

Even more upgraded sick house syndrome prevention materials with natural binders

# 액티바 ACTIVA

Sick house syndrome / daily life radioactivity / insulation of radon/  
releasing atopy symptoms / restraint of a number of mosquito larvae



ISO14001(환경경영시스템)



ISO9001(품질경영시스템)

INNOBIZ  
기술혁신영종소기업

KIBO  
벤처기업



이도리 안심마크

한국공기청정협회/연구조합  
KOREA AIR CLEANING ASSOCIATION



환경부 허가 제 310호  
한국실내환경협회 공식인증 업체



조달청나라장터



연구개발인증서



품질우수제품

# Nobody can choose the air that they breathe! To live healthy life for 100 years, the most important thing is clean air Rather than good food or water

Activa 707, having microparticle of nano unit, is made of environment-friendly liquid-activated charcoal-and prevents us from sick house syndrome, various toxic substances and radon until the building life is finished.

The best way to prevent sick house syndrome  
Just simply apply Activa 707,  
which is made of liquidated activated charcoal  
Chamgil only focuses on the way to prevent SHS



## High growth, promising company

Increase of sales by two times every year  
Designated by HIT 500 products of  
small and medium-sized businesses



## A company with strong capabilities in export

Developed global brands  
Strengthened overseas marketing  
Advanced practical trade capabilities



## Good brand prize in Korea

2016 Korea Superb Brand Awards  
Grand prize for brand by Kyunghyang  
Daily News  
A company leading new growth of Korea



## Expanded to overseas

Exported to overseas, including China,  
Vietnam and European countries  
Sold at overseas department stores, duty  
free shops and supermarkets  
Participated in overseas exhibitions



## Certified as an environ- ment-friendly business

"Excellent level" certified by "Atopy Korea"  
People's Solidarity for environment-friendly life  
Korea Air Cleaning Association  
Certified as no.310 by Association of Korean Indoor Environment  
under the Ministry of Environment

Certified by Association of Korean Indoor Environment  
Grand prize in radon prevention of sick house syndrome  
Grand prize in environment-friendly products by green management



## Business with advanced manufacturing technology

Established a research institute under the company in 2016  
KICA Korea Interior Cooperative Association  
KIMA Korea Interior Management Association  
Korea Industrial Technology Association

Korea Testing & Research Institute  
ISO14001 in environmental management  
KIMA Korea Interior Management Association  
ISO9001 in quality certification

 HANSHIN Engineering & Construction Co., Ltd.,-Hue

 Hyundai Development Company — I PARK

 SSANGYONG ENGINEERING & CONSTRUCTION CO., LTD. — Sweetdohome


 Daelim Industrial Development, CO., LTD. — e — convenient world

 현대건설

 포스코건설

 롯데건설

 KOLON GLOBAL CORPORATION Co., Ltd.

 PEOPLE'S SOLIDARITY FOR ENVIRONMENT-FRIENDLY LIFE

Hyundai Engineering & Construction Co., Ltd.  
— Hometown

POSCO Engineering & Construction Co., Ltd.  
— Posville


Lotte Construction Co., Ltd. — Castle

KOLON GLOBAL CORPORATION Co., Ltd.  
— Haneulchae

People's Solidarity for environment-friendly life

 KIMA Korea Interior Management Association

 KIAC Korea Interior Cooperative Association

 Acquired Q Mark for quality certification

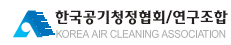
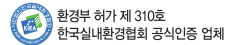
 Venture business

 Innobiz company

 Promising small and medium-sized business



## Technology Certified



## Company History

### 1987 -2005

- Established Ethens Interior
- Registered in Korea Interior Management Association
- Established Chamsali Co. Ltd.
- Built a factory in Gimpo-si, Gyeonggi-do
- Registered in Korea Interior Industry Association
- Registered HIT 500
- Various products displayed in domestic exhibitions

### 2006 -2012

- Changed the company name to Chamgil Co. Ltd.
- Registered Chamgil trademark
- Registered Bbalaenureumi trademark
- Registered a patent for semi-auto handled clothes horse
- A member of Korean Trade Association
- Registered patents for anion lamp and a lamp to prevent mosquitos
- Registered a patent for automatic clothes hoarse
- Registered a patent for blanket drying rod with ventilation materials
- Plaster this on building interior materials to prevent toxic substances
- Registered a patent for mixing method
- Grand prize in environment-friendly products by green management
- New leading power of Korea's economic growth
- Leading future-company in environment area
- Awarded for contribution for national economy by small business promotion association

### 2013 -2015

- Built a factory in Incheon
- Registered in national market of Public Procurement Office
- Grand prize in promising brand by Kyunghyang Daily News
- Designated as an excellent product by small and medium-sized businesses
- Acquired ISO 14001:2009
- Acquired ISO 9001:2009
- Research and Development department Established Technology Research
- Awarded for management capability and job creation
- Korean interior Joined in Industrial Cooperation Association
- Test against extraction of 5 main toxic substances
- Test against measurement of anion release
- Test against indoor air quality measurement
- Test against radiation factor of far infrared rays
- Inspection test of comparison with charcoal of other companies
- Tests of colon bacillus, staphylococcus and fungus
- Test of complete absorption of nuclear waste glassification

