



BENEFITS OF TREATING FAN COIL CONDENSATION TRAYS: MITIGATING RISKS AND ENHANCING EFFICIENCY

Understanding maintenance for
improved performance and safety

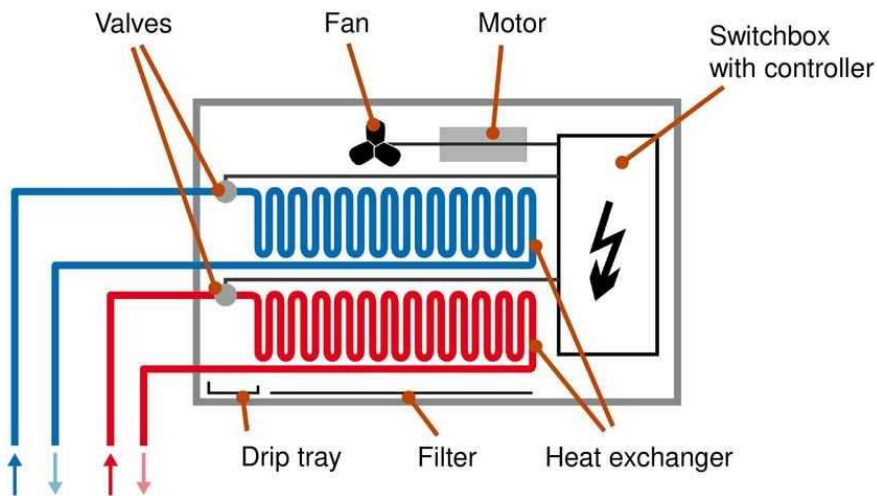
AGENDA OVERVIEW

- Understanding Fan Coil Units and Condensation Trays
 - Bacterial Risks and Prevention
 - Corrosion Risks and Mitigation
 - Improving System Efficiency and Longevity
 - Public Health Risks of Untreated Fan Coil Units
 - How Bimaks Fan Coil Tablets Can Help
 - Conclusion
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UNDERSTANDING FAN COIL UNITS AND CONDENSATION TRAYS

BASIC COMPONENTS AND FUNCTIONALITY OF FAN COIL UNITS



Key Components

Fan coil units include essential components such as a fan, heat exchanger, filter and condensation tray, each playing a crucial role in operation.

Air Circulation

These units circulate air over the heat exchanger, allowing for effective heating or cooling, improving indoor climate control.

Moisture Management

The condensation tray is designed to manage moisture, ensuring that the air remains comfortable and preventing excess humidity.



ROLE AND IMPORTANCE OF CONDENSATION TRAYS

Moisture Management

Condensation trays effectively trap excess moisture, preventing water damage and maintaining optimal indoor air quality.

Air Quality Maintenance

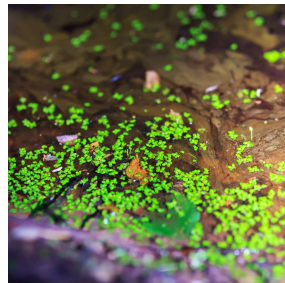
By managing moisture, condensation trays contribute significantly to maintaining a healthy indoor environment and preventing mold growth.

COMMON ISSUES WITH UNTREATED CONDENSATION TRAYS



Water Pooling

Untreated condensation trays can accumulate water, leading to pooling that can cause serious maintenance issues.



Bacteria Growth

Water pooling creates an ideal environment for bacteria to thrive, which can pose health risks.



Corrosion Risks

Increased moisture from pooling water can lead to corrosion, damaging systems and reducing their lifespan.

