

Through and Through...

Change your life for the better from
Aqua Cleaner,
Air Cleaner,
Activated Carbon.



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3AC

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Aqua Cleaner, Air Cleaner, Activated Carbon.



Activated Carbon

Our impregnated activated carbon is made by adding metal, metallic salt, or organic matter to activated carbon with high specific surface area and high purity to enhance chemical activity. In addition, our impregnated activated carbon can selectively remove TARGET GAS through the neutralization reaction, chemical reaction, and catalytic reaction.

Air Cleaner

We manufacture pre-filters that remove large particles, medium filters for specific functionality, deodorizing filters that remove various gases, and HEPA filters that remove ultrafine dust.

Aqua Cleaner

Our water filter is made by extrusion to filter out chlorine, particulate matter and heavy metals contained in water. We use verified raw materials that is not harmful to any kinds.

Partners



Be Original.

History

- 2007** - Established 3AC Corporation
- 2008** - Samsung Electronics China subsidiary export
- 2009** - COWAY filter delivery
- 2011** - Established 3AC 1st factory (Hwaseong)
 - Established an affiliated research institute
- 2013** - Awarded the 1 Million Dollar Export Tower on the 50th Trade Day
 - Established Thailand corporation THAILAND 3AC
- 2014** - Confirmed as a technology innovation company (INNO-BIZ)
- 2015** - Designated as an excellent environmental industry in Korea
 - Gyeonggi-do Promising Small and Medium Business Certification
- 2016** - Established Chinese corporation SUZHOU 3AC
 - Selected as a leading industrial convergence company
- 2017** - Established 3AC 2nd factory (Jeongeup)
 - Established 3AC THAILAND new factory in Thailand
- 2018** - Korea Win-Win Growth Company Best Partner Award
 - Signed a contract to supply filters to GE APPLIANCES in the US
- 2019** - Received the Prime Minister's Commendation for Venture Startup Promotion
- 2020** - Awarded the 5 Million Dollar Export Tower on the 56th Trade Day
 - AMWAY air purifier filter delivery
 - Samsung Electronics air purifier EMS contract (3AC Thailand corporation)
 - 3AC Co., Ltd. 1st factory (Pyeongtaek) Expansion and relocation
- 2021** - Signed EMS contract with Samsung Electronics
 - Thailand Corporation 3AC THAILAND factory expansion
 - Relocation of company-affiliated research center to Yong-in
- 2022** - Signed a contract with Samsung Electronics for refrigerator water filter parts
 - Awarded the 10 Million Dollar Export Tower on the 59th Trade Day
 - 3AC 2nd Factory (Jeongeup) 3rd Factory Expansion



About US

Through and Through...

3AC CO., LTD.

Today, when the importance of eco-friendly industries is being emphasized due to industrial development and increased interest in the environment, environmental control technology has a great impact on all areas, including air environment, water quality environment, and waste.

We strive to develop technologies and products that pursue clean air, clean water, and a pleasant environment by reflecting consumer needs.



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6. **SUZHOU 3AC CO.,LTD**
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3AC Research & Development Center

The 3AC R&D Center was established in 2011 with the goal of realizing clean water, clean air and a pleasant environment. We are making efforts to improve indoor air quality by researching new adsorbents and developing filtration materials.

In addition, we have established an industry-academic cooperation system with many universities and research institutes in Korea to jointly research new technologies for the future.

Patent

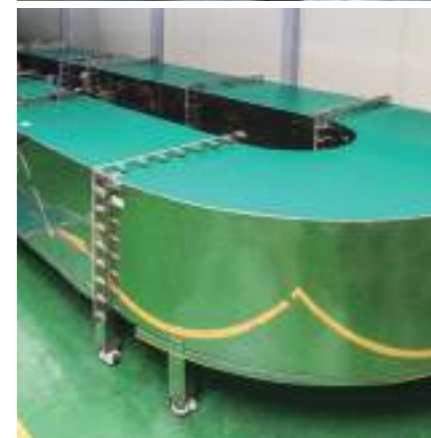
- Korea Patent Registration : 55
(including Design : 9, Trademark : 3)
- Trademark Registration : 3
- Foreign Patent Registration (including PCT) : 4



