



Moving Towards

100% Ecofriendly Environment

We use Natural Plant Based Formulation which are Certified Non-toxic to do the Cleaning Work on Air Conditioning units within minutes

www.biohydro.com.my







About Us

BioHydro (M) Sdn. Bhd. is a team of professional air conditioning cleaning service provider which have been involved in contributing towards GREEN CLEANING TECHNOLOGY since 2017. Our loyal and experienced team of tradespeople including air conditioning mechanics and project managers helped us to focus on and successfully deliver the key elements of our business, namely air conditioning & refrigeration installation, maintenance and service. We are committed to our customers' satisfaction every step of the way through our knowledge and attention to details.

Biohydro specializes in all aspects of residential, commercial and industrial air conditioning and cooling system. Our work covers many areas from refrigeration piping to gas cooling towers to pumps; we ensure that we get all jobs completed on time, within budget and meeting your exact requirements. We use the latest machinery and equipment as well as adopting modern techniques ensuring that our customers get the best from latest technology.

Biohydro uses certified SIRIM pH7 neutral cleaning agents from the United Kingdom which are environmentally preferred and has been verified to comply with the highest environmental standards. Our aim is to replace the current air-conditioner cleaning industry norms of using HIGHLY TOXIC and CORROSIVE chemical cleaning agents. Biohydro's cleaning solution are certified non-toxic, non-caustic, non-corrosive, non-pathogenic and is biodegradable. It also kills 99.9% of bacteria and fungi in 60 seconds or less.

Our tradespeople are all fully qualified and keep up to date with industry standards and training – giving you complete peace of mind. Our industry and other affiliations include:

- Department of Environment/ Jabatan Alam Sekitar Malaysia
- Lembaga Pembangunan Industri Pembinaan Malaysia (CIDB)
- National Institute of Occupational Safety and Health
- AXA Public Liability Insurance

We believe in promoting regenerative environments and communities by supporting continuous enhancement of health, justice, and prosperity, while maintaining respect for the natural, social, cultural, and historic value of place.



Mission

Our missions are to create healthy homes, workplace and sustainable communities by improving the quality of air that you breath to lead a healthier life.

Vision

To create a better future where all children, families, and individuals are living in healthy homes and sustainable communities.

Values

BioHydro reflect who we are and what we stand for as a company
Customer Commitment: We develop relationship that make a positive difference in our customer lives.
Quality: We deliver outstanding service with premium value to our customers
Personal Accountabilities: We are personally accountable for delivering on our commitments.



SERVICES

Commercial Refrigeration

Chillers

Freezers

All type of Showcase

Residential

Split and Multi split system

Inverter VRV / VRF system

Commercial / Industrial HVAC SYSTEM

Split system

Inverter VRV/VRF System

Precision Environmental Control Air Conditioner

Commercial Package System - Air Cooled Package Unit

Commercial Package System - Water Cooled Package Unit

Air Handling Unit

Commercial Chiller System

Chilled Water System

Preventive Maintenance

Commercial

Industrial

Residential

Planned preventive maintenance is a scheduled task carried out on a regular routine to ensure equipments are in good working condition hence optimizes its efficiency and accuracy. The primary goal of preventive maintenance is to reduce the possibility of equipment breakdown by rectifying the issue before it actually occurs. It is designed to preserve and enhance equipment reliability by replacing worn out components before the end of its lifespan.

Our service technicians will carry out a thorough inspection on the air conditioning system and advise clients accordingly if any part replacement is required. The key objective is to ensure the system operates effectively 24/7 365 days a year.

Key objectives of planned preventive air conditioning maintenance visit:

- Longevity of equipment lifespan
- Money saving and energy efficiency
- Optimising uptime
- Improving staff efficiency, comfort and air quality
- Reduce the risk of breakdowns or replacement cost

BioHydro supports all air conditioning & refrigerator maintenance agreement customer with a comprehensive emergency call out service, as well as technical phone support.

- We offer planned preventive maintenance contract, which includes the following aspects:
 - General maintenance work, detailed inspection, testing and cleaning.
 - Technician's report and recommendations for every site visit.
 - Technical support staff can offer advice and fault diagnosis assistance by phone.
 - Priority scheduling on service and repair calls.