### 2016

- Grand prize for good brand in Korea
- "Excellent level" certified by "Apy Korea"
- Built domestic exhibition center
- Participated in Shenzhen export exhibition (China)
- Participated in Yiwu export exhibition (China)
- Participated a construction exhibition in Vietnam
- Participated in Hanoi exhibition
- Participated in Laos exhibition
- Participated in Las Vegas exhibition
- Joined in Korea Air Cleaning Association
- Participated in various exhibitions in Korea
- TV / magazines / news Sponsorship and news articles
- Promoted various exports businesses
- Promoted various exports businesses
- Exported to Ho Chi Minh, Vietnam

## Patent / Certification



벤처기업



ISO 9001(환경경영)



ISO 14001(품질경영)



특허10-0416480



특허10-0917739



특허 10-0917739



특허 10-1609577



특허 10-1055897



참가상표등록



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# Is a new apartment a toxic gas room?

The indoor air is clean and breathable through decomposition of various toxic substances from interior works.



## Indoor pollution sources and harmfulness

<b>PVC, tile, insulation materials</b> : VICs, xylene	decrease of reproductive functions, nausea, carcinogen, toxic substances	<b>Bathroom: trichloroethylene</b>	tiredness, powerless feeling, anesthesia, carcinogen, damages, decrease of memory	<b>Sofa : ethylene chloride germs</b>	irritation on skin, diseases related to respiratory organs and mites
<b>Bedroom</b>	excessive high humidity	<b>Furniture formaldehyde</b>	carcinogen, hallucination, irritation to respiratory organs, decrease of drive, headache, nausea, asthma	<b>Kitchen: carbon monoxide, formaldehyde, sulfur monoxide</b>	weakening of immune system, damages to organs, depression and nervousness
<b>Mite</b>	main causes of atopic skin diseases, asthma, rhinitis and respiratory allergic diseases	<b>Paint: VOCs, toluene, lead, preservative</b>	nausea, motion sickness, hallucination, mental disorder, toxic substances in nervous system	<b>Wallpaper and floor paper</b>	skin diseases, irritation to mucus membrane, respiratory disorder and carcinogen

## No taste, no odor, no color — silent killer, radon

### Silent killer, radon

It is everywhere in daily life, in building floors, drains and cracks on concrete walls

"fear for radon" broadcasted in KBS Chasing 60 minutes

"Serious problem - Sick House Syndrome" broadcasted in KBS 9 news

"Toxic gas from wall paper" broadcasted on MBC news

Houses attack humans - broadcasted in "counterattack", SBS

Is indoor areas of apartment a toxic gas? In Chosun Daily News

Restriction of toxic building materials, Kyunghyang Daily News

Serious air pollution of apartments in Seoul, Yonhap News Agency



1. Extracted a plaster board from a kid's room on the 17th floor and measured out 8 pci/c radioactivity
2. Radon from a plaster board can be absorbed to a lung and it can be released from the lung for 45 hundred million years
3. Radon released to the air can go through respiratory organs and damage lung cells and cause cancer
4. Plaster boards, which are used for almost every building, release radon and radioactivity and they are released our daily environment without any preventive measures,
5. Kindergartens, schools and nursing homes, where children, pregnant women and the aged are, are exposed to the first graded carcinogens, such as radon and etc., without preventive measures,
6. Radon can be circulated through building floors, drains and cracks of concrete walls and spread to our daily life spaces,
7. Little amount of radioactivity substance can be harmful to humans,
8. Long time of exposure to below 4 pci/c of radon can cause cancers to 62 people out of 1,000.

Our home is healthier now with Activa 707.

# MAKE THE HEALTHY HOME WITH ACTIVA 707, MADE OF NATURALLY EXTRACTED CHARCOAL.



## First in the industry

- Acquired ISO14001 quality management certification code solely in the industry
- Convenient application with excellent adhesiveness
- Unique natural plant substance to preventive mosquitoes
- Activated charcoal from oaks and bamboos, which are cherrypicked in Korea





# THE AIR HOLES OF CHARCOAL FORM NATURE ITSELF

— Activa 707, having microparticle of nano unit, is made of environment-friendly liquid-activated charcoal—and prevents us from sick house syndrome, various toxic substances and radon until the building life is finished.





Breathe in the air of forest right next to your wall

# Paint activated charcoal

Even more upgraded sick house syndrome prevention materials with natural binders

- 1 100% made in Korea with oak and bamboo charcoal
- 2 Natural binder with 3 times stronger adhesive strength will completely remove any gaps between materials.
- 3 Semi-permanent solution against sick house syndromes after one time of painting work
- 4 Mixed with microparticles of nano unit
- 5 Prevention of larvae and mosquitoes
- 6 Decomposition of various harmful substances from cement, furniture, wallpaper, lardon, formaldehyde, volatile organic compound and etc
- 7 Using bamboo activated charcoal with having 240 times higher adhesive strength than normal charcoal
- 8 Natural power from mixture of 20 special minerals
- 9 Jewel healing therapy added – (pearl, amethyst and tourmaline)
- 10 No toxic gas and odor with 10 nonflammable materials in case of fire

Application of charcoal made of trustable and stable natural materials



Completion of test against  
colon bacillus and antibacterial  
treatment



Completion of test against  
staphylococcus



Release of 1,228  
anions



Completion of test against  
complete absorption of nuclear  
waste glassification