Standard Test Facilities

| Classification | Equipment | Measurement | Note | Country |
|-------------------------|--|---|-------------|---------|
| Standard Method (Air) | JEM 1467 | Deodorization | 1 m³ | Japan |
| | SPS-KACA 002-132 | Particulate CADR, Harmful gas removal efficiency | 1, 8, 30 m³ | Korea |
| | GB/T 18001-2015 | Particulate CADR, Gas CADR & CCM | 3, 30 m³ | China |
| | ASHERE 52.2-2017 | Pressure loss of PSE, Merv | Wind Tunnel | USA |
| | DIN EN1822-5_2009 | HEPA filter dust collection efficiency | Wind Tunnel | EU |
| | KS C 9325 / KS B 6311 | Filter pressure loss, Flow rate | Wind Tunnel | Korea |
| Standard Method (Water) | Enzyme-linked immunospecific assay | Removal rate of Antigen | - | - |
| | NSF Standard 42 | Chlorine, particle removal rate | - | USA |
| | Drinking water management (Performance Test) | Chlorine, amount of water purification, chromaticity, turbidity, iron, hardness | - | Korea |

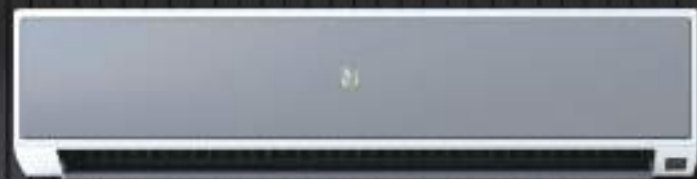
| Classification | Equipment | Measurement |
|--------------------------------------|-----------------------------------|---|
| Measuring Equipment (Air Solution) | FT-IR for gas | Formaldehyde, ammonia, acetic acid, toluene, etc. |
| | Formaldehyde Meter | Formaldehyde |
| | Formaldehyde Analyzer | Formaldehyde |
| | Nox Analyzer | NO ₂ , NO |
| | SOx Analyzer | SO ₂ |
| | TVOC | TOVC |
| | GC/PDD, GC/FID | Trimethylamine, methyl mercaptan |
| | O ₃ Analyzer | Ozone |
| | Particle Meter | Particle |
| | BE | Specific surface area |
| Measuring Equipment (Water Solution) | Microspectro-photometer | Absorbance |
| | Water particle Counter | Particle |
| | Hardness Meter | Water quality hardness |
| | Water colorimetric meter | Water quality chromaticity |
| | Turbidity and chlorine meter | Water quality turbidity and chlorine |
| | Iron meter | Water quality iron concentration measurement |
| | Multi-purpose water quality meter | pH, TDS, Temperature |



Establishment of Research and Development Network

Establishment of joint development agreements and industry-academic cooperation systems with Yonsei University, Sungkyunkwan University, Inha University, Ajou University, and Pohang University of Science and Technology for new material development and technological innovation.

Establishment of an industry-research cooperation system with Korea Institute of Industrial Technology, Korea Construction & Living Environment Testing Research Institute, Korea Apparel Testing & Research Institute, Gyeonggi TP, Gyeongbuk TP, etc., which have leading technologies for product development for the future, establishment of product reliability, and sharing of research results.



Air Conditioner

The air conditioner filter removes large particles such as airborne dust and hair.



Drying Machine

The drying machine filter removes foreign substances and fine dust attached to clothes during washing and drying.



Water Purifier

The water purifier filter removes chlorine, foreign substances, and heavy metals to provide reliable and drinkable water.



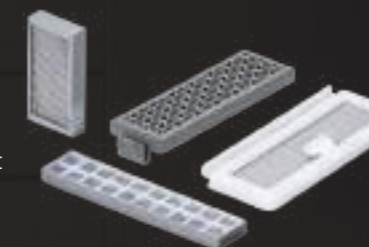
Air Purifier

The air purifier deodorizing filter purifies the indoor air by adsorbing various harmful gases.



Refrigerator

Refrigerator filters use functional catalysts to maintain excellent odor removal efficiency even at low temperatures.