We at Biohydro always believe in the importance of preventive maintenance using the right method. This will eventually reduce equipment downtime and increase the life span of an air conditioning & refrigerator unit.

Panasonic



YORK

MITSUBISHI
HEAVY INDUSTRIES, LTD.

DAIKIN

HITACHI



GOODWAY

REFCO

Commercial HVAC & Refrigeration Retrofits

Are you looking to save energy? If your business has an older air conditioning (HVAC) and refrigeration system that's driving up your energy expenses, you might be considering replacing your equipment. But what if you're not in a great financial position to take on such a large capital expense right now? Or what if you're considering moving your business to a new location in a couple of years? There are situations where replacing your HVAC or refrigeration system to save energy doesn't make financial sense.

Then there is the issue of changing refrigerant regulations: you might be reluctant to invest in an expensive new system right now without knowing for sure which refrigerants will be phased out.

Does that mean you're stuck with those escalating energy costs until you're in a position to replace? Not necessarily. The good news is, there is another way to save energy: Biohydro are specialized in retrofitting your existing HVAC & refrigeration equipment with energy-efficient add-ons.

Retrofitting Can Do More Than Save Energy

Needing to save energy is certainly the biggest reason to consider retrofitting your HVAC & refrigeration equipment. According to a study conducted for the U.S. Department of Energy by Pacific Northwest National Labs, small offices and retail establishments realize an average savings in energy consumption of 35 percent by adding retrofit technologies.

Beyond the need to save energy, there are other benefits of retrofitting your HVAC & refrigeration equipment:

- Get more life from an older HVAC system. In some cases you can extend the life by several years, and delay having to lay out so much capital for a new system.
Put off a long-term commitment to a new refrigerant when you purchase a new system. When you retrofit, you can continue using the old R-22 refrigerant, or upgrade to R-407C or R-134a for just a few years until you're ready to make a longer term decision.
- Improve comfort conditions.
When you retrofit your HVAC & refrigeration equipment, it runs more efficiently, which is why you save energy. Yet you also get the benefit of more consistent temperatures and better-controlled humidity. Depending on the retrofit options you choose, you may even notice reduced noise from the system and less drafts from moving air.
- Fast ROI.
Since retrofitting your equipment involves a fraction of the cost of replacing your equipment, you can achieve a return on your investment in one to three years.
- Options for Retrofitting Your HVAC & refrigeration Equipment
The options available to you for retrofitting will depend on the type of HVAC & refrigeration equipment you have. Chillers and packaged rooftop units (RTUs) are some of the best candidates for retrofitting. Here are some of the technology options you can install to save energy:

RETROFIT OPTIONS FOR CHILLERS:

Replace old screw compressors and semi-hermetic reciprocating compressors with new high-efficiency screw compressors. These new models can greatly decrease the power consumed by the chiller to save energy. There are options for systems with high-condensing temps and low condensing temps.

For air-cooled chillers, you can add condenser fan controls that incorporate floating high pressure controls with variable frequency drive operation. These controls enable the compressor to do less work, so you save energy.

RETROFIT OPTIONS FOR PACKAGED COOLING SYSTEMS:

Air-side economizers. This technology takes advantage of outside air on cooler days to assist in cooling your space, which takes some of the load off the compressor to save energy.

Supply fan speed controls. As your heating and cooling needs vary, these controls adjust the speed of the fans circulating conditioned air in your space. Regulating air movement can also reduce compressor load to save energy.

Demand-controlled ventilation adjusts both the speed of your fans and your intake of outside air based on the carbon dioxide levels in the space.

Cooling capacity controls. For a system that can run the compressor at varying speeds, these controls reduce the load when you don't need the system running at full capacity. You save energy with the compressor running at a lower capacity.



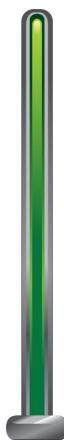


Environmental & Biotechnology

Go Green, Save the Earth

As time goes by, the environment is becoming significantly more polluted and people are trying even harder to keep it green. While overusing an air conditioner and servicing it using chemical can have a negative impact on the environment and also humans health. It's impossible to live in hot weather without air conditioning, but you can reduce the health risk and contribute towards saving the Earth by choosing Biohydro to handle your air conditioner as we use NON CHEMICAL cleaning solution which are 100% eco friendly. This will eventually reduce your carbon footprint and expands the life span of a cooling system, nevertheless enjoying the comforts of refreshingly cool air.

