

Technical Data Sheet



Air Purity Freetex is an anti-bacterial and deodorization non woven fabric with Pigment printing & Pressure sensitive adhesive. By using the non woven fabric, it feels like Canvas and has lot of porous layers especially.

FEATURES

- Airpurity freetex is an eco-friendly material that is applied with new technologies for deodorization and air purification.
- By catalytic action, it inhibits germs and removes all orders such as sweat smell, foot smell, and formaldehyde from carcinogen.
- 3A funtions - Air clean & deodorant effect, Anti-bacterial effect, Advertising effect
- High resolution and color brilliant with Pigment ink.
- Stick sheet type with Removal & Repositionable PSA. (NO residue)

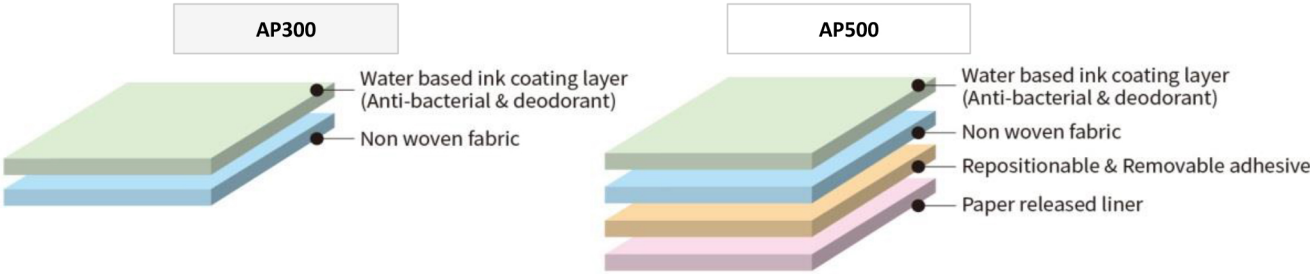


Texture



Odor Free + Anti-bacteria

PRODUCT STRUCTURES



SPECIFICATION

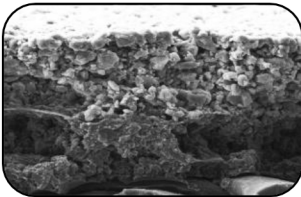
H.S. code : 5603.13

Property	Unit	Air Purity Freetex 330	Air Purity Freetex Removal 33	TEST METHOD
Product Code		AP300	AP500	
Apperance	-	Matte	Matte	ASTM D645
Base film	μm	300μm Non woven fabric	300μm Non woven fabric	ASTM D645
Total Thickness	μm	310	505	ASTM D645
Total Weight	g/m²	165	400	ASTM D646
Peel strength	g/inch²		240 at 20 min. 220 at 24 hour	ASTM D903
Released liner			80 μm PE coated paper liner	
Ink		Pigment / Latex	Pigment / Latex	
Finished roll Size	liner meter	1.270 m width x 30 m length	1.270 m width x 30 m length	

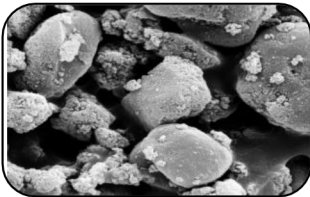
MECHANISM

By using porous materials & transition metals inorganic materials, it laminates on non woven fabric for wide spread function coating layer.

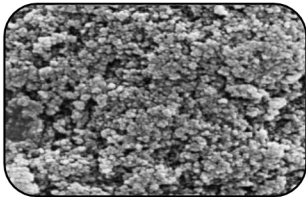
Air purity Freetex SEM pictures



(a) x 2000



(b) x 20000



(c) x 100000

1) Deodorization

Lots of odor molecular in the air absorbs on the airpurity freetex on the surface => After taking Catalytic action, the odor is resolved by the airpurity coating layer

2) Anti-bacterial

Basic principle is an Oxidation reaction in which various kinds of harmful germs touch on the the air purity surface.

It inhibits germs' cell form and it prevents cell proliferation.