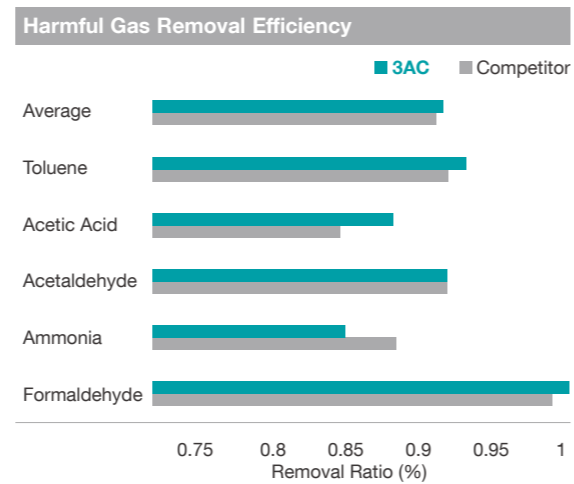


DEODORIZING FILTER

Deodorizing filter removes odors and harmful gases (formaldehyde, ammonia, toluene, etc.) using high-performance activated carbon developed by our technology. Deodorizing filter includes filters for air conditioners and air purifiers that purify indoor air, and refrigerator filters that can remove odors even at low temperatures.

| Hazardous Gas Removal Efficiency | 3AC | Competitor | Charges |
|----------------------------------|-------|------------|---------|
| Formaldehyde | 99% | 98% | 355ml |
| Ammonia | 86% | 89% | 355ml |
| Acetaldehyde | 92% | 92% | 355ml |
| Acetic Acid | 89% | 86% | 355ml |
| Toluene | 93% | 92% | 355ml |
| Average | 91.8% | 91.4% | 355ml |

| Experimental Method |
|--|
| 8 Rube Chambers (According to SPS-KACA002-132) |
| Samsung Virus Doctor |



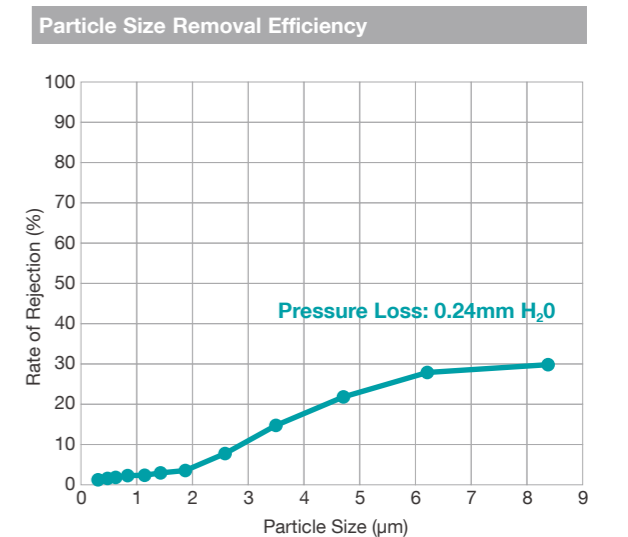
PRE-FILTER

The pre-filter is a pre-processing dust collection filter widely used in air conditioners, air purifiers, and industrial air conditioning facilities. Microfiber, which is manufactured by fusing the intersection of yarns about 1/3 the thickness of hair, has low pressure loss and excellent durability, so it can effectively remove dust as well as yellow dust (over 300µm).

Product Line & Equipment

| No. | M/C Name | Spec (Ton) | M/C Q'ty |
|-----|-----------|------------|----------|
| 1 | Injection | 130 | 1 |
| 2 | Injection | 170 | 3 |
| 3 | Injection | 250 | 1 |
| 4 | Injection | 350 | 2 |
| 5 | Injection | 380 | 4 |
| 6 | Injection | 580 | 1 |
| 7 | Injection | 680 | 1 |

| No. | Test Chamber | Analyzer | Set |
|-----|--------------|----------|----------------------------|
| | ASHRAE 52.2 | OPC-HCT | 3AC Micro Fiber Pre-filter |





HEPA FILTER

Developed for the purpose of removing radioactive particles in the air, it is a high-performance dust collection filter that removes ultra-fine dust. The removal performance is different for each applied fabric and ranges from E10 (removal of 85%) to H14 (removal of 99.995%). (Based on particle 0.3µm)

