

## PRODUCT DATA SHEET

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**PRODUCT NAME: RTW-121**

**TYPE: Zinc-Based Corrosion Inhibitor**  
For Open Recirculating Cooling Water Systems

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### PRODUCT DESCRIPTION

**RTW-121** is a highly effective liquid corrosion inhibitor, engineered to protect metal surfaces in open-loop cooling systems operating with **low hardness and low alkalinity** waters. It forms a **durable, adherent protective film** on ferrous metal surfaces using a **zinc-based cathodic inhibition mechanism**, significantly enhancing the system's resistance to corrosion under varied operating conditions.

This environmentally considerate formulation is free from chromates and other highly toxic components, offering dependable performance while minimizing environmental impact.

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### KEY FEATURES & BENEFITS

- **Cathodic Corrosion Protection:** Zinc forms a resilient protective barrier on metal surfaces.
- **Effective in Aggressive Waters:** Ideal for low hardness, low alkalinity systems prone to corrosion.
- **Stable Under Heat:** Maintains performance even at elevated skin temperatures.
- **Broad Metal Compatibility:** Protects mixed-metal systems including ferrous and yellow metals.
- **Economical Dosing:** Delivers protection at low concentrations, reducing overall treatment cost.

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RTW-121 has been shown to:

- Thin and stabilize the surface oxide layer on **alloy 600MA**
- Eliminate the outer iron-rich, corrosion-prone layer
- Promote formation of a **chromium-rich**, corrosion-resistant inner layer

This structural modification significantly **inhibits crack initiation and propagation** under high-temperature corrosion conditions (e.g., 360°C).

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### RECOMMENDED APPLICATIONS

- Open recirculating cooling towers
- Power generation and industrial cooling loops
- Systems vulnerable to **galvanic corrosion** and **pitting**
- Applications requiring enhanced alloy protection, including **nuclear plant water systems**

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### PRODUCT SYNERGY

For complete system protection (scale and corrosion), use RTW-121 **in combination with:**

- **RTW-170** – an iron dispersant and scale inhibitor

This pairing provides **comprehensive anodic and cathodic protection**, along with effective scale and deposit control.

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**DOSAGE & FEEDING GUIDELINES**

Parameter	Recommended Range
Normal Dose	5–10 ppm (based on LSI)
Zinc Residual (Zn <sup>++</sup> )	Maintain between 0.5–2 ppm
System pH	Maintain between 6.5–8.3

**FEEDING METHOD:**

- Continuous dosing via a proportioning pump
- Can be dosed as received or in diluted form
- Use only corrosion-resistant materials (PVC, PE, PP) for feed equipment

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**STORAGE & SAFETY**

Store in a cool, dry place, avoid direct sunlight, avoid contact with skin, eyes, and clothing. Use appropriate personal protective equipment.

**PACKAGING**

Polyethylene drums of 25 or 220 liters, containers of 1000 liters.