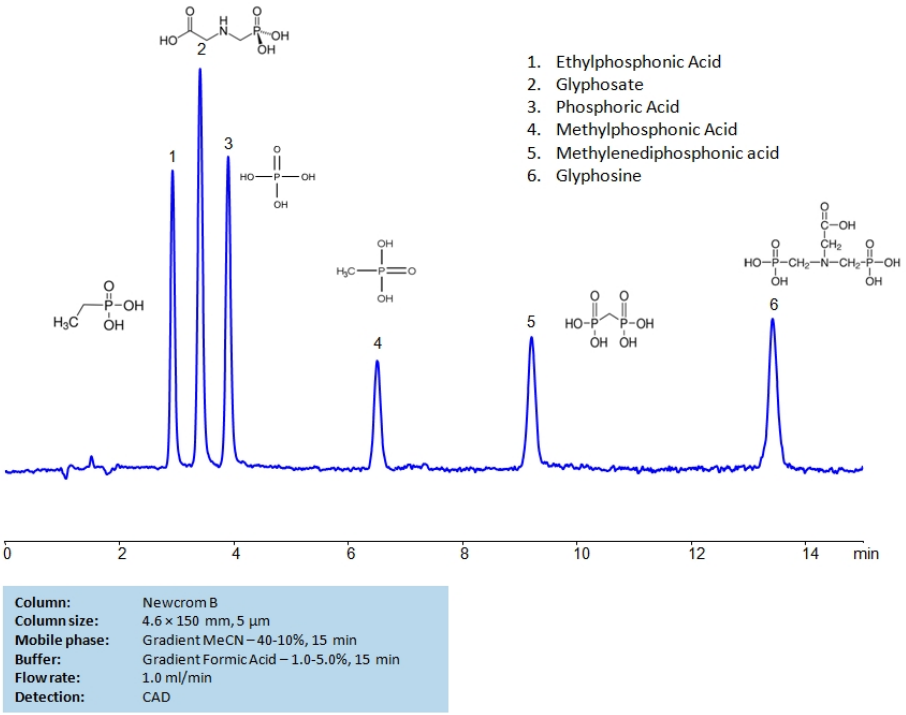
HPLC Separation of Glyphosate, Glyphosine, Ethylphosphonic, Methylphosphonic, Methylenediphosphonic and Phosphoric Acids on Newcrom B Column



Column:	Newcrom B
Column size:	4.6 × 150 mm, 5 µm
Mobile phase:	Gradient MeCN – 40-10%, 15 min
Buffer:	Gradient Formic Acid – 1.0-5.0%, 15 min
Flow rate:	1.0 ml/min
Detection:	CAD

High Performance Liquid Chromatography (HPLC) Method for Analysis of Ethylphosphonic Acid , Methylphosphonic Acid , Glyphosate , Glyphosine , Methylenediphosphonic acid , Phosphate , Phosphoric Acid .

Glyphosate is an herbicide with a chemical formula of C3H8NO5P . It works through blocking enzymes, like 5-enolpyruvylshikimate-3-phosphate synthase, essential for plant growth. It is typically found in agricultural work, but can occasionally be found in forestry and garden care.

Glyphosine is a synthetic plant growth regulator with the chemical formula of C4H11NO8P2 . It is a colorless liquid that works through decreasing chlorophyll production.

Ethylphosphonic acid has a C2H5P(O)(OH) 2 chemical formula. It is typically found as white crystals or crystalline powder. It is often used as an internal standard when researching fosfomycin in human plasma as well as a synthetic nucleotide analog.

Methylphosphonic acid is an organophosphorus compound with the chemical formula CH3P(OH) 2 . It is often used in some lubricant additives, textile treatments, and in synthesis of phosphonate compounds, like the previously mentioned Glyphosate.

Methylenediphosphonic acid has the chemical formula CH 2 [P(O)(OH) 2] 2 . It is typically seen as a precursor in synthesis of Mesoporous aluminum organophosphate, if alkyltrimethylammonium, and Tetraester of methylenediphosphonic acids.

Phosphoric acid is an inorganic compound with chemical formula H3PO4 . It is odorless and colorless, which leads to it’s common use in soft drunks to help preserve the product. It is also used in fertilizers,

metal treatment, and corrosion inhibition. Excessive intake of it is not recommended.

Ethylphosphonic Acid , Methylphosphonic Acid , Glyphosate , Glyphosine , Methylenediphosphonic acid , Phosphate , Phosphoric Acid can be retained and analyzed using the Newcrom B stationary phase column. The analysis utilizes an isocratic method with a simple mobile phase consisting of water and acetonitrile (MeCN) with a formic acid buffer. Detection is performed using CAD.

Method Parameters

Column	Newcrom B, 4.6 x 150 mm, 5 µm, 100 Å, dual ended
Mobile Phase	MeCN Gradient -40-10%, 15 min
Buffer	Formic Acid Gradient -1- 5%, 15 min
Flow Rate	1.0 mL/min
Detection	CAD

Quelle: https://sielc.com/hplc-separation-of-glyphosate-glyphosine-and-phosphoric-acid