Completion of test against  
5 main heavy metals



Completion of test against  
5 main heavy metals



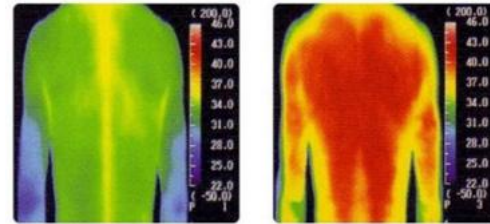
Air purification and  
deodorization 98%

# What is the Energy Activa?

This means the integrated bio of eastern and western cultures. Activa is invented and patented for the first time in Korea and it recharges human bodies while stimulating metabolism and promoting blood circulation, which lead in healthy reproductive system and antibacterial process by absorbing positive heat waves from solar energy. Activa provides necessary nutrients and energy promptly through strong absorption capability and maximize metabolisms of human beings to make our body healthier and energetic.

It consists of silicic acid and aluminum, which are prescribed in "Korean Medicine" and used for ingredients of antacid, and more than 20 of natural minerals (germanium, gold, calcium, zinc, nickel, magnesium, titanium, cobalt, natrium and etc.) and it is safe enough to dose as being permitted as a food additive. It is manufactured by trembling crush method of hydrothermal transformation and it is not absorbed into the body and released after taking in, while only releasing positive waves (7~20 $\mu$ m), which are required for growth of lives.

Physical changes after our body is being exposed to the positive waves (left: before, right: after)



## Microparticles of nano unit

It consists of microparticles of nano unit (1mm is divided by a million), which penetrates into cell membranes easily. So, the energy can be absorbed to cells directly to promote cells' regeneration, while decomposing harmful substances in the air.

## The strongest energy release until now (100% combustion)

With Activa powder, there will be no fumes after incinerating 30 tires and the powder is mixed with special mineral power, which does not have dioxin.

## Test of absorption of nuclear waste

Complete glassification of nuclear waste was successful with cooperation of the Korea Atomic Energy Research Institute, Nuclear Environment Technology Institute and Hoseo University and the Munich University in Germany also recognized the achievement. We also have the safe and stable solution to the Cesium pollution issue of Japan.

Activa 707, which was made by the technology of Eco Activa, absorbs accumulated pesticides, chemical substances, heavy metals and radioactive pollutants in our bodies and release them outside of our bodies.



Nuclide	Radioactivity of early stage (μCi/cc)	Added amount of ACTIVA (g/L)	Radioactivity after absorption (μCi/cc)	Removal rate (%)	DE	Note
Cs-137	$1.42 \times 10^{-4}$	3	$2.35 \times 10^{-5}$	98.34	60.33	pH9
Co-60	$1.73 \times 10^{-4}$	4	$8.08 \times 10^{-7}$	99.53	213.9	pH9

ACTIVA amount (%)	Dissolving density	Glassification
85%	1100℃	Solidification

## Participants in tests

Hoseo University / Korea Atomic Energy Research Institute Co. Ltd. / E&E Co. Ltd. / Eco Activa Environmental Technology Research Co. Ltd. / Designated Chonbuk National University / Test results inspected by Nuclear Power Plant Waste Research Institute of Munich University in Germany

	Amount of active oxygen	Return of active oxygen	Return of NADH	Return of NADH
Normal materials	7mole TE/g	14/g	0.0008/mole	2,267m/l (normal person)
Activa	882	120/g	0.0062/mole	1.405 mole/l
Activa	126 times	126 times	7.75 times	38%



## Activa 707 features

	Air purification and deodorization		Fundamental prevention of radon		Dehumidification and humidity control
	Prevention of harmful germs		Excellent heating and cooling effects		Forest bathing effect
	Release of charcoal's far infrared rays		Prevention of water veins and electromagnetic waves		Convenient application with strong adhesiveness
	Decreased number of larvae and mosquitoes		Protection of livestock		Prevention of atopic skin diseases
	Maintenance of appropriate body temperature		Removal of body odor		Release of fatigue
	Blocking daily life radioactivity		Maintenance of food freshness		ZERO-VOC

## Charcoal story of history

### Secret of MaWangDui tomb

In 1972, 2500 years old tomb was founded in the suburb of Changsha, Honan, China and the tomb was for the early 50' s woman, which had the conditions of death happened 4 days ago. The results show that her blood type was B and the death was caused by airway obstruction. A remarkable thing was that 176 cucumber seeds, which are not sprouted after storage for 10 years, were found in the stomach of woman, sprouted after planting them on the land. In addition, 5 tons of charcoal was found near the tomb. The mystery of modern science and medical science is brought out to Korea.

### Tomb of KimHongCho, in Yeongju-si, Gyeongbuk, Korea

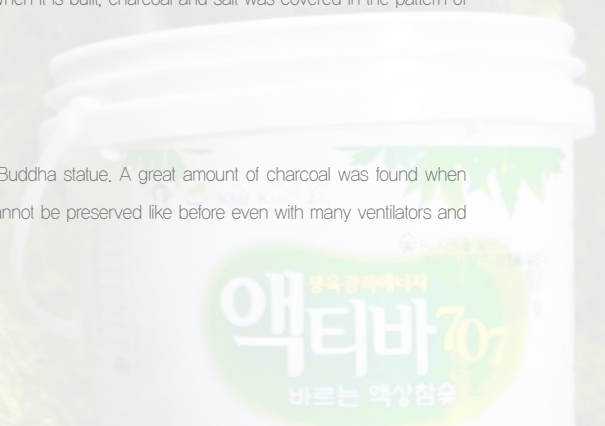
In the process of moving tombs due to a national road plan, 489 years old corpses were found. Most of the body parts were preserved well apart from stomachs and at this time, charcoal was laced above 30cm of the coffins.