BACTERIAL RISKS AND PREVENTION

HOW FAN COIL SYSTEMS CONTRIBUTE TO RISK

Stagnant Water Issues

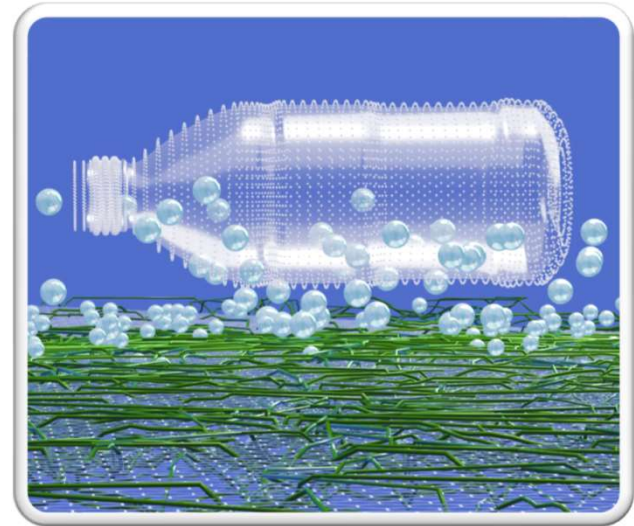
Untreated fan coil systems can accumulate stagnant water, creating an ideal environment for biofilm growth.

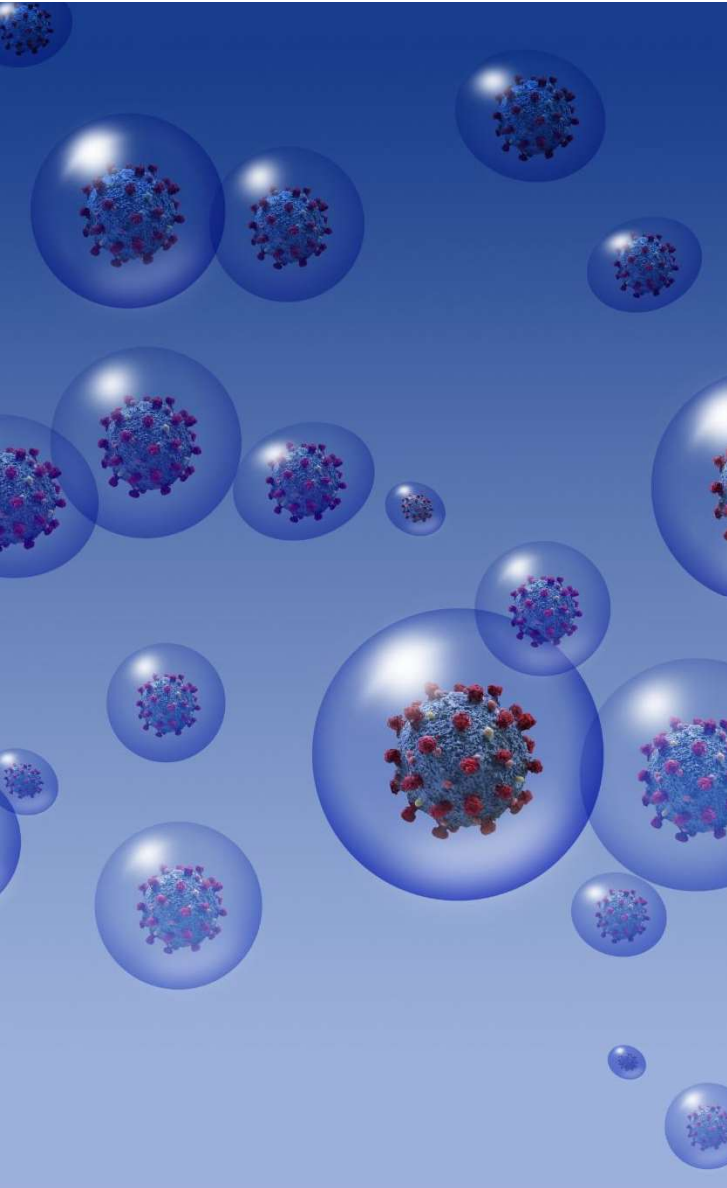
Biofilm Formation

Biofilm can form on surfaces within the fan coil systems, making it difficult to eliminate and posing health risks.

Legionella Multiplication

Legionella bacteria can thrive in biofilm, multiplying and becoming aerosolized, which is dangerous for building occupants.





TYPES OF BACTERIA FOUND IN CONDENSATION TRAYS

Legionella Bacteria

Legionella is a dangerous bacteria that can thrive in condensation trays, posing serious health risks such as Legionnaires' disease.

Harmful Microorganisms

Other harmful microorganisms (mold, mildew, fungi and other bacteria) also thrive in damp conditions of condensation trays, leading to potential health hazards.

