Simultaneous Analysis of both Anions & Cations in Water

- High sensitivity, selectivity, and relatively low cost of operation
- Reliable measurement
- High repeatability and accuracy
- EPA Method 300.0, EPA Method 300.1, ASTM D4327-17, ISO 10304-1:2007, ISO 10304-2:1995, ISO 10304-4:1997, ISO 14911, ISO 10304, ASTM D6919

The **Advanced Anion and Cation Analyser** is an advanced, dual-channel analytical instrument that employs ion chromatography to simultaneously detect and quantify both anions and cations in a wide range of samples. This two-channel system is designed to analyze water, environmental, industrial, and biological matrices with high efficiency and accuracy. The dual-channel configuration of the **Advanced Anion and Cation Analyser** allows for concurrent analysis of anions and cations, significantly increasing throughput and reducing analysis time. One channel is dedicated to anion analysis, separating species such as chloride (Cl^-), fluoride (F^-), nitrate (NO_3^-), nitrite (NO_2^-), bromide (Br^-), phosphate (PO_4^{3-}) and sulfate (SO_4^{2-}), while the other channel focuses on cations like sodium (Na^+), potassium (K^+), calcium (Ca^{2+}), magnesium (Mg^{2+}), ammonium (NH_4^+), and lithium (Li^+).

Both channels utilize specialized ion-exchange columns and a mobile phase to carry the sample through the analytical process. As ions elute at different times in each channel, they are primarily detected by conductivity detectors. The system also supports integration with other detection methods such as UV/Vis or mass spectrometry for specific applications.

Advantages:

1. High sensitivity and selectivity for both anions and cations
2. Simultaneous analysis of multiple ions, improving efficiency
3. Precise quantification, even at low concentrations
4. Ability to handle complex sample matrices with minimal preparation
5. Versatility across various applications

By providing detailed, simultaneous information on the concentration and composition of both anions and cations, the dual-channel **Advanced Anion and Cation Analyser** plays a crucial role in modern analytical chemistry. It supports critical decisions in environmental protection, public health, and industrial processes, offering a comprehensive solution for ion analysis in a single, efficient instrument.

Anions		Concentrations (mg/L)
1	F^-	2
2	ClO_2^-	1
3	BrO_3^-	1
4	Cl^-	10
5	NO_2^-	5
6	Br^-	10
7	ClO_3^-	1
8	Dichloroacetic acid	1
9	NO_3^-	30
10	HPO_4^{2-}	15
11	SO_4^{2-}	40

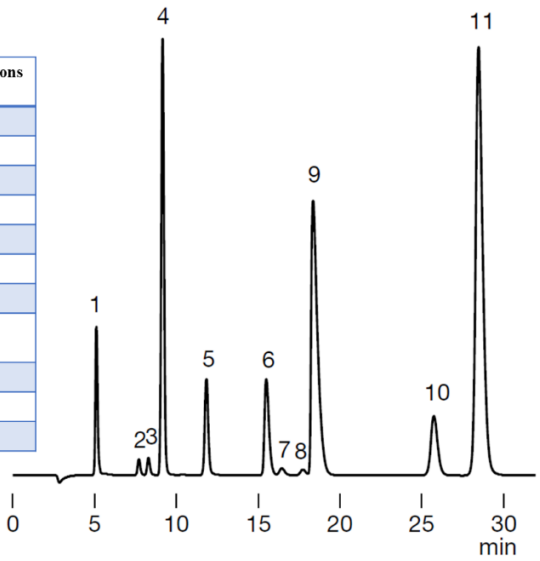
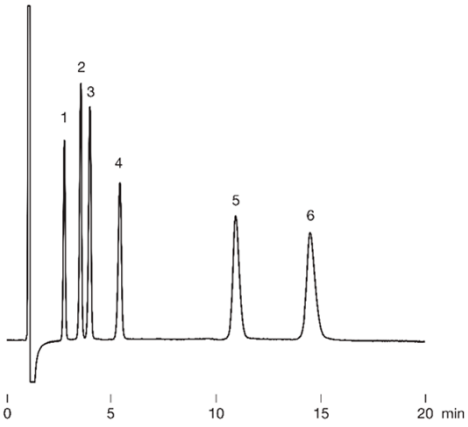


Fig.1 Anion analysis using conductivity measurements



Cations		Concentrations (mg/L)
1	Li^+	2
2	Na^+	10
3	NH_4^+	10
4	K^+	20
5	Mg^{2+}	10
6	Ca^{2+}	20

Fig.2 Cation analysis using conductivity measurements