ★ 6 For repainting and method of application, please consult SKK.

#### PACKAGING

- ★ SANITECT-W Primer 15 Kg/can
- ★ SANITECT Floor Primer 15 Kg/set (base and hardener)
- ★ SANITECT-W (gloss/matt) 16 Kg/can
- ★ SANITECTMild (gloss/satin) 16 Kg/set (base and hardener)
- ★ SANITECT Floor 18 Kg/set (base and hardener)
- ★ Paint Thinner A 16 Ltr/can

#### HAZARDS INFORMATION AND SAFETY PRECAUTIONS

- Read precautions on containers thoroughly before use.
  - Heed the following precautions when handling products indicated with a ○\* as those are dangerous goods.
- 1 Do not use near naked flame as they are flammable liquids.
  - 2 Use at well ventilated places and wear a protective mask or filtering mask to prevent possible organic solvent poisoning.

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