### Mysterious building – Haeinsa Temple

It is almost a miracle of how the daejanggyeonggak of Haeinsa Temple (Tripitaka Koreana) was preserved. When it is built, charcoal and salt was covered in the pattern of # and the charcoal controlled the moisture and preserved Tripitaka Koreana until now.

### Gyeongju Seokguram

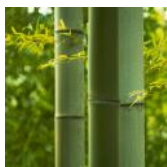
When Gyeongju Seokguram aged more than 1,000 years was found, it was almost like a just sculptured Buddha statue. A great amount of charcoal was found when repairing the area, workers took out charcoal without knowing the importance of charcoal. Now, the area cannot be preserved like before even with many ventilators and modern equipment.



# BAMBOO CHACOAL

The best of charcoal – bamboo activated charcoal

Bamboo activated charcoal is a main ingredient of Activa 707 and it is supplied for purification of Jinrosoju, gas mask of Ministry of Defence, water purifier suppliers and KT&G tobacco filter.



Comparison of charcoal absorption (the surface area)		표면적	흡착력 비교
Bijangtan	2~5		1
Chamcharcoal	200		40times (times)
Bamboo charcoal	600		120times (times)
Bamboo activated charcoal	1200		240times(times)

구분	대나무숯	비고
Deodorization rate (%)	Hydrogen sulfide (H <sub>2</sub> S) 89%	After 1 hour
	Ammonia (NH <sub>3</sub> ) 92%	After 24 hours
Release rate of far infrared ray (μm)	(5~20 μm) 0.922	Korea Farinfrared Association
Released amount of far infrared ray (W/m <sup>2</sup> )	3.55 x 10 <sup>2</sup>	Korea Farinfrared Association
Sterilization and antibacterial capability (%)	Colon bacillus 96.1	After 24 hours
	Bacillus pyocyaneus 97.2	
Anion number (number/cc)	1,228	Average anion number in forest 1,000~2,000
Heavy metal absorption (%)	Lead (Pb) not detected	Korea Farinfrared Association
	Zinc (Zn) not detected	
	Iron (Fe) not detected	
	Copper (Cu) not detected	
Inorganic substance content	4 times more than normal charcoal	The Korea Forest Research Institute
Mineral content	Calcium, sodium, potassium, magnesium and germanium	Include a number of beneficial minerals
Prevention of electromagnetic waves (%)	99.99	Bamboo charcoal baked at a temperature of more than 1000°C
Improvement of land quality	Good for water permeability, maintenance, nutrient holding capacity and increase of land temperature	The Korea Forest Research Institute



#### 01 Negative ion effect

An anion strengthens blood circulation, activation of cells, immune system and control of autonomic nervous system. In addition, it simulates metabolism and energy, while cleansing blood, releasing nerves and fatigue and enhancement of appetite, so it is called air vitamin. Bamboo charcoal clean indoor space by releasing fresh air and pure anions.

\*anions from natural substances like bamboo charcoal is required in modern residential spaces, where a great amount of harmful cations are generated from electronic equipment.

#### 02 Far-infrared ray effect

Bamboo charcoal warms human body by far-infrared radiation heat from bamboo forest, which has 93% of far-infrared radiation effect. Far-infrared radiation is absorbed into human bodies and generates heat, which has effects of expansion of capillary vessels and stimulation of blood circulation. Therefore, excretions from cells and other toxic substances can be released, while supporting supply of nutrients and oxygen.

\*it is used for various health products and medical equipment.

#### 03 Electromagnetic shielding effect

Carbonized bamboo charcoal at a temperature of more than 1000°C blocks and prevent electromagnetic waves from electronic equipment. Harmful electromagnetic waves cause irritation and heat and increase body temperature, which causes leukemia, cancer, constipation and etc.

#### 04 Air freshner effect

Bamboo charcoal has a number of madreporites and the spread madreporite size will be 600m<sup>2</sup> per 1 gram, which absorbs chemical molecules, such as ammonia, carbon dioxide, nitrogen, carbon monoxide, methane, hydrogen, oxygen and etc., and removes the causes of odor in the air.

\*bamboo charcoal has an excellent deodorization effect, so it is widely used for removing odor in refrigerators, ethylene gas, odor in closets, shoe racks, bathrooms and tap water.

#### 05 Water purification effect

Bamboo charcoal is a natural water purifier cleaning gas and liquid, with its internal physical function and microorganism living in charcoal. A madreporite of bamboo charcoal has strong absorption and cleansing capabilities, while beneficial microorganisms decompose various pollutants effectively. In addition, affluent mineral substances of bamboo charcoal are released to make the water healthy and tasty.

\*bamboo charcoal is widely used for water purification of glucose intravenous infusion, amino acid and etc. at hospitals, tap water, various water purifier filter and etc.