Importance of Identification

Identifying these bacteria is crucial for effective treatment and prevention of health risks associated with contamination.

WHAT IS LEGIONNAIRES' DISEASE?

Cause of Legionnaires' Disease

Legionnaires' disease is caused by inhaling water droplets that are contaminated with *Legionella* bacteria, which thrive in warm water environments.

Common Symptoms

Symptoms of Legionnaires' disease include cough, shortness of breath, fever, and muscle aches, which can vary in severity.

Risk for Vulnerable Groups

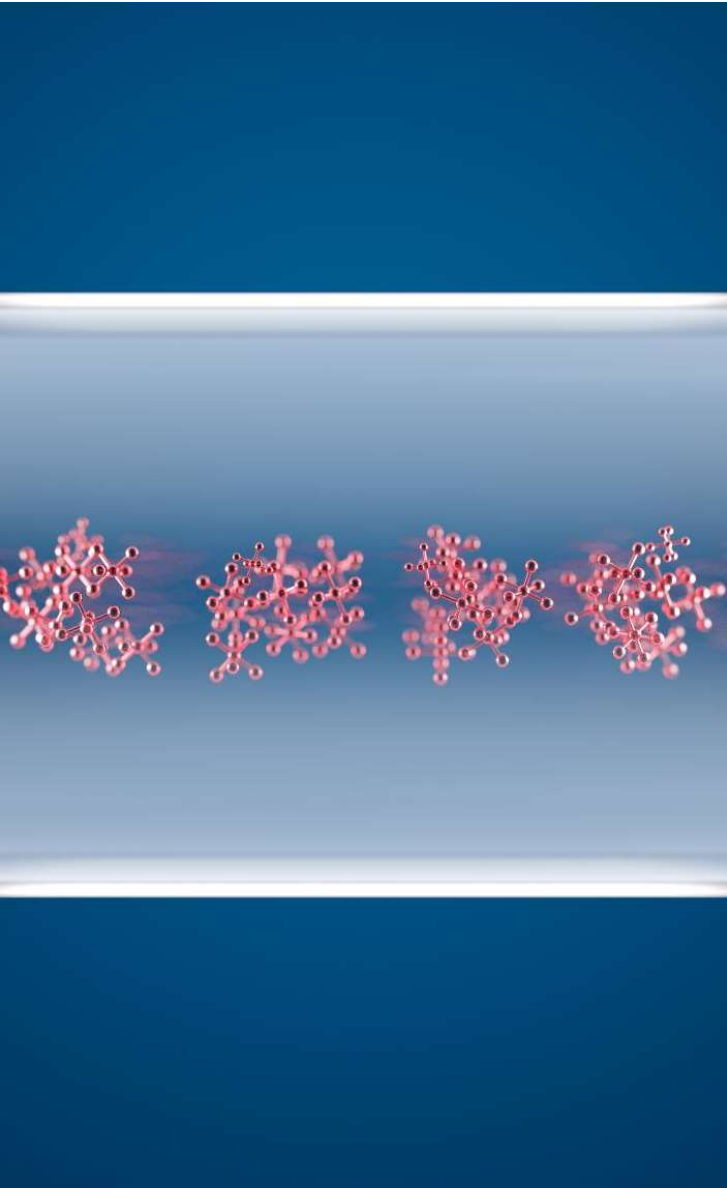
Individuals with weakened immune systems are at a higher risk for severe illness from Legionnaires' disease, necessitating caution.



LEGIONELLA OUTBREAK THROUGH FAN COIL UNITS

Beijing, China	June 1997	Office building	Air Conditioning Condensate	<p>In Beijing, An outbreak of upper respiratory tract infection occurred among employees in an office building. This office building is a newly completed building with a fully enclosed design and poor ventilation. An investigation into the air conditioning system of the building revealed that there are ~30 fan coil units in the ceiling on each floor of the building. The fresh air transmitted from the central air conditioning to each floor is blown through the fan coil units and cooled by chilled water coils before entering each room. During the process, the condensate in the condensate tray was blown into the office with fresh air in the form of aerosols, causing infection of people and resulting in 108 patients falling ill.</p>	<p>A case of air-conditioning system causing mixed infections of <i>L. pneumophila</i> multocida in a collective unit population</p>
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Reference – Front Public Health 2024 July 26 **A review of *Legionella* transmission risk in built environments: sources, regulations, sampling, and detection**



HEALTH RISKS ASSOCIATED WITH BACTERIAL GROWTH

Respiratory Infections

Bacterial growth in condensation trays can lead to respiratory infections, posing a significant health risk to occupants.