PERFORMANCES

1-1) Anti-bacterial effects

* STANDARD FILM : Stomacher 400 POLY-BAG

* SAMPLE SIZE : 50 mm × 50 mm

* COVER FILM SIZE : 40 mm × 40 mm

* INOCULUM SIZE : 0.4 mL

* TEST CONDITION : The solution are fixed at 35°C, 90% R.H. for 24 h, and Determine Bacteria cell Growth inhibition rate by pour agar plate method

BACTERIA - 1	Escherichia coil ATCC 8739		Staphylococcus aureus ATCC 6538P		Klebsiella pneumonias ATCC 4352		Salmonella typhimurium KCTC 1925	
	WO AP	W AP	WO AP	W AP	WO AP	W AP	WO AP	W AP
(Without AirPurity - WO AP, With AirPurity - W AP)								
At beginning	17,000	17,000	17,000	17,000	17,000	17,000	17,000	17,000
① After 24 hours	1,400,000	< 0.63	25,000	< 0.63	280,000	< 0.63	320,000	< 0.63
② Value of anti-microbial activity	-	6.3		4.5		5.6		5.7
Rate (1-②/①)%	99.99		99.99		99.99		99.99	

(unit : CFU/cm²)

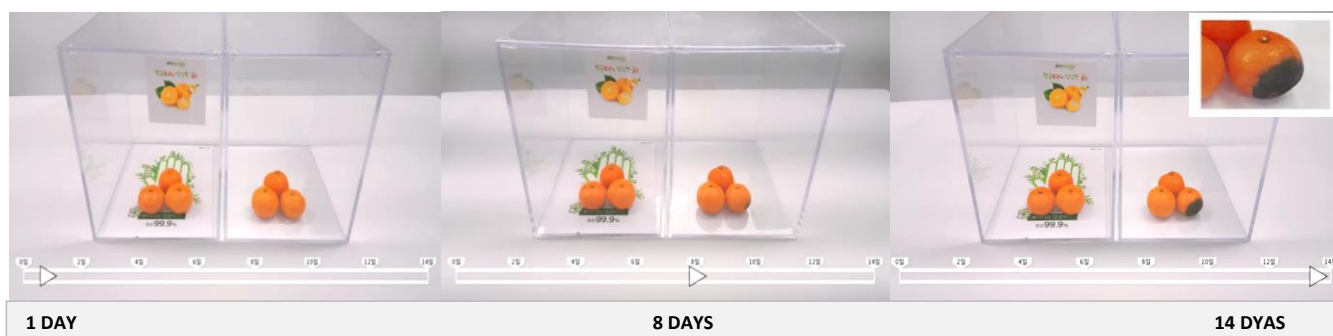
1-2) Anti-bacterial test with ORANGES

TEST CONDITON : Indoor test

TEMPERATURE : Room temperature & Two sealed Acrylic box (NOT 100% sealed)

TEST : Normal Oranges (One side with AirPurity, the other without AirPurity)

PERIOD : 14 DAYS



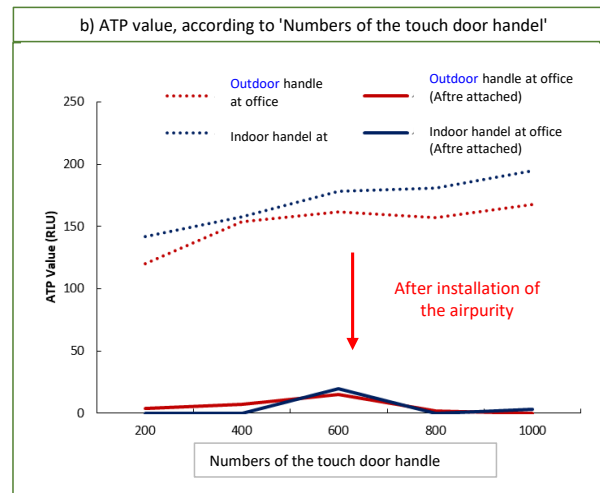
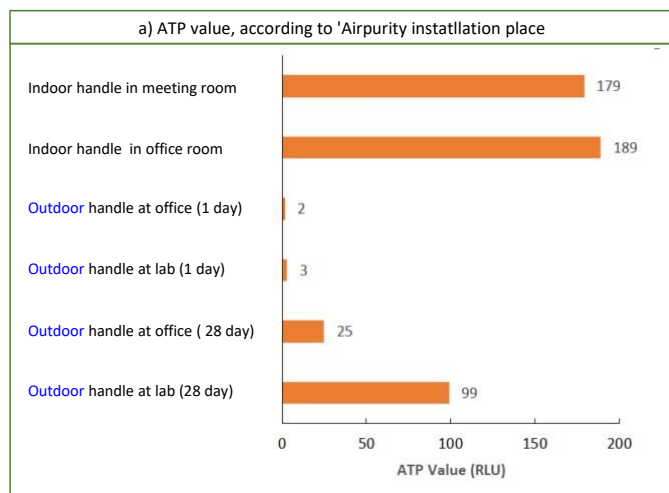
2-1) ATP method define ;