Biohydro uses SIRIM certified pH7 neutral cleaning agents from the United Kingdom which are environmentally preferred and has been verified to comply with the highest environmental standards. Our aim is to replace the current air-conditioner cleaning industry norms of using HIGHLY TOXIC and CORROSIVE chemical cleaning agents. Biohydro's cleaning solution are certified non-toxic, non-caustic, non-corrosive, non pathogenic and is biodegradable. It also kills 99.9% of bacteria and fungi in 60 seconds or less. BioHydro conducts Refrigeration System Evacuation by using techniques, procedures and recovery equipments which are approved by Jabatan Alam Sekitar.



BioHydro Neutral Cleaning Agent

- Non-corrosive on metal surface
- Cooling coil will be free from all contaminants after cleaning
- Prolongs the air conditioner's life-span
- Improves on indoor air quality tremendously minus the harmful effects of chemicals vapour and odour
- 100% biodegradable and will not pollute the water system
- Eco friendly environment



Conventional Cleaning Chemical

- Highly toxic and acidic
- Corrosive on all metal surface
- Cooling coil will erode due to corrosion which can damage the coil and lead to gas leakage
- Reduces air conditioner life-span and higher maintenance cost for long term
- Emits hazardous chemicals vapour and odour that is harmful to your family's health
- Pollutes water system with toxic chemicals

Moving Towards

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to do the Cleaning Work on Air Conditioning units within minutes

SIRIM Test Report



SIRIM Berhad
Industrial Biotechnology Research Centre, Building 18
Tel: 03-55446993/8990
Fax: 03-55446998

TEST REPORT

REPORT NO: R743/18/B19/25-A1 PAGE: 1 of 2

This report is NOT a Quality Assurance Certificate NOR an Approval Permit. This report refers only to samples submitted by the customer to SIRIM Berhad and tested by SIRIM Berhad. This report shall not be reproduced, copied or distributed without the written permission of SIRIM Berhad for advertising purposes by any means or form without written approval from President & CEO of SIRIM Berhad.

Applicant: Pravin Sreekaran

Company: Biophydro (M) Sdn Bhd
No. 6, Jalan Deltama 10K39,
Bandar Puncak,
Pandamaran,
41200 Klang, Selangor Darul Ehsan,
MALAYSIA.

Sample: Solutions from cleaning of air-conditioning unit coil

Reference standard: The samples were collected into plastic container and transported to the laboratory. The samples were put into Tryptone water and serial dilution was done. Each dilution solution was plated onto specific media and incubated at 30 °C - 32 °C for 24 hours for Aerobic Plate Count and at 30°C - 32°C for 5-7 days for Yeast and Mould Count.

Description of Sample: Four (4) samples were supplied by Biophydro (M) Sdn Bhd with the following identification:

1. Sample 1: RO WATER WASH
Appearance: Blackish solution with dark debris
2. Sample 2: BIOPHYDRO Neutral Cleaning Agent
Appearance: Clear solution with dark debris
3. Sample 3: BIOPHYDRO Neutral Cleaning Agent (After WASH)
Appearance: Blackish solution with dark debris
4. Sample 4: FINAL RO WATER WASH
Appearance: Clear solution

(The sampling and testing process was not witnessed by SIRIM)

Date Received: 21 November 2018

Date Test Started: 22 November 2018

Job No.: J743/18

Issue Date: 31 December 2018

* This test report supersedes the previous Test Report No. R743/18/B19/25 dated 4 December 2018 which has been withdrawn and therefore is not valid.