#### 06 Anti-bacterial and anti-poison effect

At the time of Hippocrates, charcoal was used for treating epilepsy, dizziness, anemia, anthrax and etc., while various charcoals were used for medicine in the east side. If you take in charcoal, the beneficial substances will stay in the body, while sterilizing the body against harmful viruses and releasing harmful germs.

\*in modern medical science, charcoal is prescribed for first-aid medicine at the site, while Japan and the US also recognize charcoal as a medicine.

#### 07 Mineral supply effect

Bamboo charcoal is full of natural mineral ingredients, such as calcium, potassium, magnesium, sodium and etc., which are beneficial to our bodies. If you put charcoal on your bathtub, the water becomes alkali, which is close to the quality of spring water and good for health and skincare. If you purify water with bamboo charcoal, various minerals of bamboo charcoal dissolves into water.

#### 08 Humidity control effect

Stomas of charcoal has a humidification effect and bamboo charcoal has more stomas than normal charcoal. Humidifier causes problems with germs inside, but bamboo charcoal has an antibacterial function, which is very effective and safe. Bamboo charcoal not only has a humidifier function but also dehumidifier function, which provides the best and fresh indoor environment.

\*charcoal was buried near posts of buildings or under floor to preserve buildings or scriptures long time ago (Tripitaka Koreana of Haeinsa Temple in Korea, Beomnyungsa, Cheonwangneung and etc, which are a few of the best wood buildings in Japan)

## Activa's unique technology



### Activa with microparticles of nano unit

Activa provides necessary nutrients and energy promptly through strong absorption capability and maximize metabolisms of human beings to make our body healthier and energetic.

### De-ionized water

De-ionized water is clean water without heavy metals and pollutants, which is used for making skin care products

## Jewel healing therapy added



### Pearl – break of body and spirit

Pearl, which is ground to very soft and fine powder, promotes blood circulation and cell regeneration to relax your body and mind.



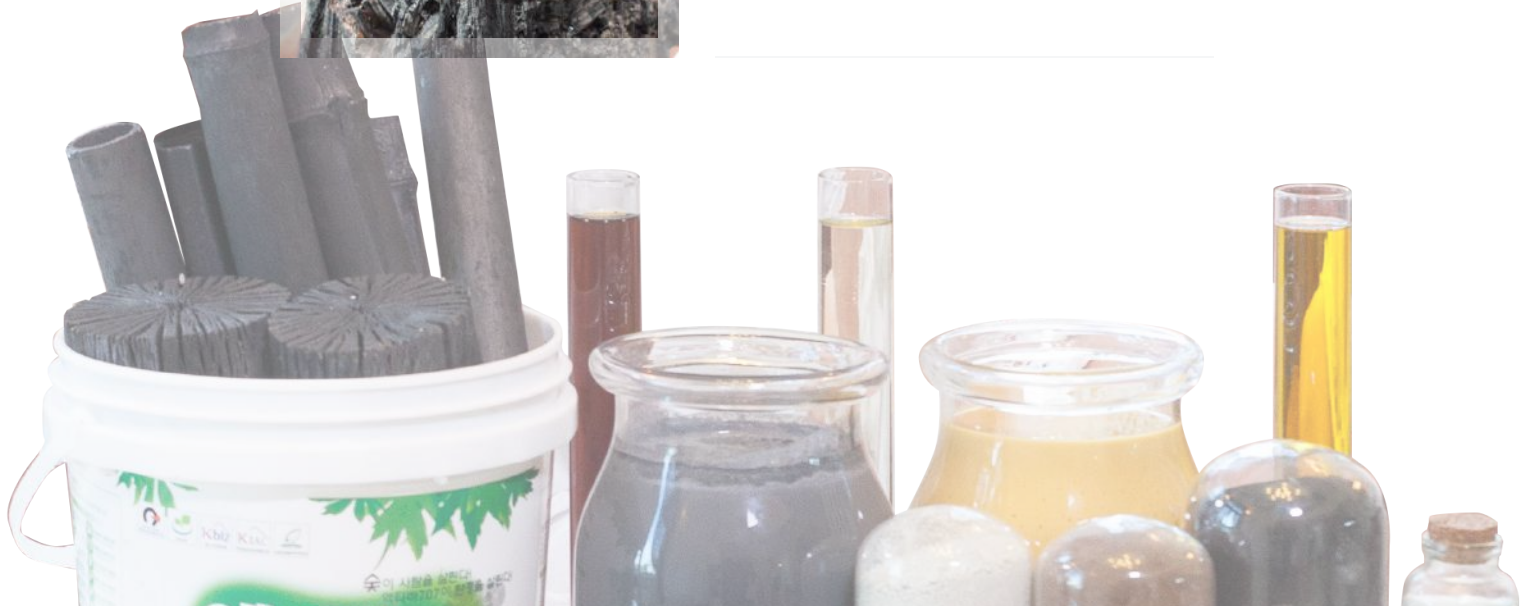
### Amethyst– releasing affluent far-infrared rays

It releases affluent far-infrared rays and stimulates cell movements and it also used as a medicine in Donguibogam



### Tourmaline powder for insulation of radioactivity

The anions and far-infrared rays is similar to currents of human bodies, so it helps blood circulation and relaxing of nerves,





## Activa 707 from charcoal's stoma

If you see charcoal with a microscope, the whole charcoal is made of fine stomas.