Test Conditions and Results

| Conditions | Results | Test Contents | Results |
|------------------------|---------|--|-------------|
| U/D Ratio | 1 | Differential Pressure(mm H ₂ O) | 4.07 |
| Aerosol Type | NaCl | Filter Media Face Velocity (m/s) | 1 |
| Volume Flow Rate (CMH) | 413 | Particle Size (µm) | 0.3 |
| Temperture (°C) | 23.6 | Penetration Efficiency (%) | 0.1 |
| Relative Humidity (%) | 47 | Collection Efficiency (%) | 99.9 |

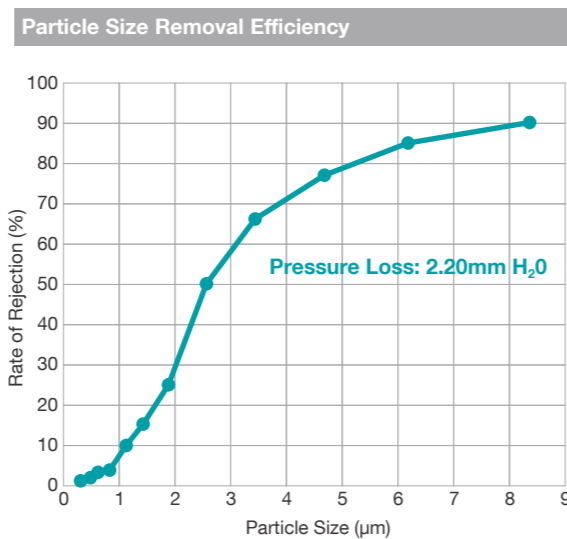
Data

| Particle Size (µm) | Concentration Before Filter (#/cm ²) | Concentration After Filter (#/cm ²) | Collection Efficiency (%) |
|--------------------|--|---|---------------------------|
| 0.3 | 24605 | 37 | 99.8 |
| 0.3 | 24393 | 19 | 99.9 |
| 0.3 | 26435 | 18 | 99.9 |
| 0.3 | 20586 | 15 | 99.9 |
| 0.3 | 25383 | 28 | 99.9 |
| 0.3 | 20906 | 13 | 99.9 |

MEDIUM FILTER

It has low pressure loss and can obtain a constant air volume over the entire area, so it is used for pre-treatment of HEPA filter or as a main filter for air conditioning system. Functions such as antibacterial, antiviral, and antiallergic can be applied by applying functional materials.

| Specifications | |
|----------------|---------------------------------------|
| Fabric | Non-wooven |
| Frame | Paper |
| Adhesive | Hot melt |
| Extra Features | Antibacteria, Anti-virus, Antiallergy |

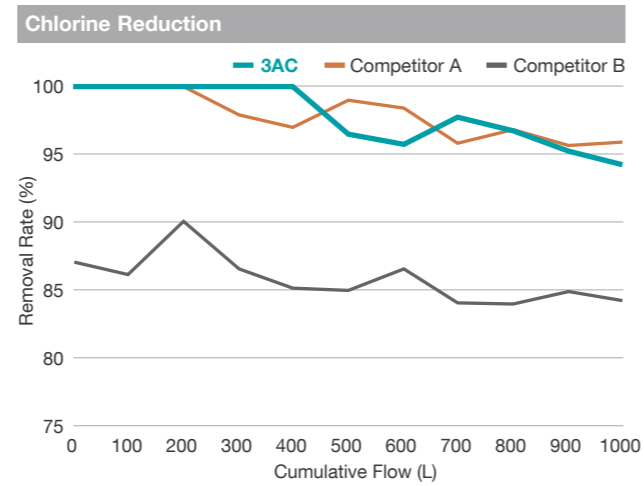


99.9%
HEPA Filter Collection Efficiency

WATER PURIFICATION

It is a filter for water purification developed and manufactured with our technology. It is harmless to the human body by using materials whose safety has been proven. The 3AC water filter purifies chlorine, heavy metals, odors, etc., and it can remove particles such as organic/inorganic substances contained in water.

| Specifications | |
|----------------------|---|
| Capacity | ~ 1,000 gallons (3,785 liters) |
| Maximum Usage Life | 6 months |
| Particulate | 5um |
| Operating Conditions | Temperature 33 - 100 °F (4.4 - 37.8 °C) |
| | Pressure 20 - 125 PSI |
| | Flow Rate 0.5 GPM (1.9 LPM) |



INDUSTRIAL & HVAC FILTERS

Filter for Semiconductor Clean Room

This is a chemical filter applied to clean rooms for semiconductors and displays. It helps to maintain a clean environment and improve productivity by effectively removing natural gases that cause defects.

