

ActronAir

*Coil Coat.**That's better. That's Actron.*

Fight corrosion with ActronAir.

We have all heard of corrosion, but its effects are generally not considered when making an air conditioning purchase. Corrosion refers to the negative impact the environment can have on an air conditioner's internal and external heat exchange coils, including salt from sea spray, alkalis, food acids, and general industrial pollution.

Corrosion can drastically reduce an air conditioner's performance and efficiency, shorten life expectancy, and add considerably to every day maintenance and running costs. That's why it's never been more important to consider the available options for additional coil protection.

Introducing ActronAir Coil Coat.

Why is it important to protect against coil corrosion?

Whilst it's generally not considered when making a purchase, the need to protect against the impacts of corrosion is becoming increasingly understood. It is vital to have effective coil protection solutions because this can:

- Reduce maintenance/cleaning costs
- Reduce energy consumption due to corrosion
- Extend product life expectancy by maintaining original condition
- Maintain performance and operational efficiency
- Combat mould and bacteria

That's why ActronAir has developed our Coil Coat option, to provide people with additional coil protection to safeguard against corrosion. ActronAir Coil Coat is a water based, self-etching epoxy resin and is used to coat heat exchange coils to give long term corrosion protection. The coating cures to a thin film of high gloss super hydrophobic finish, resulting in a perfect heat exchange surface.



Salt built up corrosion

Coil protection is only as good as its method of application

Unlike some other products on the market, ActronAir Coil Coat is applied using an immersion dipping method. This ensures the entire surface of the coil is protected, including hard to reach areas such as tubes, return bends, and end plates. Other methods of application like Spray painting, powder coating, and electro coating rely on the skill of the individual applying it. As a result they may not achieve full penetration coverage, which means there is no full protection of the coil provided.

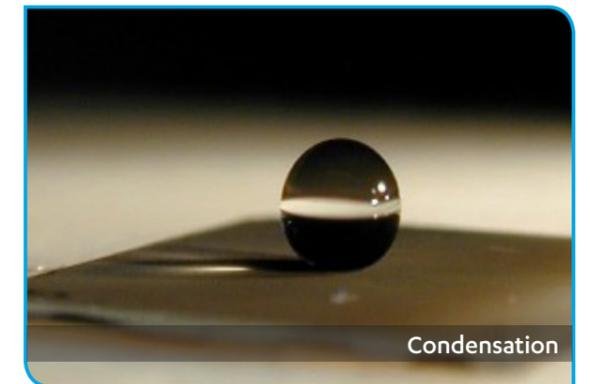


Immersion method

Condensation can impact performance

Condensation on the indoor coil can have many negative impacts, like:

- Increased resistance to air flow, resulting in higher fan operating costs
- Ideal environment for mould and bacteria growth
- Accelerates various types of corrosion



Condensation

Whilst many coil protection products on the market have hydrophilic properties, ActronAir Coil Coat includes a SUPER Hydrophobic additive specifically designed to deliver faster condensation run off. This prevents condensation from accumulating on the coil surfaces, which maintains higher levels of operating efficiency and reduces the impacts of corrosion.

Don't let mould and bacteria impact your health

To help combat the negative impacts that mould and bacteria can have, ActronAir Coil Coat contains permanent Ag+ (silver ion) technology. This has been developed to ensure that with regular maintenance the coil stays clean and free of micro-biological contamination, maintaining a more efficient coil.