The area of stoma is approximately 300m<sup>2</sup> per 1 gram! Activated charcoal maximizes internal surface area and it has an area of 3,500m<sup>2</sup>. Charcoal stomas purify air and control humidity, while absorbing harmful and foreign substances, odor particle and etc., for air purification and deodorization. Bamboo activated charcoal has strong absorption capability 240 times better than normal charcoals and its stomas with various sizes are the best habitats for microorganisms. In addition, there are affluent calcium, potassium, iron, manganese and etc., which are necessary for our health, in charcoal.

Bamboo activated charcoal has strong absorption capability 240 times better than normal charcoals and its stomas with various sizes are the best habitats for microorganisms.



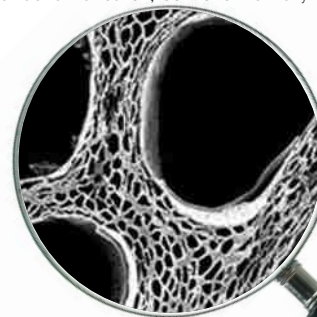
▪ Fresh power – bamboo activated charcoal



▪ Cham charcoal –  
a present from god to surprise human beings

### Do you know that charcoal breathes?

A number of stomas of charcoal has strong absorption capability, which are good for dehumidification, control of humidity and air purification.



1000 times enhanced surface with  
a high-resolution microscope

3times stronger absorption power with natural plant extracts  
Keep the stomas of charcoal



Binder made of natural plant extracts  
Adhesives made of plant oil



Prevention of mosquitoes  
98% of mosquitoes are prevented  
after 4 hours



oil  
Non-toxic natural adhesives



# “Make a world without atopy”

We are exposed to a number of pesticide substances, dioxin, chemical substances and heavy metals in our daily lives. Activa prevents existence of causes for atopy by absorbing toxic substances in our bodies. New house doctor, Activa 707 and Atopy Korea are working together.

Acquired 'excellent level' for atopy safe mark from Atopy Korea

## Honest liquid solution

These days, not qualified products, which do not have any positive effects on indoor air purification, are threatening us since toxic chemical substances are known to cause sick house syndrome. Activa 707 has a strategy, which is “honest is the best marketing”, and made our products the best in the most honest way.

## Safe to pregnant women, the aged and children

It is certified by Atopy Korea, Indoor Environment Association Certification, People's Solidarity for environment-friendly life and Korea Air Purification Association, so it can be safely used in kindergartens or nursing homes.

## Ingredients from nature

This is 100% environment-friendly paint, which does not have odor and toxic gas, while having stronger absorption capability. It has intact stomas of forests, so it is the best way to address sick house syndrome.

## House is the third skin

If we say the second skin is clothes, concrete and various building materials surrounding buildings will be our third skin. However, if toxic substances are continuously released from houses, which is our third skin, we need to think about this seriously.



The only product to use de-ionized water in Korea



Stronger adhesiveness with natural plant extracts than normal adhesives



Atopy killer with strong absorption capability



Good for removal of larvae, ants and cockroaches and prevention of mosquitoes



Activa 707 sponsored “war with humidity of rainy season” in Morning wide, SBS





# UNIQUE TECHNOLOGY COMPARED TO OTHER SIMILAR PRODUCTS

Liquid charcoal-absorption of harmful substances is the most important  
If it cannot go through finishing materials, charcoal's function cannot work.

## Mixture of charcoal and comparison of separated layers



## Viscosity comparison in case of mixing



## Grinding density comparison



## Industrial adhesives VS binder made of plant extracts



## Tap water VS de-ionized water



\*Activa 707 only uses de-ionized water and it has natural plant ingredients and more than 20 special minerals, while being mixed with only activated charcoal baked over 1000 degrees. Therefore, it has 80~90% absorption capability, which is a lot higher than other similar products.

# GROWTH CONVENTIONAL

## ENERGY ACTIVA707

This is environment-friendly wall finishing materials, made of activated bamboo charcoal baked at a temperature of more than 1200℃

### Bamboo activated charcoal paint

### New home doctor Activa 707

Liquid activated charcoal – Activa 707 – is made of natural activated charcoal, carbon, calcium, natural minerals and substances for prevention of mosquitos, which are from nature. It is safe enough to dose as being permitted as a food additive, while releasing beneficial energy and far-infrared rays. It penetrates concrete surface and prevents toxics and dusts from walls by causing chemical responses with cement ingredients, so it has an excellent functional paint to prevent mosquitoes, bacteria and fungus and purify air.