Industrial Process Filters

It is a deodorizing filter for air conditioning using adsorbents such as impregnated activated carbon. Various types of adsorbents can be applied, and it is possible to remove certain gases.



ACTIVATED CARBON

It is widely used in air purifier, air conditioner, and refrigerators as an adsorbent that removes harmful gases and odors. (Patent No. 10-1648551)

| Item | Impregnated Activated Carbon | | | |
|--------------------------------------|------------------------------|-----------|-----------|-----------|
| Type | Coal, Coconut | | | |
| For Air Purifier (Various) | Measurement (size) | | | |
| | 20/40 | 30/60 | 2 Ø | 3 Ø |
| BET (m ² /g) | Above 650 | Above 650 | Above 650 | Above 650 |
| PH | 5 ~ 9 | 5 ~ 9 | 5 ~ 9 | 5 ~ 9 |
| Hardness | Below 97 | Below 97 | Below 97 | Below 97 |
| Moisture | Below 3% | Below 3% | Below 3% | Below 3% |

| Item | Impregnated Activated Carbon | | | |
|--------------------------------------|------------------------------|-----------|-----------|-----------|
| Type | Coal, Coconut | | | |
| For Air Purifier (Various) | Measurement (size) | | | |
| | 20/40 | 30/60 | 2 Ø | 3 Ø |
| BET (m ² /g) | Above 750 | Above 750 | Above 750 | Above 750 |
| PH | 4 ~ 7 | 4 ~ 7 | 4 ~ 7 | 4 ~ 7 |
| Hardness | Above 97 | Above 97 | Above 97 | Above 97 |
| Moisture | Below 3% | Below 3% | Below 3% | Below 3% |