Mould and Bacteria

ActronAir Coil Coat features a number of unique benefits, including:

Immersion Dipping	<ul style="list-style-type: none"> ■ Ensures the entire surface of the coil is protected including tubes, return bends, and end plates ■ Ensures the entire depth/thickness of the coil is evenly protected ■ Ensures the heat exchange coil will remain free of corrosion and maintain its long term heat exchange efficiency for a longer time.
SUPER Hydrophobic Surface	<ul style="list-style-type: none"> ■ Improves condensation characteristics ■ Allows for faster run off of the condensate ■ Improves heat exchange performance ■ Reduces dirt and dust consolidation, minimising the need to clean the coil
Reduce Mould and Bacteria	<ul style="list-style-type: none"> ■ Contains permanent Ag+ (silver ion) technology ■ Reduces mould and bacteria growth within the coil ■ Reduces micro-biological contamination ■ A clean, dry, bio-film free coil uses far less energy than a wet, dirty coil
Very Thin	<ul style="list-style-type: none"> ■ ActronAir Coil Coat is only 7-9 microns ■ Specifically designed to be so thin that it does not affect heat exchange or air flow ■ Assists in maintaining product performance and efficiency

Testing to the highest standards ensures superior performance

Whilst ActronAir Coil Coat's performance is anything but standard, it certainly meets a lot of them. To ensure the highest levels of protection, ActronAir Coil Coat has been extensively tested to ensure it meets or exceeds the following industry standards:

INDUSTRY STANDARDS	
ASTM G22	Resistance to Bacteria
ASTM D4798	Resistance to Ultra Violet Light
ASTM G21	Resistance to Fungi
ASTM G85-A1	Acidified Salt Spray Test
ASTM D522	Flexibility and Adhesion Test
ASTM G87	Moist SO2
ASTM B117	Neutral Salt Spray
MIL STD 810F	Sand and Dust Test
TECHNICAL DATA	
Colour	Translucent, light blue finish
Gloss Level	Full
Temperature Range	Up to 180°C
Application Method	Total coil immersion
Film Thickness	7-9 microns dry film thickness per coat
Heat Transfer	Negligible impairment at the given thickness
VOC Level	85 grams/Litre
Super Hydrophobic	Additive to increase condensation and improve corrosion resistance

ActronAir Coil Coat resistance to chemicals

ActronAir Coil Coat offers excellent protection in a majority of aggressive environments. The following is the chemical and solvent resistance guide of chemical exposure:

CORROSIVE AGENT	STRENGTH	RATING
Hydrochloric Acid	5%	E
Hydrochloric Acid	10%	E
Hydrochloric Acid	20%	E
Sulphuric Acid	5%	E
Sulphuric Acid	10%	E
Sulphuric Acid	20%	E
Phosphoric Acid	5%	E
Phosphoric Acid	10%	E
Phosphoric Acid	20%	E
Phosphoric Acid	30%	E
Acetic Acid	10%	E
Trichloroethylene		E
Toluene		G
Methylated Spirits		G
Mineral Turpentine		G
MEK (Methyl Ethyl Ketone Solvent)		G
Acetone		G

(NB Where 1% = 10,000ppm)

E = Excellent G = Good P = Poor

In addition, the above table demonstrates ActronAir Coil Coat's excellent resistance to fumes from the following: Lactic Acid, Oxalic Acid, Humic Acid and Saltwater. ActronAir also provides technical assistance with other not-listed and more specific environments.

Additional specific resistivity

In addition to its Chemical Resistance, ActronAir Coil Coat is also resistant to the following materials:

