Ionic Contamination Testing

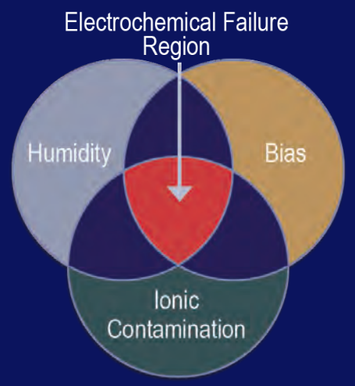
Ionic's are bad for electronics.

Mixing ionics (salts) with electricity in the presence of moisture facilitates an electrolytic cell initiating electro-chemical reactions at least in the form of dendrites.

Ionic Contamination has been proven to contribute to Tin Whiskers.

Ionic Contamination Testing is therefore an essential tool in controlling a production process.

The detection of ionic impurities is critical for several industries where there are stringent regulatory and industrial requirements in the identifi cation of trace ionic contaminants. Detecting and measuring these ionic impurities is a well proven and widely used technique. Standards in use today include: IPC-J-STD001 – IPC 6012 – IPC-TM-650 Method 2.3.25.



Introducing the award winning CM+ range of Contaminometers™ from Gen3 Systems.

Used to measure the amount of ionic contamination, usually referred to as cleanliness levels, in accordance with all international specifi cations. They are often referred to as ROSE (Resistivity Of Solvent Extracted) or SEC (Solvent Extract Conductivity) testers.

Process ionic contamination testing (PICT) is a new process control metric introduced by Gen3 Systems.

The CM+ Range:

- CM11+
- CM22+
- CM33+
- CM33L+
- CM60
- CMBBT

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Data Processing

Unique Curve-fi tting Analysis - gives an accurate indication of the total amount of ionic contamination on the circuit. The graphical display of test results features auto-ranging of curves in equivalent equivalence. Contamination is plotted against time and the curve is automatically extrapolated producing meaningful data even for a short test.

The test data are analysed graphically including pass/fail analysis. Statistical evaluation of up to 50 test results is incorporated in the Contaminometer software but test results may also be imported into other software packages for further enhancement or appraisal as required.

Test Operation

The solution is re-purifi ed automatically each time a new test is run using a special regeneration, or de-ionising, cartridge that is easy to exchange. Electronic control is by a low voltage system enclosed in a separated housing.

The CM+ Systems have been designed to avoid polarisation eff ects between electrodes as might occur when using DC test currents. Equally, error signals, caused by both DC and AC currents, are eliminated and high accuracy is ensured even at low conductivity values. This permits our equipment to measure accurately even when the ratio of board surface area to test solution volume is very large.

The Contaminometer software has built in as standard, automatic compensation for temperature, measured via a thermistor located in the test cell, circuit board volume and atmospheric absorption of ionic gases.

For over 40 years the Benchmark for Ionic Contamination Testing

CMBBT - Bare Board Tester

Optimised to provide the most accurate measurements, the system features a "Narrow & Deep" tank to avoid the unwanted infl uences of CO_2.

Tank size: 715 x 665 x 30 mm (28" x 26" x 1.2")
Minimum PCB area: 150cm²
Maximum PCB size (in Handling Frame): 645 x 645 x 7 mm (25" x 25" x 0.3")

CM11+

The CM11+ is the worlds smallest and most convenient bench-top system.

Tank size: 250 x 300 x 36 mm (10" x 12" x 1.4")
Minimum PCB area: 25cm²

CM22+

A free standing system able to cater for larger assemblies whilst maintaining a low surface area to test solution ratio.

Tank size: 250 x 350 x 60 mm (10" x 14" x 2.4")
Minimum PCB area: 50cm²
Maximum PCB size (in Handling Frame): 330 x 225 x 33 mm (13" x 9" x 1.3")

CM33+

Suited to the widest variety of assembly sizes without losing test accuracy.

Tank size: 500 x 350 x 60 mm (19.7" x 13.8" x 2.4")
Minimum PCB area: 100cm²
Maximum PCB size (in Handling Frame): 480x 325 x 33 mm (19" x 12.8" x 1.3")

CM33L+

Equipped with enhanced plumbing to maintain optimum test accuracy.

Tank size: 610 x 610 x 90 mm (24" x 24" x 3.6")
Minimum PCB area: 250cm2
Maximum PCB size (in Handling Frame): 590 x 585 x 63 mm (23.2" x 23" x 2.5")

CM60

The CM60 utilises a unique Volumetric Measurement Cell (VMC). To test, simply input the circuit length and width, put the item into the tank and push the button – it's as simple as that.

Tank size: 500 x 350 x 60 mm (19.7" x 13.8" x 2.4")
Minimum PCB area: Tank 1 & 3: 100cm2 Tank 2: 150cm²

CM+ Features

The CM+ Contaminometer range from Gen3 Systems utilise a solid gold test-cell, ballistic amplifi ers and vigorous pumping systems to ensure superior measurement precision even at very low conductivity values.

PC based software is used to produce graphical test data, a pass/fail analysis and automatic hard copy print out using test methods according to the prevailing standards.

- Unique solid gold measuring cell, ballistic amplifier providing a test accuracy of ±0.005µS/cm
- Unique CURVE-FITTING Analysis algorithm (Merit of Fit)
- High-speed testing in 3 minutes
- Full regeneration in typically < 6 minutes
- Accurate measurement even when the ratio of board surface area to test solution volume is very large
- Automatic temperature compensation
- Measures in accordance with all international and MIL specifications old and new
- New range of PCB/Component Handling Frames, with integrated draining system

GEN3 SYSTEMS