ZESTRON
High Precision Cleaning

Ion chromatography is a high-resolution analysis technique, in order to determine the ionic contamination on the component assembly according to type and quantity

Unlike simpler methods of measurement, such as the use of contaminometers or omegameters whereby the total ionic content is calculated as an equivalent to sodium chloride, ion chromatography provides both a quantitative and qualitative resolution of the ions.

This method makes it possible to detect weak organic acids on printed circuit boards or soldered assemblies that can cause temporary leakage currents enabling an initial risk assessment to be made.

Ion chromatography enables the identification of critical hygroscopic ions, such as those of chloride or bromide. These ions can extract moisture from the ambient air onto the coated assembly. The consequential damage appears in the form of field malfunctions including known error patterns like electrochemical migration.

We offer you:

- Identification of anions, cations and weak organic acids on your electronic assemblies (maximum size 20 x 30 cm / 8 x 12 inch) and circuits according to type and quantity.

  - Performed in accordance with the IPC Standard TM-650 2.3.28A
  - Evaluation of residues performed in accordance with IPC Standard CH-65B

- A detailed technical report

Ion chromatography - the principle of the measurement:

The ions present on the assembly are released within an extraction liquid. The ions in the resulting eluate are then subjected to a time-delayed analysis based on conductivity methods and according to type and quantity.

This analytical process delivers a precise breakdown of the anions, cations and weak organic acids.

Example anion and weak organic acid chromatogram

Ion Chromatography

Example cation chromatogram
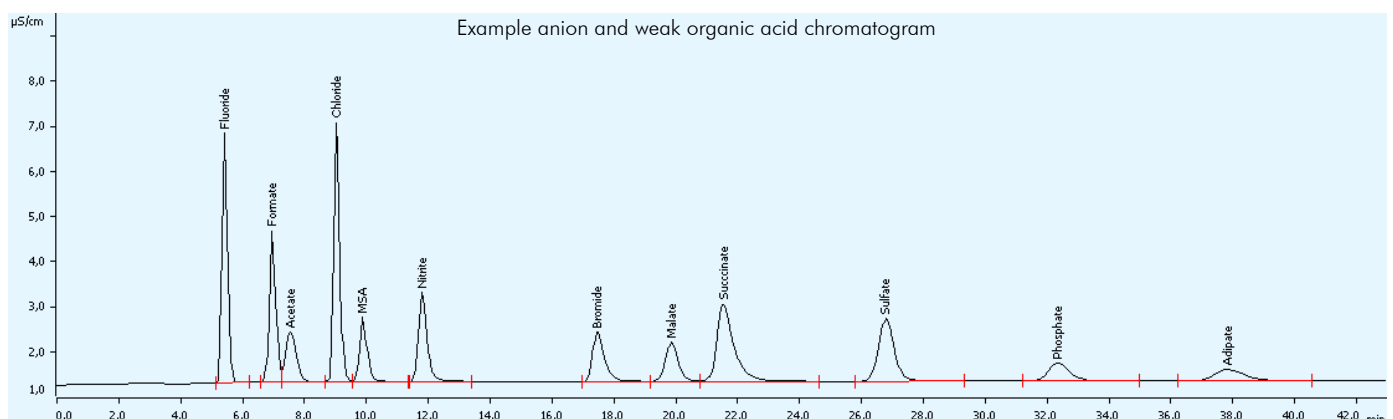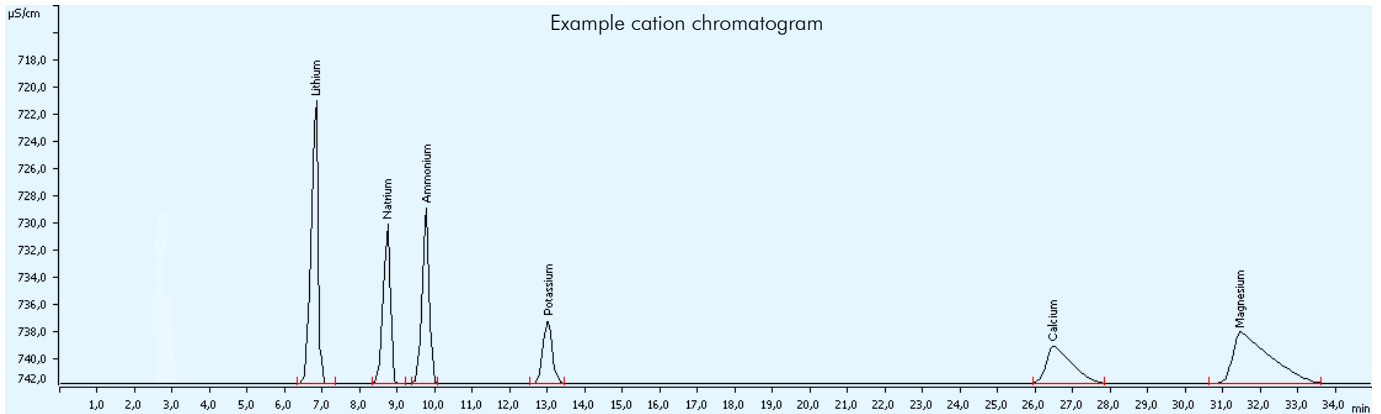
The benefit to you:

- Ion chromatography is suitable for post-soldering proof of purity per official regulations, verifying surface quality following cleaning or prior to subsequent coating or bonding processes.

- Qualitative and quantitative determination of the anions, cations and weak organic acids on your assemblies in μg/cm^2 units, which allows for an initial risk assessment.

- Better predictions of potential error patterns such as:

  - Leakage currents through hygroscopic weak organic acids
  - Electrochemical migration through the formation of dendrites caused by saliferous ions (e.g. chloride or bromide)
  - Corrosion of copper contacts caused by halide ions such as chloride or bromide

- Application as basis for definition of internal quality standards, particularly in the case of high-reliability assemblies.

- Continuous monitoring of quality through regular sample-based measurement.

We would be pleased to prepare a quote based on your specific requirements:

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