

Statement of Performance

Metal Extraction from Furon HP PFA 400 UC Using SEMI C90 Standards for Testing Methods and Requirements

Furon HP PFA 400 UC tubes were tested in accordance with the SEMI C90 specification for Metallic Surface Contamination at an independent test lab¹.

Test Conditions

Saint-Gobain produced two tubes (3/8" OD x 1/4" ID) using virgin HP PFA pellets containing less than 5 PPb of Iron (as required by the standard) and were sourced from the two main raw material providers that supply the Semiconductor industry. Both were manufactured in a cleanroom, on the same equipment and with identical parameters.

The prepared samples were leached with 5% HNO₃ for 24 hours at an ambient temperature in accordance with C90. A leach blank was also prepared in this manner for the testing. Values for each result were calculated by subtracting the blank and normalizing to the µg/m² of the surface of the leaching area.

Summary

Furon HP PFA 400 UC Tubing was tested for Metallic Surface Contamination with results indicating the tubing was tested within the limits of 5µg/m² of Iron, in compliance with the SEMI C90 standard.

Additionally, the combined result of the two different raw materials underscores Saint-Gobain's production process and production environment do not impact levels of contaminant that were not found on the produced tubing (or at least below the detection limit level) and emphasizes the excellent process expertise of our production site.

References

¹ Balazs NanoAnalysis Air Liquide US L.P. 46409 Landing Parkway

"-" Indicates the result is below the detection limit of the test.

Results

Test	Detection limit (µg/m ²)	Value for sample A (µg/m ²)	Value for sample B (µg/m ²)
Surface Extractable Metallic Contamination			
Aluminum	0.2	0.8	0.3
Boron	2	-	-
Calcium	0.8	1.6	1.0
Chromium	0.2	0.3	3.3
Copper	0.2	4.1	-
Iron	0.8	2.5	-
Lead	0.2	-	-
Lithium	0.08	-	-
Magnesium	0.2	0.3	-
Manganese	0.2	-	-
Nickel	0.2	3.5	-
Potassium	0.8	-	-
Sodium	0.2	0.3	0.8
Tin	0.08	-	-
Titanium	0.2	0.5	-
Zinc	0.2	2.7	0.3