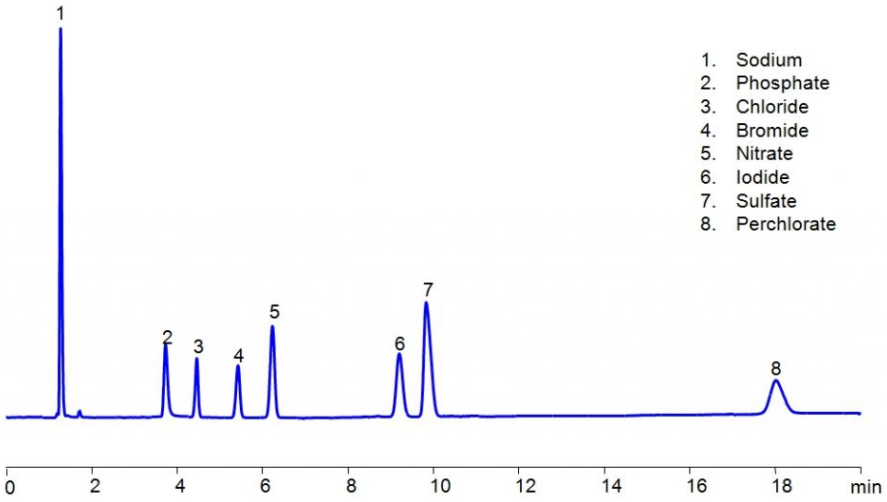
HPLC Separation of Inorganic Anions on Newcrom BH Column



Column:	Newcrom BH
Column size:	4.6 × 150 mm, 5 µm
Mobile phase:	MeCN/H2O - 10/90%
Buffer:	Gradient AmAc pH 5.0 - 20-90 mM, 20 min
Detection:	CAD
Flow rate:	1 mL/min

High Performance Liquid Chromatography (HPLC) Method for Analysis of Sodium , Phosphate , Chloride , Bromide , Nitrate , Sulfate , Iodine , Perchlorate , Iodide

Sodium , which has a chemical symbol of Na , is a soft alkali metal that is highly reactive. It is found in abundance in everyday materials like table salt, sea water, and even the Earth’s crust. It is crucial for the body’s function and fluid balance.

Phosphate, PO 4 3- , is a compound that plays an important part in biological energy transfer. It contains phosphorus, which is also a key component in bones and teeth. It is also a buffer, which helps maintain pH levels in a body.

Chloride is typically used to refer to a compound or molecule that contains a chlorine anion: Cl – . It is an electrolyte that is essential for bodily functions including blood pH, fluid balance, cellular functions, and more. Imbalance of chloride can indicate underlying health problems.

Bromide is typically used to refer to a compound or molecule that contains a bromide anion: Br – . It is often found in anticonvulsants, flame-retardant materials, and cell stains.

Nitrate, NO 3 – , is a compound of nitrogen and oxygen. It is essential as a nutrient in plants; therefore, it is often used in fertilizers. It is easily found in leafy greens. While it is important for cardiovascular health, too high of exposure to it can be dangerous.

Iodide , the Ionic form of Iodine, I – is essential for thyroid hormone production. Lack of it can lead to iodine deficiency disorders. It is typically found in Iodized salt and occasionally as an antiseptic.

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Sulfate is an ionic chemical with the formula SO 4 2- . In nature, it is usually found in geodes like gypsum. It is also created in atmosphere from sulfur dioxide. It is used for a variety of applications, but most notably, coloring wood and creating light-reflecting paints.

Perchlorate is an inorganic compound with the formula ClO 4 – . It is most typically used for explosives. For example, fireworks and rocket propellants. Due to it’s water solubility, it can easily contaminate it. When ingested, it can pose a health risk and cause developmental harm.

Sodium , Phosphate , Chloride , Bromide , Nitrate , Sulfate , Iodine , Perchlorate , Iodide can be retained and analyzed using the Newcrom BH stationary phase column. The analysis utilizes an isocratic method with a simple mobile phase consisting of water and acetonitrile (MeCN) with a Ammonium Acetate buffer. Detection is performed using CAD.

Method Parameters

Column	Newcrom BH, 4.6 x 150 mm, 5 µm, 100 Å, dual ended
Mobile Phase	MeCN/H2O – 10/90%
Buffer	Gradient AmAc pH 5.0 – 20-90 mM , 20 min
Flow Rate	1.0 mL/min
Detection	CAD (Corona) (MS-compatible mobile phase)

Quelle: https://sielc.com/hplc-separation-of-ions-on-newcrom-b-column-2