DAIKIN

MC-0916-B

Air purifier

Get clean air with Daikin

STREAMER

Technology.

MC70TVMM

2005
Award of
The Institute of Electrostatics Japan
Winner

Awarded for the development of a household use air purifier that uses " direct streamer discharge."

Daikin Streamer Discharge Tech eliminates harmful substances

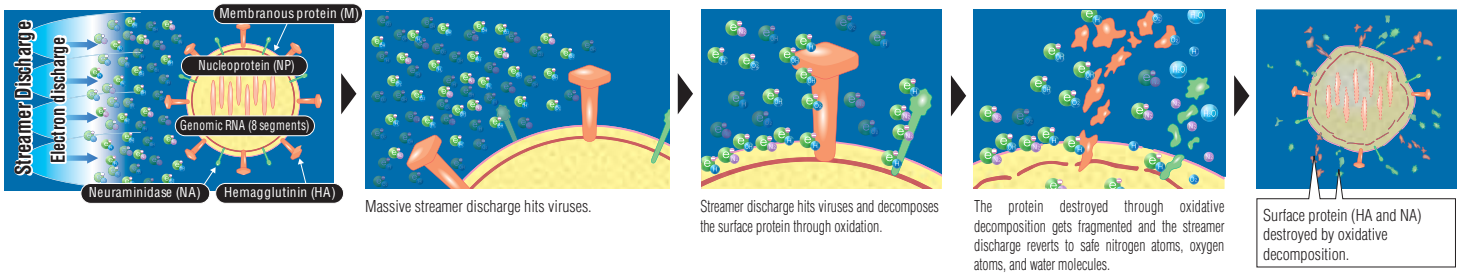
What is the Daikin Streamer Discharge Technology ?

"Streamer Discharge" is a type of plasma discharge in which high speed electrons capable of oxidative decomposition are generated. It has the ability to eliminate bacteria and mould as well as hazardous chemical substances and allergens, etc. Compared to standard plasma discharge (glow discharge), the discharge range of Daikin's Streamer Discharge is wider, which makes electrons easier to collide with oxygen and nitrogen in the air. This enables high speed electrons to be generated three dimensionally over a wide area, which results in an oxidative decomposition speed that is over 1000 times greater with the same electrical power. Daikin's Streamer Discharge technology has proven successful in stably generating high speed electrons, a feat that has been considered difficult up to now.

How the decomposition mechanism of Streamer Discharge Technology works.

If it were thermal energy, the decomposition strength would be comparable to a heat of approximately 100,000°C*1.

*1 Comparison of oxidation decomposition. This does not mean temperature will become high.



Massive streamer discharge hits viruses.

Streamer discharge hits viruses and decomposes the surface protein through oxidation.

The protein destroyed through oxidative decomposition gets fragmented and the streamer discharge reverts to safe nitrogen atoms, oxygen atoms, and water molecules.

Surface protein (HA and NA) destroyed by oxidative decomposition.

A clean technology that's recognised by public institutions★ in Japan and abroad.

■ Tests that prove the effectiveness of the Streamer Technology

★ Following experiments were practised by third parties based on Daikin Industries Ltd's request.

Target of experiment	★Public institutions (Testing organization)	Test method
Virus	National Institute of Hygiene and Epidemiology (Vietnam)	CPE and TCID50
	Kitasato Research Center of Environmental Sciences	CPE and TCID50
	Kobe University Graduate School	ELISA method
	Yamagata University	Scanning electron microscope
Bacteria	Japan Food Research Laboratories	PCR method
	The Jikei University	CFU
Mould	Japan Food Research Laboratories	Pour plate culture method

Target of experiment		★Public institutions (Testing organization)	Test method
Allergens	Pollen based allergens	Wakayama Medical University	ELISA method
	Allergens from animate beings		
	Fungal allergens		
	Flour		
Hazardous chemical substances	Adjuvant (DEP)	Yamagata University	ELISA method
	Adjuvant (VOC)	Tohoku Bunka Gakuen University	Damping technique
	Adjuvant inhibiting effect	Wakayama Medical University, National institute for Environmental Studies	ELISA method
	Formaldehyde	Tohoku Bunka Gakuen University	Constant generation method

Viruses and bacteria that have been proven to be deactivated by Streamer Technology