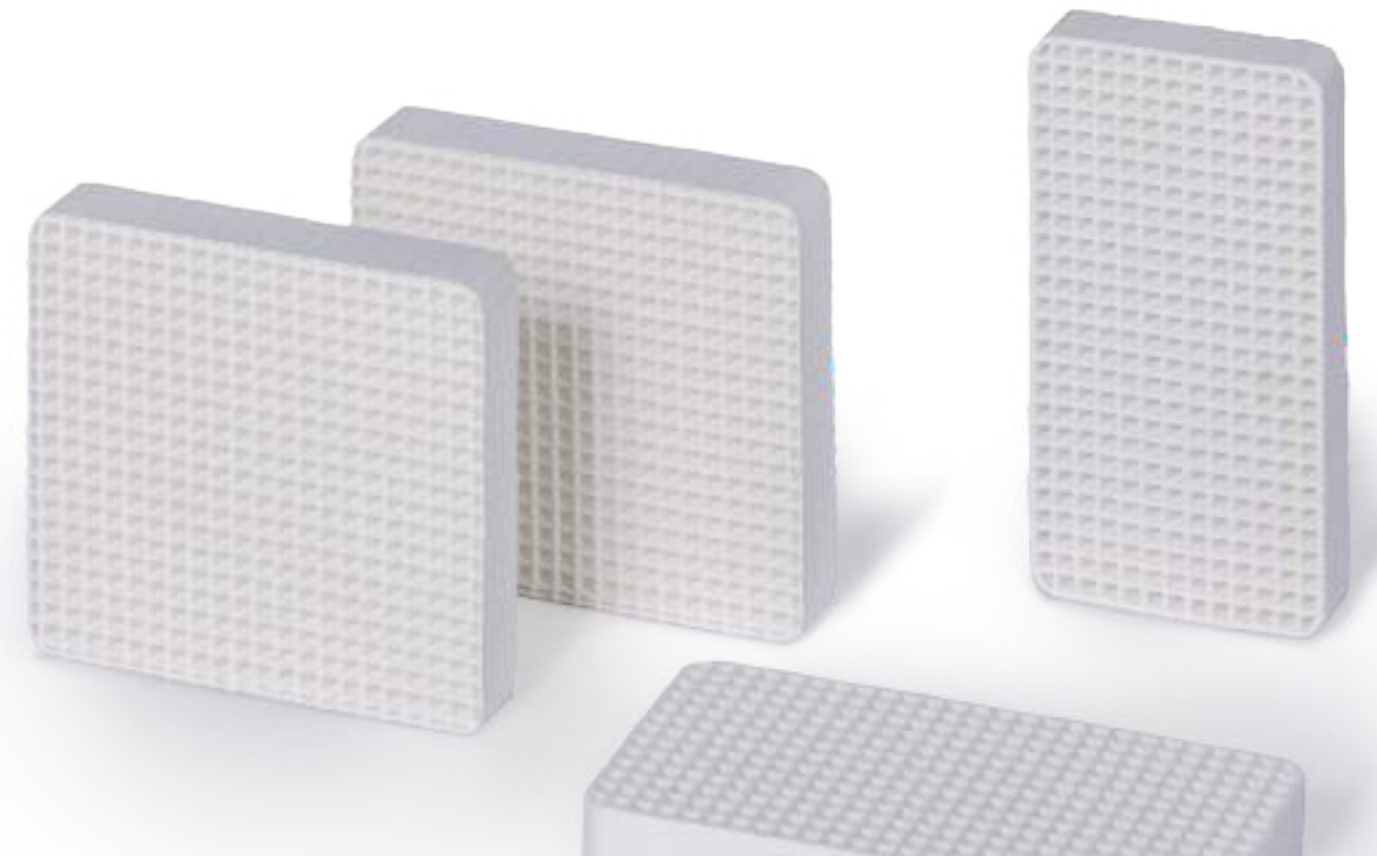
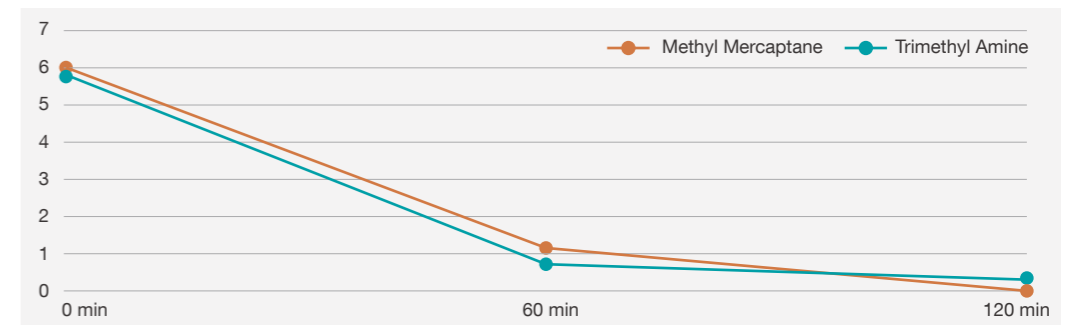
PHOTO CATALYST

When light is reacted to titanium dioxide (TiO₂) fine particles, it generates active oxygen by ultraviolet rays. The redox reaction of active oxygen causes decomposition of organic matter, sterilization, and antifouling effect.

* Titanium dioxide (TiO₂) is chemically stable and has high safety to the human body.

| Sample Name | Gas | Spec (TonASDDSA) | | | Deodorizing Efficiency (%) |
|-------------|-------------------|------------------|--------|---------|----------------------------|
| | | 0 min | 60 min | 120 min | |
| 3AC | Methyl Mercaptane | 6.4 | 1.2 | 0 | 100 |
| | Trimethyl Amine | 6.2 | 0.8 | 0.3 | 95.2 |

| | |
|-------------|------------------------------------|
| Filter Size | 110 x 50 mm |
| Test Method | 1m ³ CHAMBER, LED 3 pkg |
| Measurement | Detector Tube |



