

Product Bulletin for Corrosion Classification Coupon



The Corrosion Classification Coupon (CCC) measures the amount of corrosion that forms on copper and silver surfaces. This provides data allowing an industry standard classification of the amount of corrosion present, as well as identifying contaminant classes. Because many contaminants are corrosive in nature (e.g., hydrogen sulfide and sulfur dioxide), reactivity monitors have long been used to gauge the quality of ambient air and to indicate the effectiveness of pollution control strategies. Purafil's CCC is a passive reactivity monitoring technique involving the use of copper and silver.

Typical CCC Installation Sites:

Industrial and Mission Critical Environments

- Control rooms
- Rack rooms
- Motor control centers
- Data Centers
- Critical parts storage rooms
- Server rooms

Museum and Library Environments

- Outside air intakes
- Recirculation air handlers
- Storage rooms
- Display cases
- Archives
- Historic Houses

Customer Benefits:

- Unobtrusive, easy installation and data gathering
- Economical investment for determining air quality
- Scientifically supported, reliable results
- Provides the documentation required for manufacturers' warranty compliance
- Vital for determining corrective solutions to protect equipment, processes, and artifacts

Copper and Silver Analysis:

After an installation period of 30 days, the CCCs are collected from the field and returned to Purafil's laboratory for analysis. The purpose of CCC analysis is to determine the type and thickness of corrosion films on the surface of each metal coupon. A normalized 30-day reactivity rate is calculated using the amount of time the metal coupon is exposed and the thickness of the corrosion that has formed.

ISA Environmental Classes: Airborne Contaminants

This standard requires that rooms containing backplane wired equipment, instrumentation, process control systems or computers, must have a G1 environmental classification, defined in terms of corrosion thickness as 0-299 Angstroms (Å) per 30 days on copper and 0-199 Å per 30 days on silver coupons.

ISA STANDARD ANSI / ISA-71.04-2013*		
Severity Level	Copper Corrosion	Silver Corrosion
G1 - Mild	<300 Angstroms / 30 days	<200 Angstroms / 30 days
G2 - Moderate	<1000 Angstroms / 30 days	<1000 Angstroms / 30 days
G3 - Harsh	<2000 Angstroms / 30 days	<2000 Angstroms / 30 days
GX - Severe	>2000 Angstroms / 30 days	>2000 Angstroms / 30 days

*This standard was revised in 2013 to include a requirement for the use of BOTH copper and silver corrosion rates to determine environmental classifications. The overall ISA Severity Level is based on the higher of the two corrosion rates.