- Influenza virus (type A, H1N1)
- Highly virulent avian influenza virus (type A, H5N1)
- Bacillus coli, O-157
- Norovirus
- Staphylococcus aureus
- Pseudomonas aeruginosa
- Tuberculosis bacteria
- Toxins (enterotoxins)

Allergens that have been proven to be decomposed by Streamer Technology

- Fungal allergens: sooty moulds, aspergillus, eurotium, aspergillus niger, fusarium, penicillium
- Pollen based allergens: cedar pollen, alder pollen, birch pollen, Japanese cypress pollen, pencil cedar pollen, bald cypress pollen, mugwort pollen, orchard grass pollen, ragwood pollen, sweet vernal grass pollen, timothy grass pollen, fleawort pollen, Japanese beech
- Allergens from animate beings: house dust mite [dermatophagoides pteronyssinus] (droppings and dead mites), house dust mite [dermatophagoides farinae] (droppings and dead mites), American cockroach (droppings), German cockroach (droppings), flea (droppings), dog epidermis (dander), cat epidermis (dander), hamster epidermis (dander)
- Other: wheat flour

*2 Test method: constant generation method; Test room: 22 to 24 m^3; Temperature: 23 ±3°C; Humidity: 50 ±20%; Ventilation condition: When concentration of 0.2 ppm is continually emanated, a removal capacity of 0.08 ppm is maintained at 36 m^3/h, which is within the guideline of the Ministry of Health, Labour and Welfare (Japan). (This equates to the ventilation capacity of an approximately 65 m^3 room.)

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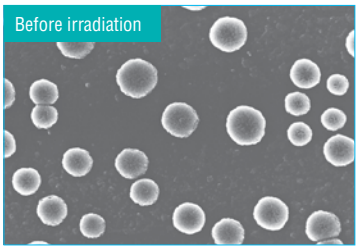
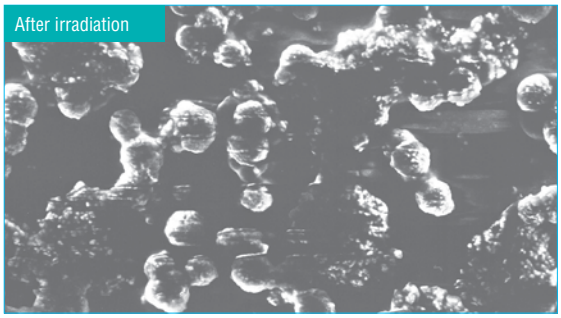
Virus

Influenza virus (type A, H1N1)



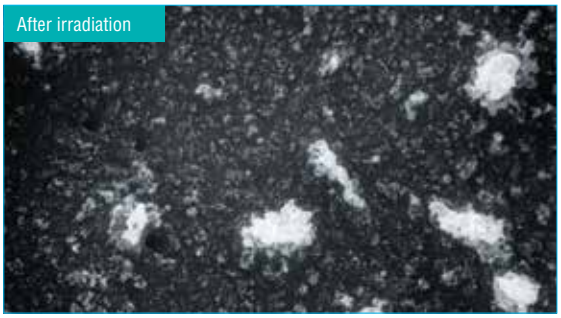
Viruses were placed on the electrode of the streamer discharge unit and then photographed through an electron microscope after being irradiated. (Testing organization: Yamagata University)



Fungal allergens

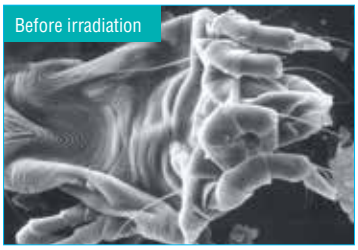
Eurotium cell

Mould was placed on the electrode of the streamer discharge unit and then photographed through an electron microscope after being irradiated. (Testing organization: Wakayama Medical University)