ICE PACK



-5°C Ice Pack

Main Components

- Food additive
- Water

Specifications

- Composition comprised by food additive
- Direct drain under running water
- Higher cold preservation compared to regular ice packs
- Low and long phase change temperature (Low latent heat. -10 ~ -5 °C)
- Low volume increase during freezing that takes less space in the storage container

-11°C Ice Pack

Main Components

- PCM of AMIDE compound

Specifications

- It is nitrogenous manure substance that needs to be diluted 1/25 times in water and sprayed directly on the leaves
- Direct drain under running water
- Higher cold preservation compared to regular ice packs
- Low and long phase change temperature (Excellent cold preservation. -11 °C)

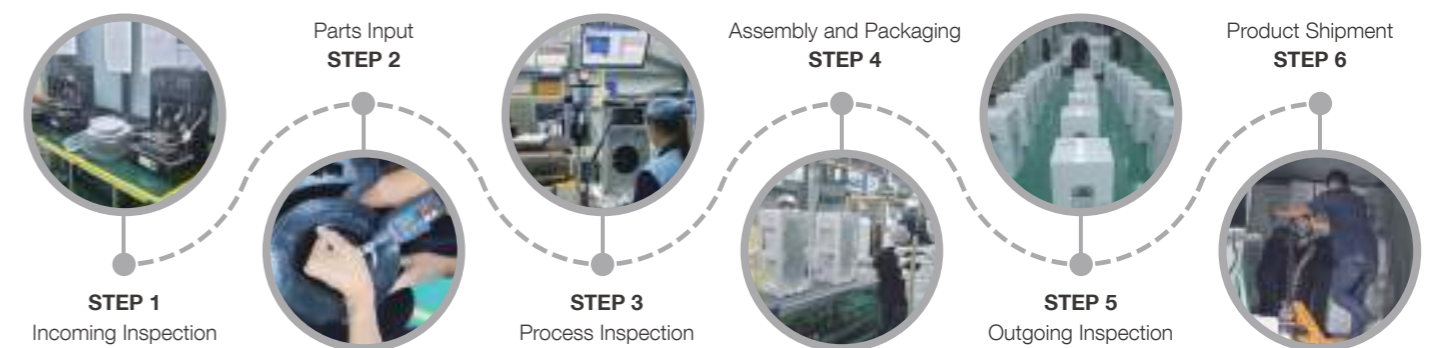
EMS (Electronic Manufacturing Services)

ODM (Original Development Manufacturing)

3AC is a manufacturer specializing in filters, core parts of air purifiers, and has price competitiveness in manufacturing finished products. Annual production capacity (450,000 units per year & EMS/ODM site : 17,000 M², factory site : 5,460 M²)



EMS Production Process



3AC Products Line up

Dust Collection Filter



Pre-Filter for Air Purifier (Pleat)



Medium Filter for Air Purifier



HEPA Filter for Air Purifier



Pre-Filter for Air Conditioner (System)



Pre-filter for Air Conditioner



Pre-filter for Washing / Drying Machine

Deodorizing Filter



Deodorizing Filter for Air Purifier (Honey Comb)



Deodorizing Filter for Air Purifier (Cylindrical)



Deodorizing Filter for Air Purifier (Multi-Pleat)



Deodorizing Filter for Air Purifier (Polyurethane)



Deodorizing Filter for Air Conditioner (Alumina Ball)



Deodorizing Filter for Air Conditioner (Corrugated)



Deodorizing Filter for Drying Machine (Photocatalyst)



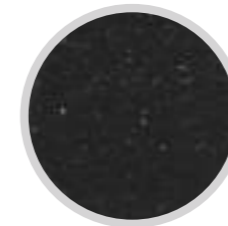
Deodorizing Filter for Refrigerator (Sheet)

Water Filter



Carbon Block Filter

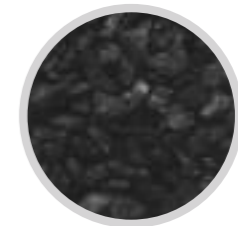
Catalyst



Powdered Activated Carbon



Assembled Activated Carbon



Crushed Activated Carbon



Alumina Photocatalyst

Ice Pack



-5 °C



-11 °C

Finished Goods

