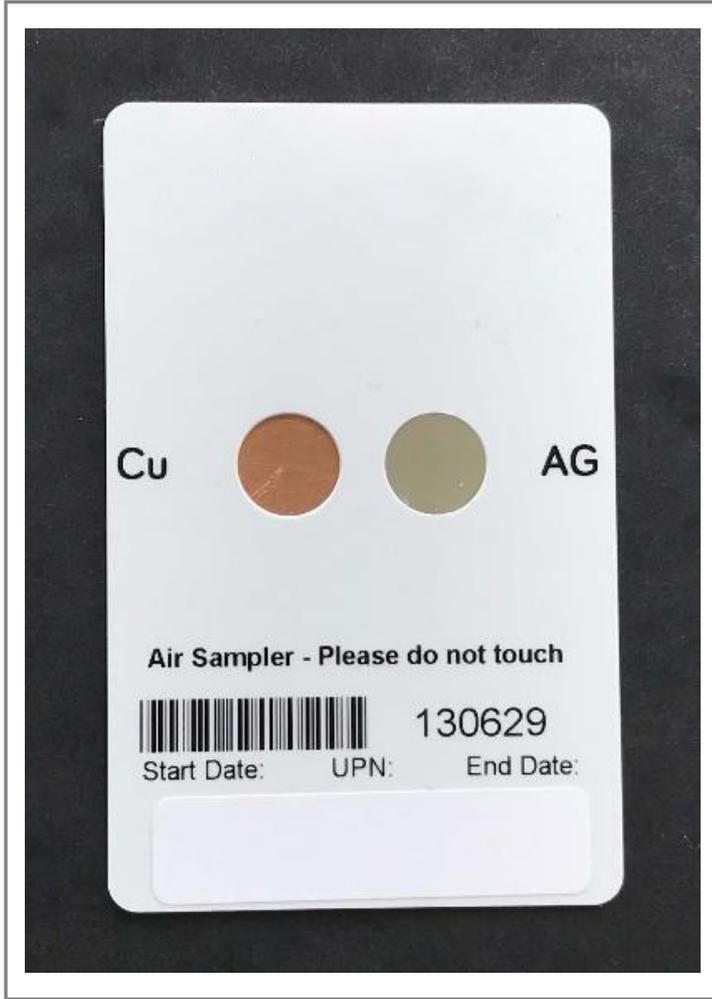


COUPON LITE REPORT



Test results correspond to ANSI/ISA-71.04-2013 which is an internationally accepted standard that categorizes environmental conditions in relation to the development an reliability of electronic equipment.

COUPON DATA	
Coupon ID	130384
Start date D/M/Y	13-12-2019
End date D/M/Y	16-01-2020
Test length	16 days

TEST RESULTS

Copper	221 Angstrom/ 30 days	Test result corresponds to severity level G1 - Mild (European standard EN 60721-3-3 Level 3C1). An environment sufficiently well controlled such that corrosion is not a factor in determining equipment reliability.
Silver	32 Angstrom/ 30 days	Test result corresponds to severity level G1 - Mild (European standard EN 60721-3-3 Level 3C1). An environment sufficiently well controlled such that corrosion is not a factor in determining equipment reliability.



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INFORMATION

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.

INFORMATION

This report shows the actual amount of corrosion measured on the metal coupon. The corrosion of metals is caused by both gaseous and particle contaminants and is accelerated by heat and moisture. Gases which cause metal corrosion include hydrogen sulfide, sulfur and nitrogen oxides, chlorine and hydrogen fluoride; as well as caustic gases, such as ammonia and oxidizing gases, such as ozone. Aerosols containing chlorides (salt) can also corrode metals. Metal corrosion can weaken the integrity of structures and indicate the presence of pollutants that endanger human health. Metal corrosion in electronic equipment can cause needles or nodules to grow out of electronic components including silver solder causing short circuits. Corrosion can also cause metal plate surfaces to flake thereby causing short circuits. Metal corruptions can also cause failure of electrical contacts as well as thermal related failures.

The switch to lead-free (RoHS compliance) manufacturing affects almost all electronic products and some of the more common materials used as replacements were more sensitive to common atmospheric pollutants than lead-based materials. Manufacturers of industrial process control equipment have used ISA -71.04 since its initial publication for warranty compliance because they understood that their equipment had to be protected due to the corrosive nature of the environments in which it would be used (see "Gaseous and Particulate Contamination Guidelines For Data Centers" – ASHRAE.org)

*Source: "Gaseous and Particulate Contamination Guidelines For Data Centers" – by ASHRAE TC 9.9 (ashrae.org)



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