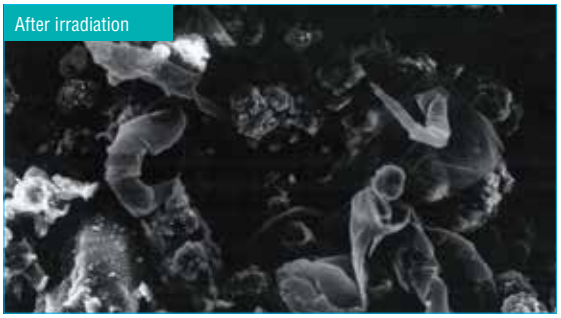


Allergens from animate beings

House dust mite [dermatophagoides farina] body



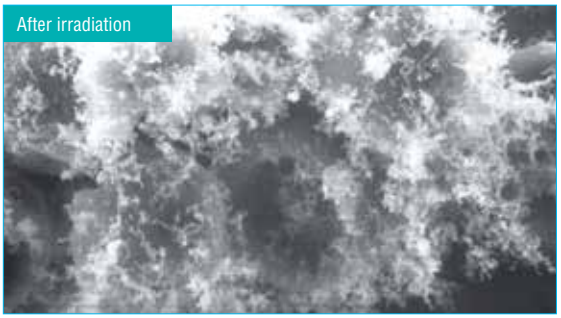
Dead mites were placed on the electrode of the streamer discharge unit and then photographed through an electron microscope after being irradiated. (Testing organization: Wakayama Medical University)



Pollen based allergens

Cedar pollen

Pollen was placed on the electrode of the streamer discharge unit and then photographed through an electron microscope after being irradiated. (Testing organization: Wakayama Medical University)



Hazardous chemical substances that have been proven to be removed by Streamer Technology

- Formaldehyde[*2]
- Diesel exhaust particulates (DEP)
- Hazardous chemical substances in exhaust gas: NOx, tetrachlorethylene, benzene, trichloroethylene, dichloroethane, dichloromethane, chloroform
- VOC type hazardous chemical substances: iso-butanol, hexane, styrene, nonanoic acid, trimethyl benzene, xylene, naphthalene, ethyl benzene, toluene, ethyl acetate

This product can be used to improve the quality of the air by removing airborne hazardous chemical substances, allergens, mould, bacteria, and viruses, etc. However, this product is not intended for the creation of sterile environments or for the prevention pathogen infections.

This description relates to the Streamer Technology devised by Daikin, but not to this Air Purifier. Test results from use of the Streamer Technology are generated according to prescribed test methods conducted by Daikin. Although the Streamer Technology is contained within this Air Purifier, this does not mean that precisely the same results will be experienced using this Air Purifier. Actual results may differ depending on the conditions of product installation and use of the actual product, etc.

This product is not a medical device, medical treatment device or a therapeutic good.
This product is not intended to have any therapeutic use or to be used for the diagnosis, treatment, relief or prevention of illness.
If you have a health concern or are not feeling well, please consult a health care professional.

Daikin's air purifying technology dec and removes[*1] *dust, odours, bacteria, and other undesirable airborne comp*

Six-layer powerful decomposition and removal configuration

1 High-speed electrons are discharged that enable decomposition and removal.
Streamer Discharge unit

2 Dust is captured. Bacteria and allergens are removed[*2].
Prefilter

3 Dust and pollen are electrically charged and then sent to the filter.
Plasma ionizer

4 Dust and pollen are adsorbed by the electrically charged filter.
Electrostatic dust collection filter
(front of pleated dust collection filter)

5 Odours and viruses are kept under control by photocatalyst[*3].
Titanium apatite photocatalytic filter
(back of pleated dust collection filter)

Effective against nasty things like these:

- mould, bacteria, viruses
- mould, pet, cigarette and other odours
- Hazardous chemical substances such as diesel particulates and exhaust gas
- Allergens such as pollen and mites
- House dust and pet hairs

*1 Measurement method: Antibacterial test/
bacterial removal test; Testing organization: Japan Food research Laboratories; Test result certificate number 203120769-001; Result of experiment: 99.99% removal/
mould removal test; Testing organization: Japan Food research Laboratories; Test result certificate 204041635-001; Result of experiment: 99.9% removal/
Virus removal test; Testing organization: Kitasato Research Center for Environmental Science; Test result certificate 21_0026 (issued by same organization); Result of experiment: 99.9% removal.
These results will differ from actual location where product will be used.

*2 Conditions of experiment: Allergens were irradiated by Streamer Discharge and the breakdown of protein in the allergens was verified using either the ELISA method, cataphoresis, or an electron microscope. (Joint research with Wakayama medical University.)