Approved signatures:

(MOHD KUAROL AZWAN AHMAD)
MuMM Sdn Bhd
Analyst
Industrial Biotechnology Research Centre
SIRIM Berhad

(MOHD MAHAYUDIN HUSIN)
MuMM Sdn Bhd
Analyst
Industrial Biotechnology Research Centre
SIRIM Berhad

TEST REPORT

REPORT NO: R743/18/B19/25-A1 PAGE: 2 of 2

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Results:

Table 1: Bacteria, yeast and mould counts of solutions from cleaning of air-conditioning unit coil

Sample No	Marking	Test	Aerobic Plate Count (CFU/mL)	Yeast & Mould Count (CFU/mL)
1.	RO WATER WASH		1.64×10^4	5.75×10^4
2.	SPRAY BIOPHYDRO Neutral Cleaning Agent		7.75×10^4	8.15×10^4
3.	BIOPHYDRO Neutral Cleaning Agent (After WASH)		1.28×10^4	1.34×10^4
4.	FINAL RO WATER WASH		3.65×10^4	1.33×10^4

Table 1

Note:
CFU = Colony Forming Unit

Mohd Kuarol Azwan Ahmad
Researcher
Industrial Biotechnology Research Centre
SIRIM Berhad



Pusat Penyelidikan Teknologi Alam Sekitar
Environmental Technology Research Centre
Building 18, SIRIM Berhad, Selangor Darul Ehsan,
Tel: 03-55446990 / 8990 Fax: 03-55446998 / 8998

RESULTS SUMMARY

Company Name:	Biophydro (M) Sdn. Bhd. (Ms. Pravin Sreekaran)	Your Ref No.:	SIRIM Ref. No.:
Address:	No. 6, Jalan Deltama 10K39, Bandar Puncak, Pandamaran, 41200 Klang, Selangor Tel: 012-6331919	Job No.:	J 226/18
		Date of Issue:	18 December 2018
Request:	Analysis of <i>Daphnia sp.</i> , Acute Immobilization Test of Biophydro Neutral Cleaning Agent.	No. of pages:	2

SAMPLE DESCRIPTION

One (1) solid sample was received from Biophydro (M) Sdn. Bhd. on 20 September 2018 and coded as below:

Sample name	Internal coding	Physical appearance
Biophydro Neutral Cleaning Agent	J 226/18	Yellow liquid

TEST METHOD

- 1) Total solids according to APHA 2540 B.
- 2) Total suspended solids (TSS) according to APHA 2540-D.
- 3) Chemical Oxygen Demand (COD) according to APHA 2205-D, Colorimetric Method.
- 4) Biochemical Oxygen Demand (BOD) according to APHA 2210B (2005), 5 Day BOD Test.
- 5) CODC Guideline for Testing of Chemicals Method 202 (Adopted 13 April 2004), *Daphnia sp.*, Acute Immobilization Test.
- None - not accounted

RESULTS

Refer to page 2.

INFRANCE

(The inferences expressed herein are outside the scope of accreditation.)

The results contained in this report relate only to samples sent to SIRIM Berhad for testing. The report shall not be reproduced or distributed in full without the written approval of SIRIM Berhad.

SIRIM Berhad - Company No. 10000000000
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Tel: 03-55446990 Toll Free: 1-800 88 1000 Fax: 03-55446998
Website: www.sirim.org

Karimah Mohamed
Researcher
Industrial Biotechnology Research Centre
SIRIM Berhad



RESULTS

Table 1: Analysis of water sample collected before cleaning and after cleaning using Biophydo Neutral Cleaning Agent

Parameter	Concentration (mg/L)	
	Before cleaning	After cleaning
Total solid (TS)	1335	97
Total suspended solid (TSS)	760	63
Chemical Oxygen Demand (COD)	2595	9.0
Biochemical Oxygen Demand (BOD)	388	1.1

Table 2: Results of EC50 *Daphnia sp.*, Acute Immobilization Test of Biophydo Neutral Cleaning Agent

Exposure (hr)	EC50 (mg/L)	95% Confidence Limit (mg/L)	Standard Error
24	30	N.A.	N.A.
48	27	(24, 29)	1.3

Note: N.A. not applicable due to data limitation
Refer to Appendix 1: EC50C237/10/10908/13/2018 for details

The EC₅₀ at 48 hours of Biophydo Neutral Cleaning Agent was determined at 27 mg/L and not classified according to the Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) CLASS Regulation 2013.





JSP ADVANCE PTE LTD



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