Product name	Activa 707 – Liquid cham charcoal		Note
usage	First coat for building inside		
Package	Water-based, matt, black, liquidation		
Main ingredients	Bamboo activated charcoal, oak, carbon, calcium, de-ionized water, anion stone, prevention of mosutoes		
To be applied	Indoor concrete, plaster board (wall, ceiling and floor), cement mortar and etc.		
Application equipment	Brush, roller, spray and etc.		
Diluent	Below 5% of de-ionized water (in case of using a spray) 10% (ratio to volume)	Caution: when you pour more water, the function can be lower.	
Recommended number of painting	More than 1 time (more effective after 2~3 times' painting)		
Recommended painting area	70m² / ㉔ (for two times' painting)		
Solid content (%)	About 33%		
Deodorization rate (%)	98% (after 120 minutes)	Measurement after 120minutes of pouring	
Release rate of far-infrared rays (7~20μm)	0.913		
Number of anions	1,228 ( ION / cc )		
Drying time	30minutes' fast drying (temperature 20℃ / humidity 30%) 1 hour' s slow drying (temperature 20℃)		
Finishing work time	After 24 hours / solid drying (temperature 20℃ / humidity 30%)		
Volume	20kg, 10kg, 5kg		
Expiration date	1 year after opening (5~25℃, stored in dry, cold and dark area)		
How to paint	1. Remove impurities on the surface and repair any breaks or cracks. 2. Dilute the paint appropriately. Pain it with brush, water roller, spray and etc.		DIY product – Everybody can easily paint.
Note	1. It can be more effective if you use air permeable finishing materials. 2. In case of stirring, use stirrer or similar equipment for more than 3 minutes. 3. Avoid painting at a relative humidity of 80% or a temperature of below 10℃.		

Product volume Activa 5kg Activa 10kg Activa 20kg  
For ceilings, walls and floors – water %

No harmful substances and 5 main heavy metals / colon bacillus · botryomycosis / antibacterial test / appropriate number of anions – 1,228 /  
Test of absorption of nuclear waste

Ingredient safety test / release of atopy symptoms / stimulation of metabolism / prevention of fungus germs / prevention of mosquitoes / excellent durability



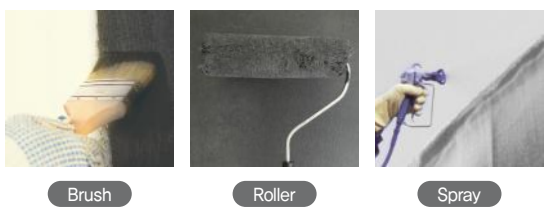
# You can do it easily – charcoal paint (Zero-VOC)

You can paint wall papers or normal paint after cham charcoal painting work.  
Same effects are released when carrying out wall paper or paint works.

- ① Clean the surface and completely dry it.
- ② When you need to dilute it, please use de-ionized water or vaporized water within the ratio of 5%.
- ③ Mix it completely with a stirrer or blender.
- ④ Paint it evenly with a brush, roller or spray.
- ⑤ After 24hours' drying time, carrying out the final material work.

\* when painting after removing the previous wall paper: remove the floated wall paper and paint thinly for the first painting and paint thickly for the second painting for stronger effects.

TIP: The wall paper can be floated but it will be attached well after drying.



Previous wall (plastering, plaster board)	Activa work	Non woven fabrics	Wall paper & paint (wood, tile and sheet)

Internal treatment system			
	2times' painting on the clean surface Recommended painting area: 70 / 20kg (for two times' painting)		Storage: if not opened in the meantime, 5 years after the first opening (5~25℃, stored in dry, cold and dark area)
	Roller (water-based) /airless (squeeze pumping)		Finishing materials before water-based and matt
	2 hours' drying (temperature 20℃ / humidity 60%) Timely drying (temperature 20℃) Finishing material work time: after 24 hours Solid drying (temperature 20℃ / humidity 60%)		Indoor concrete (wall, ceiling and floor) plaster board, wood, steel, cement mortar and etc
	When dilute: stir the liquid and add vaporized / de-ionized water upto 50% (recommend not to dilute)		Water-based, black, matt, liquidation

## Test results of Korea Farinfrared Association – Certification for non-5 main harmful substances

- Issue number KFC-115
- Sample name Activa 707, liquid cham charcoal paint

Completion of test against 5 main heavy metals

(mg/kg)

Sample name/ sample item	Pb	As	Cd	Cr6+	Hg
Activa 707 liquid cham charcoal paint	Not detected	Not detected	Not detected	Not detected	Not detected



## Korea Farinfrared Association – measurement of anion release

- Test method KFA – FI – 1042
- Test sample 100 x 150mm
  - Use charged particle measurement equipment, indoor temperature 22°C, humidity 38%, Tested under the condition of anion water 104/cc in the air, And measured released anions from the subject and prescribed as the number of anion per unit area
- Purpose quality management

Anion per cc between 1100~1300

(mg/kg)

Sample name/ sample item	Anion (ION /cc)
Activa 707 (liquid cham charcoal paint)	Not detected



## Korea Farinfrared Association– measurement of indoor air

- Test method KFA – FI – 1004
- Tested gas name ammonia
- Gas density measurement gas detecting tube
- Purpose quality management

Sample name: Activa 707 liquid cham charcoal

Completion of test against 5 main heavy metals

Completion of test against 5 main heavy metals (mg/kg)

Test items	Process time	blank density (ppm)	sample density(ppm)	sample density(%)
Deodorization test	Early stage	500	500	—
	30	490	75	84
	60	480	50	89
	90	460	40	91
	120	450	35	92

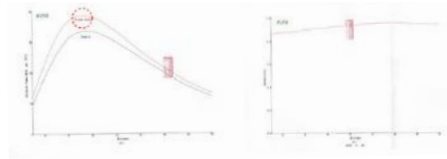




## Korea Farinfrared Association – measured release rate of far-infrared rays

- **Test method** KFA – FI – 1005
- **Tested gas name** tested at a temperature of 37°C T-RS [measurement results compared to BLACK BODY with ectrometer]
- **Attached** attachment
- **Purpose** quality management