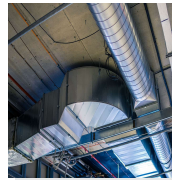
Health Issues

In addition to respiratory infections, bacterial growth can contribute to various health issues, affecting overall well-being.

Safe Environment Maintenance

Understanding the risks associated with bacterial growth is essential for maintaining a safe indoor environment in buildings.

METHODS FOR TREATING AND PREVENTING BACTERIAL CONTAMINATION



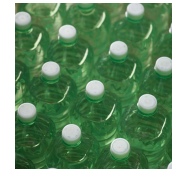
Correct Design

Correct design parameters such as fin area vs air flow rate, filtration, condensate pan construction material, size, slope, drain lines, trapping, venting contribute to effective bacterial control in fan coil systems.



Regular Maintenance

Conducting regular maintenance ensures that fan coil systems operate effectively and reduces the risk of Legionella and other bacterial growth.



Chemical Treatment

Chemical treatments, such as Maks Fan Coil Tablets can effectively disinfect and manage bacterial growth in condensation trays, enhancing safety and hygiene.

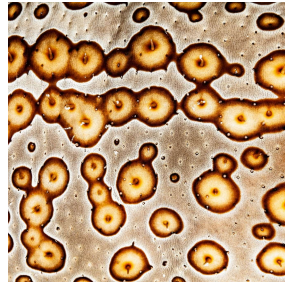


Water Quality Monitoring

Monitoring water quality regularly helps identify contamination early and prevents potential health risks associated with bacteria.

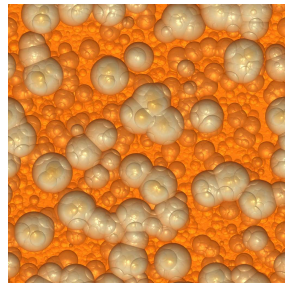
CORROSION RISKS AND MITIGATION

CAUSES OF CORROSION IN CONDENSATION TRAYS



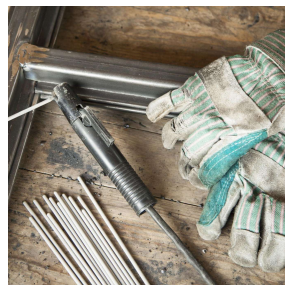
Moisture Accumulation

Moisture accumulation is a primary cause of corrosion, leading to rust and deterioration of materials over time.



Chemical Reactions

Chemical reactions between metals and their environment can accelerate corrosion, especially in harsh conditions. Over reliance on harsh cleaning chemicals can further accelerate corrosion reaction.



Poor Maintenance Practices

Neglecting regular maintenance can cause fan coil systems becoming bacteria harboring environments. The acidic waste of bacteria exacerbate corrosion issues, making it crucial to implement effective maintenance strategies.



IMPACT OF CORROSION ON SYSTEM COMPONENTS

Corrosion Risks

Corrosion can cause significant risks, including leaks and failures in system components, compromising overall system integrity..

Maintenance Planning

Understanding corrosion impacts allows for effective maintenance planning, reducing downtime and enhancing system reliability.



STRATEGIES TO PREVENT AND TREAT CORROSION

Regular Maintenance and treatment

Conducting regular maintenance helps identify early signs of corrosion and bacterial formation and prolongs the life of equipment.

Protective Coatings

Using protective coatings on metal surfaces acts as a barrier against moisture and corrosive agents, significantly reducing corrosion rates.

Proper Drainage

Ensuring proper drainage prevents the accumulation of water, which can lead to corrosion, especially in condensation trays.