FOOD ACIDS	
1. Vinegar	<ul style="list-style-type: none"> 3% to 7% Acetic acid Frequent cause of 'copper tube pitting' Found in many foods, such as Salad dressings Present during Small goods curing
2. Lactic acid	<ul style="list-style-type: none"> Selectively attacks copper tube and can result in pitting Milk and Dairy products Cheese products
3. Citric acid	<ul style="list-style-type: none"> Very widely used as food additive to acidify, beverages and confectionery Effervescent salts and other foods
4. Maleic acid	<ul style="list-style-type: none"> Used in fats to reduce rancidity
5. Oleic acid	<ul style="list-style-type: none"> Formed by hydrolysis of various fats and oils On exposure to oxygen it forms rancidity in fats and oils
6. Oxalic acid	<ul style="list-style-type: none"> Found in many plants and vegetables It is also the product of many moulds
7. Allyl Sulphide	<ul style="list-style-type: none"> Very corrosive vapours (onion and garlic) to copper tubes Found in large amounts in onion processing plants and other food processing plants
8. Ammonia Sulfate	<ul style="list-style-type: none"> Aggressive attacks Aluminium and Alkaline liquids
VEGETABLES AND FRUIT	
1. Vegetables and Fruit	<p>Vegetables and fruit contain various acids that are mainly selective to copper (attack copper) They are the cause of significant coil copper damage via tube perforation Acid concentration increases with multiple vegetable/fruit storage environments</p> <ul style="list-style-type: none"> Present in varying concentrations during vegetable and fruit storage
ENVIRONMENTAL /AMBIENT	
1. Hydrogen Sulphide (H ₂ S) / Nitrous oxides (car emissions)	<ul style="list-style-type: none"> Found in varying concentrations near transport routes Car parks General industry
2. H ₂ CO ₃ (carbonic acid)	<p>Wide ambient presence. Also produced by burning coke and other carbonaceous materials</p> <ul style="list-style-type: none"> Very widely experienced in industrial zones, power stations etc
3. Salt spray / Acidified salt spray	<ul style="list-style-type: none"> Coastal and near coastal regions (main attack on coils is via Galvanic reactions leading to corrosion of aluminium and other anodic metals) Shipping and transportation by sea

Additional specific resistivity (continued)

In addition to its Chemical Resistance, ActronAir Coil Coat is also resistant to the following materials:

MANUFACTURE / PROCESSING	ALCOHOLIC BEVERAGES
1. Ethanol vapours	<ul style="list-style-type: none"> Vapour concentrates on evaporator coils Fumigating/sterilising chemicals vapour
WOOD PROCESSING	
1. Humic acid	<ul style="list-style-type: none"> Selectively and rapidly attacks copper tube components of coils during timber drying / aging
METAL FOUNDRIES	
1. Hydrochloric acid	<ul style="list-style-type: none"> Vapours and other vapourised metallic compounds

ActronAir Coil Coat in action

ActronAir Coil Coat is suitable for use in a wide range of applications, including:



About ActronAir

ActronAir has been designing and building air conditioning systems for Australia's unique and demanding conditions since 1984.

Regarded as the quiet achiever in the Australian Air Conditioning Industry, ActronAir has evolved into a fully integrated design, development and manufacturing facility.

The working knowledge vested in the company's principals, combined with more than 30 years of research and development, has resulted in some of the most comfortable and energy efficient residential and commercial air conditioning systems in the world.

Warranty terms and conditions

"Warranty for Actron Air "Coil Coat" coating does not cover damage or deterioration to heat exchange coil that has been subjected to conditions, not outlined in this document (ActronAir "Coil Coat" brochure). Please refer to the ActronAir Product Warranty Terms Document 892 for full terms and conditions."



Service

Apart from developing and manufacturing some of the most advanced air conditioning systems in the world, there's another innovation of which ActronAir is equally proud. And that's a focus on delivering the best service support in the industry.

"Our passion for innovation, quality and performance also has an important environmental focus – we are continually developing energy efficient solutions for today and the future."

Garry Mundy, Director and founder, ActronAir®



General Enquiries
www.actronair.com.au
1300 522 722

NSW/ACT

ActronAir®
Head Office
5 Irvine Place
Bella Vista NSW 2153

QLD

ActronAir®
119 Benjamin Place
Portlink Industrial Park
Lytton QLD 4178

VIC/TAS

ActronAir®
Hallmarc Office Park
Unit 12/15 Ricketts Road
Mt Waverley VIC 3149

SA/NT

ActronAir®
Unit 4A/69 Sir Donald
Bradman Drive
Hilton SA 5033

WA

ActronAir®
28 Milly Court
Malaga WA 6090