

# Clear Guard Copper Preventive Coating™

STOP GAS LEAKAGE



Specially Designed  
**COATING**

for  
New/Old AC Copper Tubes  
& Condenser Coil.

#### AREA OF APPLICATION

Air Conditioners  
Water Coolers  
Deep Freezers  
Industrial Chillers  
Panel AC  
Industrial Application



Product by :

**AUTOMOTIVE SOLUTIONS™**

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(ISO 9001 : 2008)



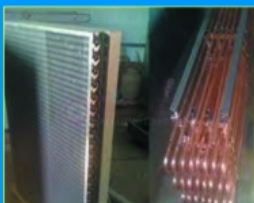
AC COILS



CAR AC COILS



CHILLER PIPING



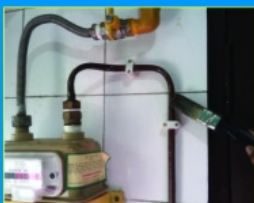
CHILLER UNITS



COILS



COILS OF AC



PNG PIPE LINE

# CLEAR GUARD COPPER PREVENTIVE COATING™

## APPLICATION AREAS



## PRODUCT APPLICATION GUIDE FOR INDUSTRIAL APPLICATION

- Proper Cleaning. Remove Dust & Dirt.
- Mixing Ratio 3:1 Mix Part - A & Part - B Only when Required .
- After Mixing of Products Part - A & Part - B, Use with in 20 minutes else product will become hard.
- Use BRUSH for Application.
- Drying Time 6 to 8 Hrs.

## CHEMICAL RESISTANCE GUIDE

Exposure	Fumes	Splash & Spillage
Acids	Very Good	Very Good
Alkalies	Excellent	Very Good
Solvents	Excellent	Very Good
Salts	Excellent	Very Good
Water	Excellent	Very Good

## APPLICATION

No coating can perform to expectations if applied to a poorly prepared surface. The metal surface must be free of contaminants such as dirt, oil, dust, old finishes, and finger prints. Coating should be done with a minimum of delay after cleaning and precautions should be taken to prevent recontamination. Precautions include working in a low dust environment, handling with white gloves, right mixing of product, use of product within specified pot life (time limit) and applying tarnish inhibitors (chelating agents) to the surface. It must be ensured that in every refrigeration system all the brazing joints should be coated

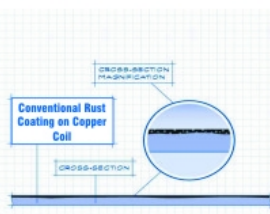
- Both sides of Cooling Coil & Condensor Coil
- Header joints for cooling coil & Condenser Coils
- Suction, discharge & charging joints of the compressor
- Capillary/expansion valve joints
- Copper Filter/Stainer joints
- Accumulator, Dryer joints

## Reasons of Gas Leakage in Air Conditioning Unit

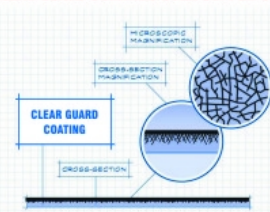
- Toxic gas and fumes from drains and sewers.
- House near drainage canal (Nallah).
- Industrial pollution.
- Costal areas.
- Acid Rain.

Comparing Heat loss between coated and uncoated sample		
Coated sample temperature °C	Uncoated sample temperature °C	Difference sample temperature °C
10	9.9	0.1
20	19.8	0.2
30	29.8	0.2
40	39.7	0.3
50	49.6	0.4
60	59.4	0.5
70	69.6	0.4

## OTHER COATINGS OVER COPPER COIL



## CLEAR GUARD COATINGS OVER COPPER COIL



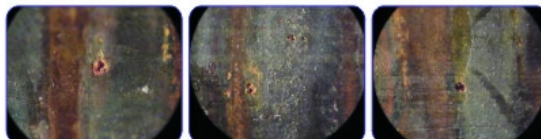
WE INSPECT

WE ADVICE



## ABSTRACT

Over the past several years the HVAC industry has experienced a large increase in instances of leaks in the brazing joints central portion of copper tube heat exchange coils. These leaks are



Microscope images of pits in copper tubing. (60X Magnification)

characterized as being very small in size and very high in numbers within a single coil. There are many chemical species that can cause these coil leaks, including chlorides from pool chemicals and clothes washing, sulphur from tap water, lubricants and nearby industries, and ammonia compounds from cleaners or nearby industries. However this recent increase in reported coil leaks is being attributed to a newly discovered class of corrosion known as ANT –Nest Corrosion resulting due to Drainage Canal (House Near Nallah), open smelling sewers, coastal areas & Industrial Pollution. Copper Corrosion is the degradation of metal caused by a reaction with the environment, such as oxidation and chemical attack of the metallic surface. Copper is susceptible to attack from sulphur-containing gases. The result is the formation of a non productive layer on the material surface. Unprotected copper tubing will continue to react with the contaminant and corrode. Under severe, prolonged conditions, the copper tubing continues to corrode until the integrity of the equipment is jeopardized. Unprotected copper in polluted industrial environments can lead to failure of the refrigeration system. Sulphur and nitrogenbased electrolytes are often the cause of accelerated corrosion in industrial environments.