IMPROVING SYSTEM EFFICIENCY AND LONGEVITY

EFFECTS OF UNTREATED TRAYS ON SYSTEM EFFICIENCY

System Breakdowns

Neglecting untreated trays can result in system malfunctions and costly breakdowns, affecting overall productivity.

Lower Operational Costs

By investing in regular maintenance, businesses can reduce operational costs associated with costly spills and repairs.

Extended Lifespan

Well-maintained fan coil units have a longer lifespan, which translates to lower replacement costs and increased reliability.



PUBLIC HEALTH RISKS OF UNTREATED FAN COIL UNITS



OVERVIEW OF PUBLIC HEALTH CONCERNS

Respiratory Illnesses

Untreated fan coil units can contribute to respiratory illnesses, affecting overall public health and well-being.

Bacterial Outbreaks

Failure to maintain fan coil units may lead to outbreaks of diseases caused by harmful bacteria, posing serious health risks.

Importance of Maintenance

Regular maintenance of fan coil units is essential to mitigate health risks and ensure safe air quality.



PCBU'S DUTIES TO MITIGATE HEALTH RISKS IN NEW ZEALAND: ENSURING SAFE WORK ENVIRONMENTS

Understanding legal obligations for
workplace safety

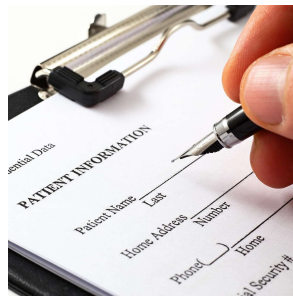
UNDERSTANDING PCBU'S AND THEIR ROLE

DEFINITION AND SCOPE OF A PCBU



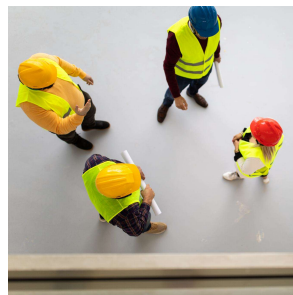
What is a PCBU?

A PCBU, or Person Conducting a Business or Undertaking, refers to individuals or organizations responsible for workplace health and safety.



Legal Framework

The definition of a PCBU is established under New Zealand's Health and Safety at Work Act, ensuring responsibility for workplace safety.



Scope of PCBU Responsibilities

The scope of a PCBU encompasses all aspects of work health and safety, including risk management and employee protection.

MONITORING AND REVIEWING HEALTH RISKS



REGULAR HEALTH RISK MONITORING

Identifying New Hazards

Regular health risk monitoring helps identify emerging hazards that may affect worker safety and health.

Evaluating Control Measures

It is essential to evaluate the effectiveness of existing control measures to ensure ongoing worker safety.

Improving Workplace Safety

Regular monitoring leads to continuous improvement in workplace safety and health outcomes for employees.

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MAKS FAN COIL TABLETS



WHY SHOULD WE USE MAKS FAN COIL TABLETS?

Air conditioner and refrigeration drain pans pose as breeding grounds for slime, sludge and toxic bacteria, all of which may cause major health and maintenance problems such as the life-threatening Legionella.



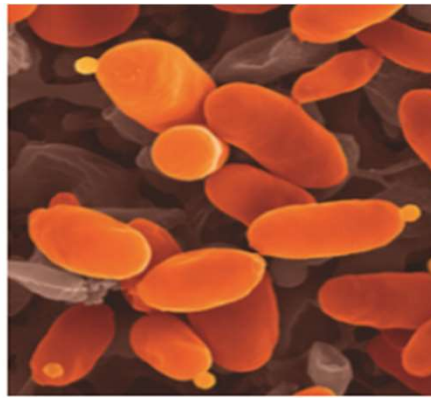
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MAKS FAN COIL TABLETS

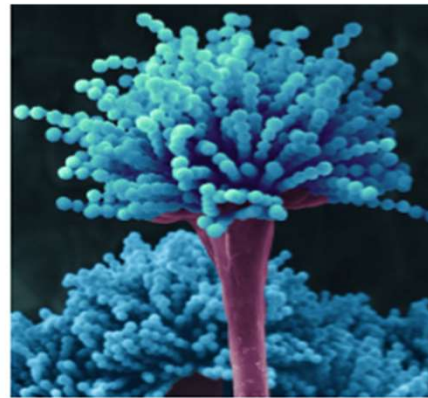
Maks Fan Coil Tablet is a non-oxidizing, broad-spectrum biocide scientifically developed to control slime forming bacteria and other undesired biological growths such as fungi, algae, mildew, legionella, viruses, etc in air conditioning systems