*3 Measurement method: Virus removal test; Testing organization: Kitasato Research Center for Environmental Science; Test result certificate 21_0026 (issued by same organization); Result of experiment: 99.9% removal.

*4 Test method: constant generation method; Test room: 22 to 24 m^3; Temperature: 23 ±3°C; Humidity: 50 ±20%; Ventilation condition: When concentration of 0.2 ppm is continually emanated, a removal capacity of 0.08 ppm is maintained at 36 m^3/h, which is within the guideline of the Ministry of Health, Labour and Welfare (Japan). (This equates to the ventilation capacity of an approximately 65 m^3 room.)

omposes

onents.

6 Formaldehyde*4 and odours are decomposed.

Photocatalyst and streamer deodorising catalyst

Photocatalyst and streamer deodorising catalyst

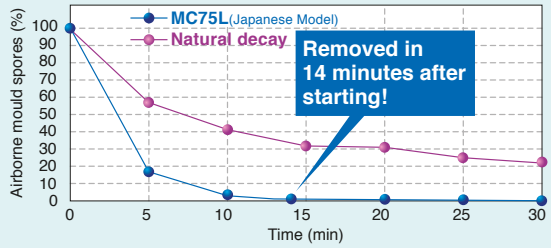
Replacement is unnecessary because odours are decomposed.

Photocatalyst and deodorising catalyst decompose formaldehyde and odours.

Bacteria removal — *Removal of airborne mould spores*

Mould spores are thoroughly adsorbed by the Titanium Apatite Photocatalytic filter after being drawn in by the strong airflow. The photocatalyst and streamer deodorising catalyst with Streamer Discharge are then able to powerfully remove them.

Mould spore removal ability

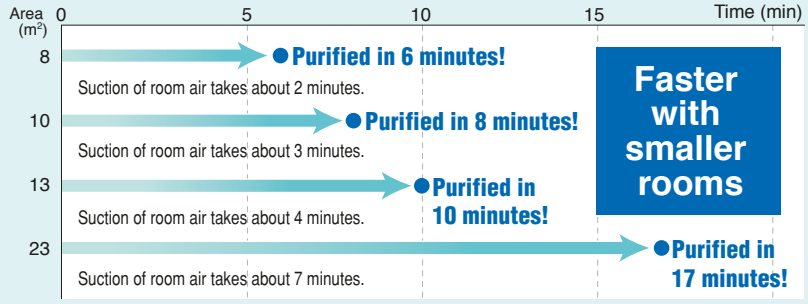


Room area: Approx. 12 m²
Test method: Air purifier placed in premises.
Air in premises is circulated while mould spores are dispersed.
The quantity of airborne mould is measured after some time has elapsed.
Measurement method: Air sampler method;
Test report certificate 1057015008-01; Testing organization: Japan Food research Laboratories;
Test device: MC75L (Equivalent model for Japanese market)

Powerful suction — *Quick and thorough purification*

Powerful **7.0** m³/min. airflow

Guideline purification times (approx 46 m² floor space)



Dust raised while doing housework is also quickly captured.

Turbo mode

We recommend the ultra powerful turbo mode with its strong airflow to quickly clean away bothersome dust and odours at times such as when returning home, entertaining guests, or when housecleaning.

Please see page 5 for details. (Results based on testing carried out in accordance with the Japan Electrical Manufacturers ,Association standard JEM1467.) Calculation of air suction time is based on room size (area x 2.4 m height /airflow (7.0 m³/min.).

Deodorisation — *Decomposition of odour sources with Streamer Discharge*

The components that cause foul odours are adsorbed by the filter and then decomposed by the Streamer Discharge. The ability to adsorb odours is continually renewed so replacement of the deodorising catalyst is unnecessary.

About the dust collection and deodorising capacity of air purifiers:
- Not all harmful substances in cigarette smoke (carbon monoxide, etc.) can be removed.
- Not all odour components that emanate continuously (building material odours and pet odours, etc.) can be removed.

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Specifications

Air Purifier

MC70TVMM

STREAMER

Max. airflow 7.0 m³/min.

