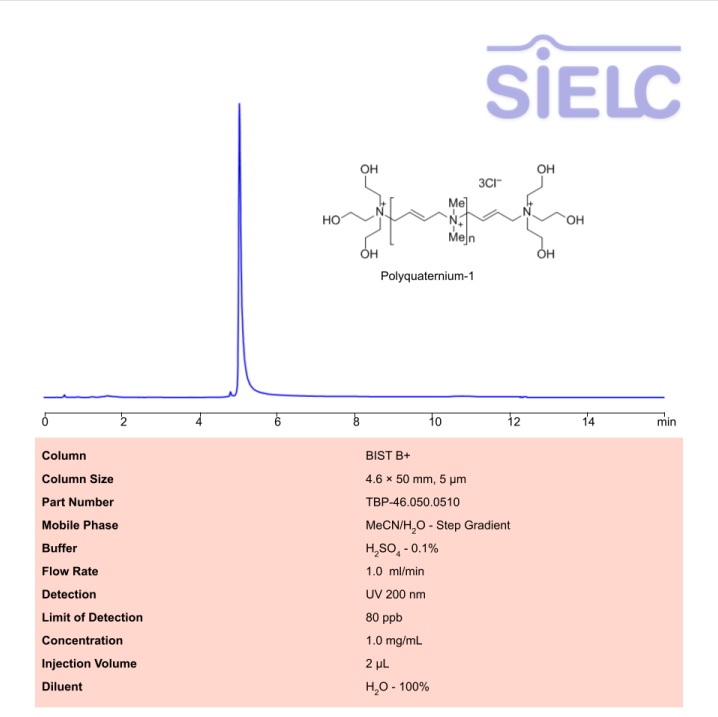
HPLC Method for Analysis of Polyquaternium-1 (Polidronium Chloride) Using a BIST B+ Column



Column	BIST B+
Column Size	4.6 × 50 mm, 5 µm
Part Number	TBP-46.050.0510
Mobile Phase	MeCN/H_2O - Step Gradient
Buffer	H_2SO_4 - 0.1%
Flow Rate	1.0 ml/min
Detection	UV 200 nm
Limit of Detection	80 ppb
Concentration	1.0 mg/mL
Injection Volume	2 µL
Diluent	H_2O - 100%

High Performance Liquid Chromatography (HPLC) Method for Analysis of Polyquaternium-1

Polyquaternium-1 , also known as Polidronium Chloride , is an antimicrobial preservative with the molecular formula C22H48Cl3N3O6 . It is used in ophthalmic products, skincare, and hair care.

Polyquaternium-1 can be retained and analyzed using the BIST B+ stationary phase column. The analysis utilizes a gradient method with a simple mobile phase consisting of water, acetonitrile (MeCN) and a sulfuric acid buffer. Detection is performed using UV.

Note : Step gradient methods involve sudden changes in mobile phase composition, which can cause baseline disturbances and system-related signals. To ensure accurate interpretation, integration, and data processing, it is necessary to account for this effect. A blank sample (sample diluent) must be analyzed prior to the sample of interest. After all chromatograms are generated, the blank chromatogram should be subtracted from the sample chromatogram before performing integration.

*LOD was determined for this combination of instrument, method, and analyte, and it can vary from one laboratory to another even when the same general type of analysis is being performed.

Mobile Phase Conditions

If using three channels on the instrument:

Channel C: H2SO41% in H2O

If using premixed mobile phase (two channels):

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Mobile Phase A: 0.1% H2SO4in MeCN/H2O (40:60)

Mobile Phase B: 0.1% H2SO4in H2O

Method Parameters

Column	BIST B+, 4.6 x 50 mm, 5 µm, 100 Å, dual ended
Mobile Phase	MeCN – Gradient
Buffer	Sulfuric Acid
Flow Rate	1.0 mL/min
Detection	UV 200 nm

Quelle: https://sielc.com/hplc-method-for-analysis-of-polyquaternium-1