ATP (Adenosine Tri-Phosphate) : an organic compound that provides energy to drive many processes in living cells.

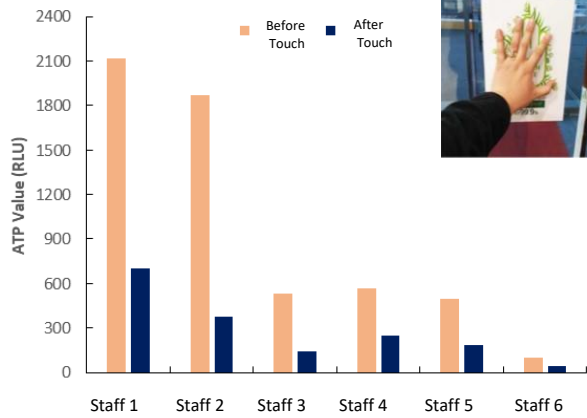
ATP ∝ The degree of Bacterial Contamination.

ATP is measured in RLU's (Relative Light Unit, as the unit of measure for adenosine triphosphate).

2-2) ATP measures according to the places



c) ATP value, before & after touch at a door handle attached AirPurity



d) ATP measuring equipment (TBD - 1000, TELTRON)



(a) Before touch Air Purity

Measuring value : 1868



(b) After one touch Air Purity

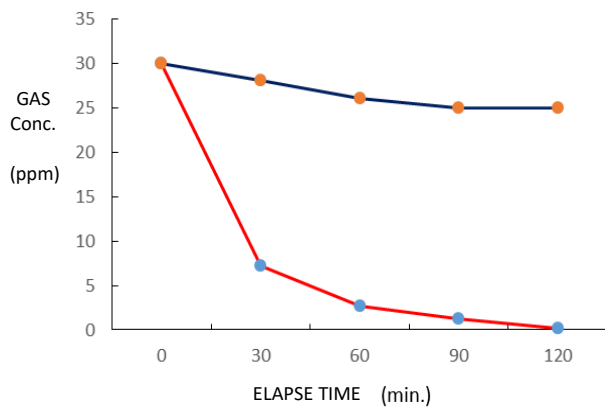
Measuring

3-1) Deodorizing effect

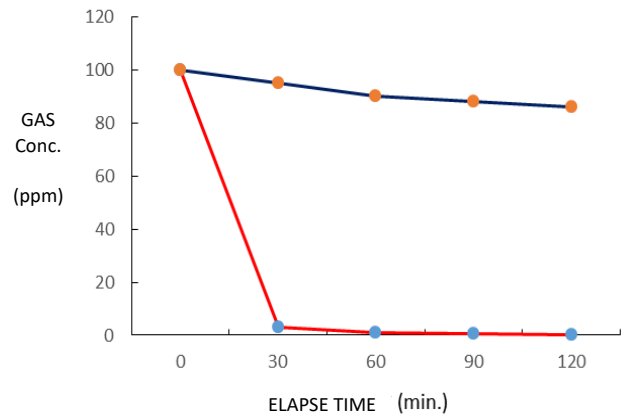
GAS component	Types of Odor					Rate of deodorization (%)	TEST METHOD (GAS Tube Inspection)
	OLD	SWEAT	URINE	CIGARETTE	FOOD WASTE SMELL		
Trimethylanmne		○	○		○	99.6	Testing film : 10 cm x 10 cm , Gas bag : 2 L Measuring time : Test After 2 hours by FITI test Rate of deodoriation (%) - ((Cb-Cs)/Cb) x 100 - Cb : Blank, GAS conc. value in the bag, after 2 hours - Cs : Sample, GAS conc. value in the bag, after 2 hours
Ammonia	○	○	○	○	○	99.8	
Methylmercaptane			○		○	99.3	