Many HVAC manufacturers, Air Conditioner Manufacturer, distributors, and Contractors may not realize that hundreds of thousands of pinhole leaks have occurred during the last decade from corrosion. The cause is most typically Environmental pollutants, which range anywhere from salt air, to household cleaning agents, pesticides, formaldehyde, building materials, Industrial pollution, sewer pollution and even off gassing of food. Each of these contaminant sources can initiate corrosion in coil tubing in a year or less when the conditions are right.

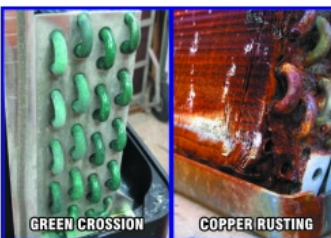
Choosing the most appropriate coil coating for the application could save the Project thousands of Rupees and eliminate repeat treatments. Choosing the wrong coil coating could reduce heat transfer capabilities and lead to higher energy bills. 1/100th of an inch of corrosion on an air conditioner condenser coil can increase cost of operation by 30%.

## INTRODUCTION TO COPPER PIPE CORROSION

Copper exhibits good resistance to corrosion in urban, marine, and industrial atmospheres. The major factors that control the initial rate of attack on copper are moisture, temperature, and the level of pollution. Soon after exposure of copper to the atmosphere copper oxidize, the bright copper surface takes on a dull tan tarnish. After a few months this tarnish gradually changes to dark brown or black. At a later stage the corrosion products of copper turn green.



BLACK CORROSION



GREEN CORROSION

COPPER RUSTING

## Why Clear Guard Copper Preventive Coating™

Clear Guard Copper Preventive Coating is a high performance single step coating to block all corrosion related problems arising due to Industrial Pollutions & environment. This coating is designed to take any type of acid, alkali, solvents, salt & hard water attack on copper & protecting from rusting & gas leak problems.

- Strong resistance to salt water
- Extremely weather resistant
- Superior resistance to wear
- Excellent adhesion properties

### Merits of Clear Guard Copper Preventive Coating™

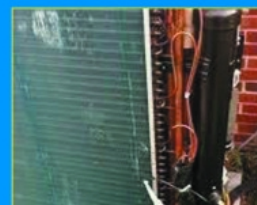
- Protection for copper coil & tubing.
- Tried & Tested for Last 4 Years
- Excellent Adhesion with Rusted Coil.
- Heat Transfer Capability.
- Easy to apply.
- Saves Recurring cost of gas filling.
- Anti Corrosive Properties.
- Fast Drying.
- High Resistance to Acids, Alkali & Solvents.
- Confirms IS Standards.



Before  
Unprotected Copper Coil



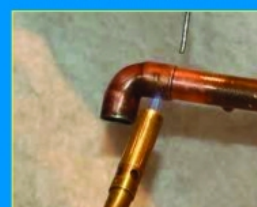
After  
Protected with Clear Guard Coating



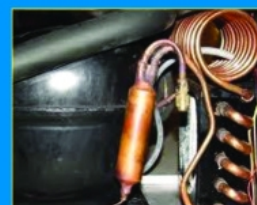
COILS OF SPLIT



DUCTABLE COILS



VRV PIPING



PANEL COOLERS



EVAPORATOR & CONDENSERS



WATER COOLERS



SPLIT AC

WE CERTIFY

WE TRAIN





**Do it yourself Kit**



Pack Size & Coverage		
Pack Size (ML)	Coverage (TR)	Area (Sq. M.)
200	6.5	1.4
400	13.0	2.8
1000	33.0	7.0
4000	133.0	28.0

**30 ML Per Ton**

**Scan the QR Code & Make the Product Live**



WEBSITE



HOW TO APPLY CLEAR GUARD



WHAT IS CLEAR GUARD



LIKE US ON FACEBOOK



**Why us?**

- Speed ✓
- Quality ✓
- Expertise ✓
- Satisfied Customers ✓
- Technical Support ✓
- Reliability ✓
- Security ✓
- Price ✓



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Authorized Outlet