



ECRA-DTM HIGH GLOSS HYBRID ACRYLIC TECHNICAL DATA SHEET

General: ECRA-DTM High Gloss ACRYLIC is a direct to metal high gloss water based acrylic copolymer specifically designed for use in industrial and marine HVAC coils, micro-channel coils and refrigeration coils to stop corrosion from salt and industrial pollution. The coating exhibits excellent performance properties, including high gloss, anti-corrosion resistance and excellent salt spray resistance.

The formulation is a new HYBRID Resin which allows the addition of special properties which increase both the corrosion resistance and the overall performance of the heat exchange surface. The resin matrix is a tightly crosslinked coating which adheres tightly to all metal substrates.

The formulation, in addition, provides hydrophobic and anti-microbial (silver ion) film characteristics suitable for both the topcoat and maintenance applications.

The coating can be applied to previously coated fins to increase protection. Coatings such as Heresite, BLYGOLD and E-COAT can be coated without pre-treatment.

Uses:	Topcoat enamel for DTM for exterior/interior applications, maintenance enamel for exterior/interior applications
Substrates:	DTM to cold rolled steel pre-treated galvanized steel, aluminum, copper and other lightly etch primed metals, previously painted surfaces, etc.
Color:	High gloss color can be adjusted to meet manufacturer's/customer's needs
Gloss level:	Full
Environments:	Industrial, commercial, residential and in general other exposure environments where long term external durability is required
Neutral Salt Spray:	>10000 hrs ASTM B117 (AS 2331.32 – 1980)
Acidified Salt Spray:	> 3000 hr ASTM G85 A5
QUV:	> 1000 hrs ASTM D2244 – color ≤ 5 units
QUV:	> 1000 hrs (Power: 650kJ/m ² ; wavelength 300-800nm)
Dust and Mould:	MIL-STD-810 Dust and Mould NO DAMAGE detected Test Parameters Humidity :7.0% Velocity High :1755 FPM Velocity Low :465 FPM Dust concentration :0.206 g/ft ³
Chemical Resistance:	Excellent to chemical fumes and splash resistance (with exception to strong alkalis or oxidizing chemicals)



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Temperature Range:	Dry heat, up to 180 °C Wet heat, up to 200 °C Minimum – 40 C
Thermal Resistance	Less than 1% (< 1%)
Pressure Drop:	Less than 1% (< 1%)
Off-gassing after Curing:	Within temperature range specified above there will be no dangerous noxious chemical reaction into the circulating air space. As tested by EU Laboratory 2014.
Bacteria Protection:	ASTM G21 Anti Bacteria PASS
Mould Protection:	ASTM G22 Anti Mould PASS

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Paint properties, typical:

Viscosity (Krebs, KU):	93-98
Viscosity (Centipoise, cP):	1300 – 1500
Solids % by: volume/wt:	30.00% /50.00%
Density:	1.2138 Kg/L
pH:	8.8 – 9.5
Gloss at: 20°/60°	65/92
VOC:	165 g/Liter
Flash point:	Water-Borne/Non-Flammable
Application:	Brush/rolling – as supplied. Spray – reduce 10% with Di water
DFT:	20-30 microns (depends on applicator)
Coverage (Practical) :	15 m2/Liter
Application temp. Curing (Air-dry, 25°C)	Apply at above 5°C
Tack free:	15- 30 mins
Recoat:	30- 60 mins
Fully cured:	7 days
Accelerated cure:	Cure can be accelerated significantly depending on the baking oven temp/time cycle selected
Packaging:	20-liter metal drums



Chemical Resistance

ECRA DTM offers protection in a majority of aggressive environments with the exception of strong alkalis and oxidizing chemicals.