With wireless remote controller

Approximate room cleaning time: **12m² / 9 min.**[*1]

Maximum room capacity: **Approx. 46m²**

Applicable room area	Up to 46 m² (12 m² purified in approx. 9 minutes)[*1]				
Power supply	1 phase 220-240 / 220-230 V (50/60 Hz), Cabtire code				
Color	White				
Dimensions (mm)	576 (H) x 403 (W) x 241 (D)				
Weight (kg)	8.5				
Convenient functions	Off timer, Child proof lock, brightness adjustment				
Mode	Quiet	Low	Normal	High	Turbo
Airflow (m³/min.)	0.91	2.2	3.5	4.8	7.0
Power consumption (W)	7.0	10.0	16.0	26.0	65.0
Sound pressure (dB)	16.0	24.0	32.0	39.0	48.0
Sold separately: Replacement pleated filter	KAC017A4E Set of 5				
Pollutants that can be collected, reduced, and decomposed	Pollen (cedar pollen, alder pollen, birch pollen, Japanese cypress pollen, pencil cedar pollen, bald cypress pollen, mugwort pollen, orchard grass pollen, ragwood pollen, sweet vernal grass pollen, timothy grass pollen, fleawort pollen, and Japanese beech) / Indoor air pollutants (formaldehyde, toluene, xylene, and styrene) / Diesel exhaust particulates (DEP) / City exhaust gas (trichloroethylene, benzene, tetrachlorethylene, dichloromethane, and chloroform, dichloroethane) / NOx / iso-butanol, ethyl acetate, hexane, nonanoic acid, trimethyl benzene, ethyl benzene, and styrene, naphthalene				
	Moulds (sooty moulds, aspergillus, eurotium, aspergillus niger, fusarium, and penicillium) / Cockroaches (American cockroach (droppings), German cockroach (droppings)) / Fleas (droppings) / House dust mites (dermatophagoides pteronyssinus (droppings and dead mites) and dermatophagoides farinae (droppings and dead mites)) / Dog epidermis (dander) / Cat epidermis (dander) / Hamster epidermis (dander) / Viruses / Wheat flour				
Pollutants that can be collected/pollutants that can be deodorised	Dust / Pet hair / Asian dust / Body odour / Ammonia / Garbage odour / Cooking odour / Cigarette smoke odour / Pet odour / Mould odour				

*1 Calculation based on testing method of the Japan Electrical Manufacturers ,Association standard JEM1467.

Dust collection speed (guideline)

	46.0m²	44.6m²	41.3m²	38.0m²	36.3m²	33.0m²	29.7m²	26.4m²	23.0m²	19.8m²	16.5m²	13.2m²	10.0m²
MC70TVMM ～46.0m²	30 minutes	29 minutes	27 minutes	26 minutes	25 minutes	23 minutes	21 minutes	19 minutes	17 minutes	15 minutes	13 minutes	10 minutes	8 minutes

(Results based on testing carried out in accordance with the Japan Electrical Manufacturers, Association standard JEM1467.)

● Conditions used to calculate purification time

About floor space used

As one of the items stipulated in the Japan Electrical Manufacturers, Association standard JEM1467, floor space is determined as the size of a room that can be purified of dirty air*2 with a dust concentration of 1.25 mg/m³ in 30 minutes up to a cleanliness of 0.15 mg/m³, as defined in the Building Sanitation Management Law, under the condition of one natural ventilation (1 time/hour).

Calculation of purification time

Using the above stipulation, the purification time for each unit of area is calculated as the time it takes to go from a dust concentration of 1.25 mg/m³ to 0.15 mg/m³, in other words, the time it takes to reach 12% of the initial concentration.

*2 Dirty refers to things such as odours, bacteria, and pollen. Things such as stains and oil spots cannot be removed.