Microbial Candida



Microbial Rhodotorula



Microbial Aspergillus



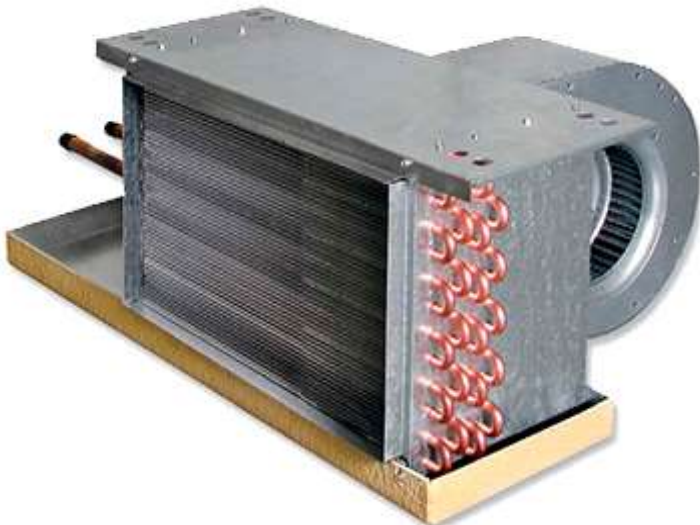
Microbial Legionella

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MAKS FAN COIL TABLETS

PRINCIPAL USES

- Apartment Buildings
- Commercial/Industrial Buildings
- Cruise ships
- Hospitals and Health clubs
- Hotels and motels
- Nursing homes
- Business centers and Shopping centers
- Schools and universities
- Display cabinets, vending machines and cold storage units



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MAKS FAN COIL TABLETS

PRODUCT BENEFITS

- Prevents biological contamination in air conditioning systems and reduces potential health risks
- Removes unpleasant odors
- Reduces maintenance costs
- Reduces the risk of overflowing and damage to furnishings
- Provides extended protection for systems with its slow dissolving structure



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MAKS FAN COIL TABLETS

PRODUCT BENEFITS

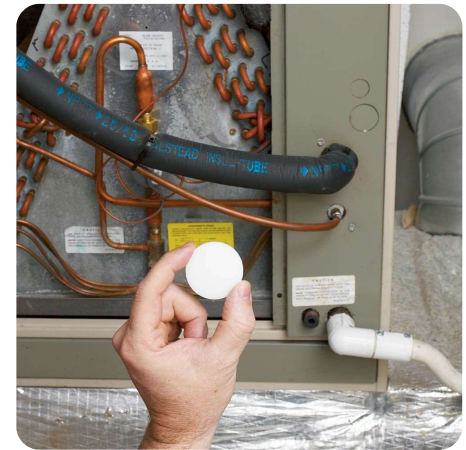
- Easy to use. Simply place tablets in the drip pan and allow to dissolve over time
- Non-toxic
- Cleans scum and other accumulations
- Eliminates plugged drains and pans
- Eliminates corrosion problems in the drip pans due to its neutral pH.



MAKS FAN COIL TABLETS

FEEDING

- Place **MAKS FAN COIL TABLET** in the condensation pan.
- Each tablet lasts 3 to 6 months depending on the hvac operation and the amount of condensate produced.
- Use 1-5 tablets depending on size of system and severity of slime fouling problem.
- Replace the tablets when they are dissolved.



CONCLUSION

Mitigating Bacteria Risks

Regular treatment of condensation trays helps to reduce bacteria growth, ensuring a healthier indoor environment.

Preventing Corrosion

Treating fan coil condensation trays is crucial for preventing corrosion, which can lead to system failure and increased costs.

Enhancing System Efficiency

Regular maintenance and treatment enhance system efficiency, leading to better performance and reduced energy consumption.

Protecting Public Health

By ensuring clean and well-maintained systems, public health is better protected from airborne diseases.