Sample name: Activa 707, liquid cham charcoal paint



Measurement of radioactivity rate

Measurement of radioactivity rate 10m closer from inside of wall paper (mg/kg)

Radioactivity rate (5~20μm)	Released energy(W/μm, 37°C)
0.921	$3.55 \times 10^2$

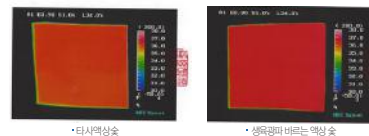


## Korea Farinfrared Association – measurement of release rate of far-infrared ray

- **Test method** KFA – FI – 1006

The test was carried out at an indoor temperature of 23°C and a humidity of 30% with an infrared thermal vision and released radioactivity energy was prescribed in a way of video and temperature data

Sample name: Activa 707, painting liquid cham charcoal



Comparison with other charcoal paints

(mg/kg)

Sample test/item	Measurement of infrared thermal vision
Activa 707 (liquid cham charcoal paint)	Refer to picture 1 and 2



## Korea Farinfrared Association – colon bacillus and antibacterial test

- **Test method** KFA – FI – 1002
- **Blank** Tested without adding samples.  
The number of germs are calculated after multiplying diluting value

The number of germs are calculated after multiplying diluting value



Completion of colon bacillus and antibacterial test

Sample item	Sample classification	Early stage density (CFU/ml)	Density after 24 hours (CFU/ml)	Decrease rate of germs (%)
Antibacterial test against staphylococcus	Blank	$3.4 \times 10$	$6.8 \times 10$	—
	Activa 707 (liquid charcoal paint)		$4.1 \times 10$	94.0



# ACTIVA 707

ENVIRONMENTAL FUNCTIONAL CHARCOAL PAINT

The clean air is a necessity for 100 years' healthy life.

## — Activa 707 study case —





Nobody can choose the air that they breathe  
If you want to live 100 years' healthy life, it is a necessity to have  
quality air of your residential area. To live in the forest ACTIVA707



Activa 707 is painted on walls, floors and ceilings before carrying out wall paper and floor works

## Work process to make you breathe the air of forest near your walls

Activa 707, having microparticle of nano unit, is made of environment-friendly liquid-activated charcoal—and prevents us from sick house syndrome, various toxic substances and radon until the building life is finished.

### 01 Measurement in advance



- Removal of moisture and drying on the surface
- Understanding of site environment in advance

### 02 First painting work



- Isolation from cement dusts
- Anion, far infrared ray, sterilization and disinfection
- Blocking electromagnetic wave and supply of minerals

### 03 First painting work



- Decomposition of harmful substances in cement
- Removal of harmful substances, air purification and humidity control

### 04 Finishing material work



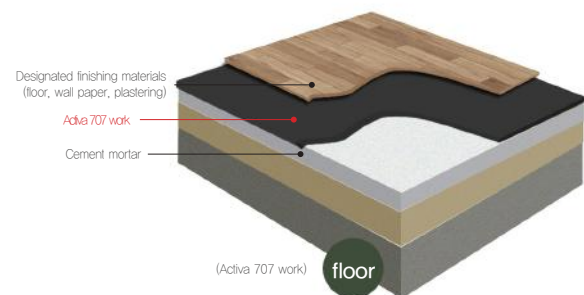
### 06 Maintenance



- Attachment of quality-guaranteed emblem



- Issue of quality-assurance certification



## Cham gil Co, Ltd, Activa 707 application



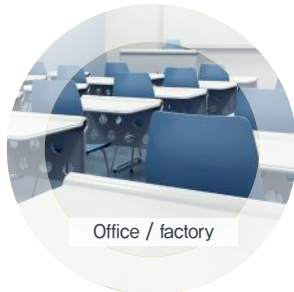
Residential area/remodeling



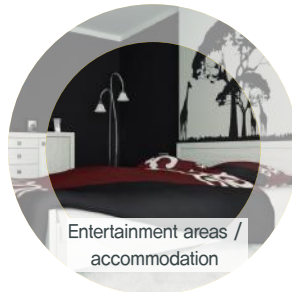
Kindergarten and nursing home



Sterilized room / hospital



Office / factory



Entertainment areas / accommodation



Food / restaurant

“As a Chinese herb doctor, I actually use charcoal as a medicine and I am quite surprised by the effects. Charcoal is good for liver diseases, liver cancer, all cancer, backache and pains on arms and shoulders”  
Allergy and atopic skin diseases, which are known as untreatable, can be treated with charcoal and it is also good for removing toxins, improving reproductive system and insomnia.

Kim HanSung (former professor of Oriental Medicine, Kyunghee University)  
From the book “miracle of charcoal”

## Please contact us if...

- Do you want to sell your apartment earlier?
- Are you worried about unsold apartments?
- Do you have carrying out environment-friendly house interior?
- Are you worried about kids' room/library/study room/patient room/atopy symptoms/pregnant women/the aged/ asthma and respiratory disease?
- Do you plan to move to a newly built house?
- Do you have a plan to carry out interior work/build houses or high-end villas?

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