*Economical: no need to buy filters for 10 years*4.*

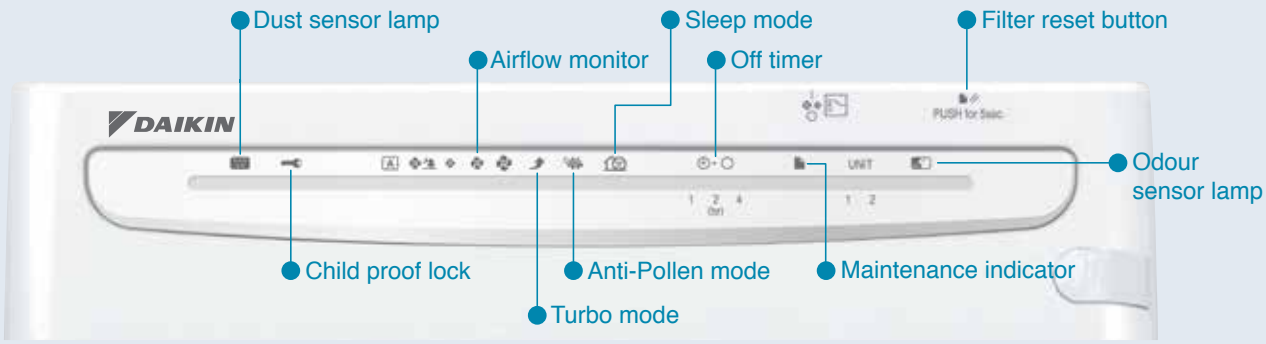
Operation is economical with the five included filters. You won't need to buy filters for 10 years, because each filter lasts 2 years.

Easy filter storage

Unused filters can be stowed neatly inside the unit.

*4 Based on ten cigarettes being smoked per day. (Calculation based on testing method of Japan Electrical Manufacturers Association JEM1467 standard.) The unit is unable to decompose all harmful substances such as carbon monoxide found in cigarette smoke. Two years as the replacement period for the pleated filter is given as a guide. This may differ depending on how and where the product is used. The replacement period will become shorter if it is used in a place where there are a lot of pollutants in the air.

User friendly design that's easy to read and easy to use



Feature list

Titanium apatite photocatalytic filter

Bacteria and viruses are thoroughly adsorbed by the titanium apatite and then removed by the photocatylist.

Streamer Discharge

This function quickly decomposes odours and allergens, etc., with high speed electrons that have a powerful ability to oxidize.

Streamer deodorising catalyst

Odours and allergens, etc., are adsorbed on the catalyst and then decomposed by the power of the streamer.

Plasma dust collection

Dust and pollen are collected by charging them positively while charging the electrostatic dust collection filter negatively.

Pleated dust collection filter

Very economical, the air purifier comes standard with 5 replacement filters. You will not have to buy filters for 10 years (1 filter can be used for 2 years).

Dust and odour sensor lamps

Dust and odours are dectected and shown in 3 easy-to-understand colours to indicate the level.

Power saving inverter

The inverter saves energy by efficiently controlling the rotational speed of the motor in order to reduce power consumption.

Energy saving automatic operation

The air purifier is run, without wasteful operation, only in accordance with the level of pollutants in the air, which is detected by the sensor.

Anti-Pollen Mode

Switching between normal and low airflow to create a gentle turbulence, pollen is caught before it lands on the floor.

Sleep mode

Operation automatically switches only between "Quiet" and "Low" modes in accordance with how polluted the air is. This is recommended for times such as when sleeping.

Turbo mode

This convenient mode provides high-power operation to quickly clean the air in a room when, for example, you come home or when you have guests over.

Prefilter

This catches large dust particles. Bacteria and allergens are removed by the streamer and filter.

Off timer

Operation stop time can be set.

Child proof lock

This can be used to prevent small children from mishandling the air purifier.

Brightness adjustment

The brightness of the indicator panel lamp can be adjusted.

Auto-Restart after Power Failure

The air purifier memorises the settings for mode, airflow, etc., and automatically returns to them when power is restored after a power failure.

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Warning

- Daikin products are manufactured for export to numerous countries throughout the world. Prior to purchase, please confirm with your local authorised importer, distributor and/or retailer whether this product conforms to the applicable standards, and is suitable for use, in the region where the product will be used. This statement does not purport to exclude, restrict or modify the application of any local legislation.
- Use only those parts and accessories supplied or specified by Daikin.
- Read the User's Manual carefully before using this product. The User's Manual provides important safety instructions and warnings. Be sure to follow these instructions and warnings.

If you have any enquiries, please contact your local importer, distributor and/or retailer.

www.daikin.com.my

DAIKIN MALAYSIA SALES & SERVICE SDN. BHD. (109719-M)

(Formerly known as Group Associated (C & L) Sdn. Bhd.)

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