The following is the chemicals and solvent resistance guide of chemical exposure:

Corrosive Agent	Strength	Rating
Hydrochloric Acid	5%	E
Hydrochloric Acid	10%	E
Hydrochloric Acid	20%	E
Hydrochloric Acid	30%	E
Sulphuric Acid	5%	E
Sulphuric Acid	10%	E
Sulphuric Acid	20%	E
Sulphuric Acid	30%	E
Phosphoric Acid	5%	E
Phosphoric Acid	10%	E
Phosphoric Acid	20%	E
Phosphoric Acid	30%	E
Phosphoric Acid	50%	E
Acetic Acid	10%	E
Trichloroethylene		E
Toluene		G
Methylated Spirits		G
Mineral Turpentine		G
MEK (Methyl Ethyl Ketone Solvent)		G
Acetone (NB Where 1% = 10,000 ppm)		G

Legend E=Excellent G=Good P=Poor

In addition, the above ECRA OEM demonstrates excellent resistance to fumes from the following: Lactic Acid, Oxalic Acid, Humic Acid and Saltwater.

Additional/Specific Resistivity

ECRA-DTM product range is also resistant to the following materials.

Food acids:

1. Vinegar (3-7% Acetic acid). Frequent cause of 'copper tube pitting'.
 - Found in many foods, such as Salad dressings
 - Present during Small goods curing
2. Lactic acid. Also selectively attacking copper tube and can result in pitting.
 - Milk and Dairy products
 - Cheese products
3. Citric acid. Very widely used as food additive.
 - to acidify beverages
 - confectionery
 - effervescent salts, and other foods.
4. Maleic acid:
Used in fats to reduce rancidity.
5. Oleic acid:
Formed by hydrolysis of various fats and oils. On exposure to oxygen it forms rancidity in fats and oils.
6. Oxalic acid:
Found in many plants and vegetables. It is also the product of many moulds.
7. Allyl Sulphide:
Very corrosive vapors (onion and garlic) to copper tubes. Found in large amounts in onion processing plants and other food processing plants

Vegetable and fruits:

1. Vegetables and fruits contain various acids which 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.
 - Present in varying concentration during vegetable and fruit storage



Environmental/ambient:

1. Hydrogen sulphide (H₂S) and Nitrous oxides (car emissions)

- Found in various concentrations near transport routes
- Car parks
- General industry

2. CO₂ (carbonic acid). Wide ambient presence. Also produced by burning coke and other carbonaceous materials.

- Very widely experienced in industrial zones, power stations, etc.

3. Salt spray/acidified salt spray

- Coastal and near coastal regions (main attack on coils is via Galvanic reactions leading to corrosion of aluminum and other anodic metals)
- Shipping and transportation by sea

4. Alcohol beverages manufacture/processing:

Ethanol vapors

- Vapor concentrates on evaporator coils
- Fumigating/sterilizing chemicals vapors

Wood processing:

Humic acid selectively and rapidly attacks copper tube components of coils during timber drying/aging

5. Metal foundries:

Hydrochloric acid vapors and other vaporized metallic compounds

6. Chlorine Fumes

- Chlorine fumes generated by cleaning agents in BLEACH
- Chlorine fumes generated around Chlorine based POOL disinfection

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Indoor Air Quality Treatment

1. Silver Ion additive to complete kill all bacteria, viruses and mould that comes into contact with the heat exchange surface
2. Permanent disinfectant additive added within the resin as a HYBRID to maximize exposure and durability of the disinfectant.
3. Strong adhesion of the resin to all metal substrates including copper, aluminum and galvanized steel.
4. Five plus years long term microbial protection

Registration of Anti Bacteria Additive

- US EPA Drinking water contact
- US FDA food contact
- EPA FIFRA Registration
- EPA Food contact
- EPA HVAC Use
- NSF Registration

SUPER HYDROPHOBIC Self-Cleaning Surface

1. Highly effective super hydrophobic surface repels water to reduce dirt and accelerate self-cleaning capacity
2. Permanent SUPER HYDROPHOBIC surface reduces cleaning and maintenance
3. Coating improves efficiency by increase condensation capacity of heat exchange surface