Acetic Acid	○	○	○	○		96.0	

3-2) The following gas concentrations at ELAPSE TIME

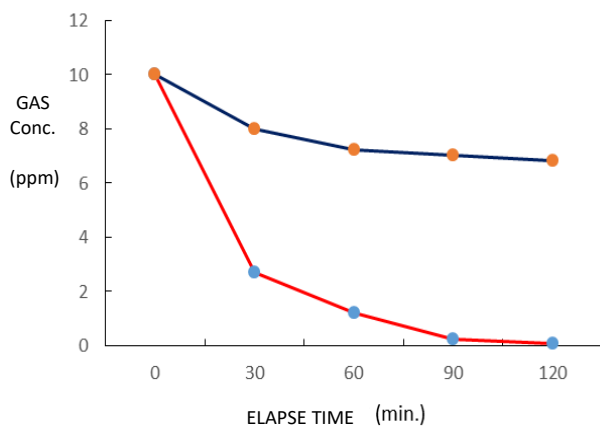
(a) 트리메틸아민 (Trimethylamine)



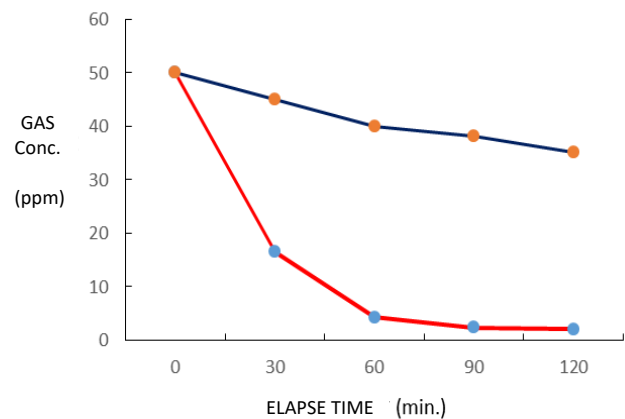
(b) 암모니아 (Ammonia)



(c) 메틸메르캅탄 (Methanethio)



(d) 아세트산 (Acetic acid)



3-3) Test for Ammonia deodorization by PHENOLPHTHALEIN indicator



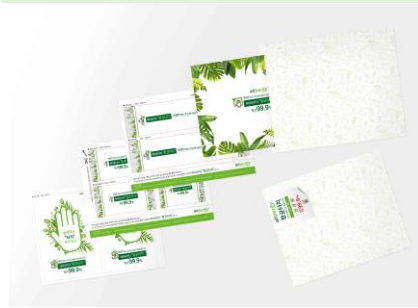
APPLICATION

- Restroom, Hospital, Living area on the wall,
- Closet, Show self, Kitchen, Desk, and Inside car, PhotoFrame, PET accessory

Deodorization Sticker pack (A3 size)



Anti-bacterial touch pack



Banner and others pack



PROCESSING & HANDING

- Take latex gloves when you handle to avoid any defect on materials.
- Always the rolls store together with the label respectively lot number! Without lot number or production number, no requests or claims can be accepted !
- Application Temperature : > 5 °C
- Self life : 1 years

GENERAL INFORMATION

- Storage is best to be done in upright position in the original case.
- Shelf life : one year, stored in original packing at recommended temperature.

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