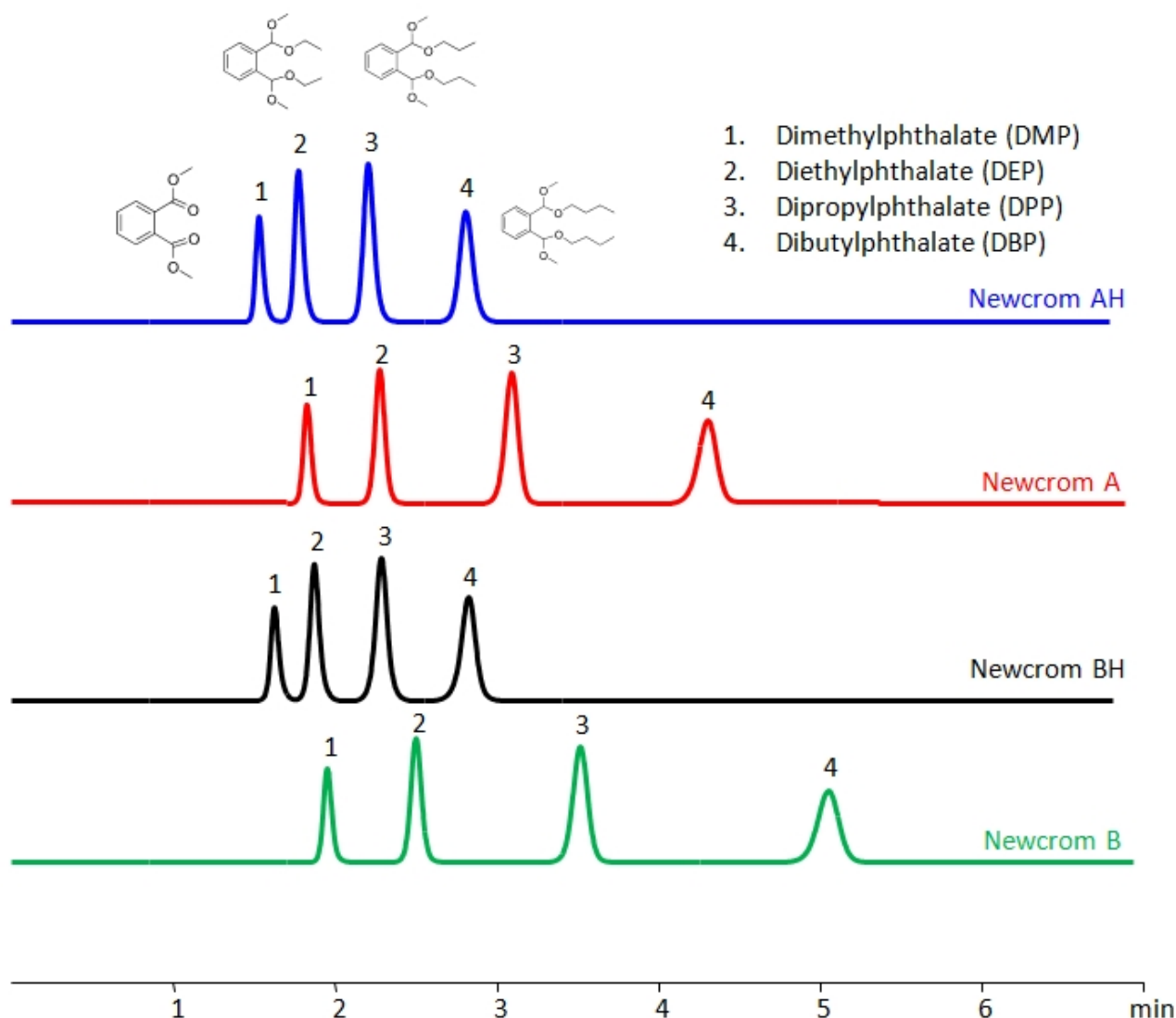


HPLC Separation of Phthalates

<https://sielc.com/hplc-separation-of-phthalates>

Chromatogram



Column size:	3.2 × 100 mm, 5 µm
Mobile phase:	MeCN – 50%
Buffer:	HClO ₄ – 0.1%
Flow rate:	0.5 ml/min
UV detection:	230 nm

Description

High Performance Liquid Chromatography (HPLC) Method for Analysis of Diethylphthalate (DEP) , Dimethylphthalate (DMP) , Dipropylphthalate (DPP) , Dibutylphthalate (DBP) .

Dimethyl Phthalate (DMP) is a phthalate ester with the chemical formula C₁₀ H₁₀ O₄ . It has a wide variety of uses from being an ingredient in insect repellent to being a part of safety glass and goggles. While it may appear similar to water, it is only soluble in organic solvents and not water. DMP is an irritant to eyes, nose, and throat through inhalation.

Diethyl Phthalate (DEP) is a phthalate ester with the chemical formula $C_{10}H_{10}O_4$. It is used as a solvent in perfumes, lotions, and creams. In medicine, it is used as an inactive ingredient for purposes of slowing down the release of active ingredients.

Dipropyl Phthalate (DPP) is a phthalate with the chemical formula $C_{14}H_{18}O_4$. It is used to increase the durability elasticity of plastics while also being a solvent for certain chemical applications. While its toxicity is low, it can still be dangerous, considering the risks of phthalates.

Dibutyl Phthalate (DBP) is a phthalate with the chemical formula $C_{16}H_{22}O_4$. It is used to increase the durability elasticity of plastics, as well as an ingredient in glues. DBP is an endocrine disruptor, which means that it affects hormone production.

Diethylphthalate (DEP), Dimethylphthalate (DMP), Dipropylphthalate (DPP), Dibutylphthalate (DBP) can be retained and analyzed using the Newcrom A stationary phase column. The analysis utilizes an isocratic method with a simple mobile phase consisting of water and acetonitrile (MeCN) with a perchloric acid buffer. Detection is performed using UV.

Method Parameters

Mobile Phase	MeCN/H ₂ O – 50/50%
Buffer	HClO ₄ – 0.1%
Flow Rate	0.5 ml/min
Detection	UV, 230 nm
Class of Compounds	Phthalates, Hydrophobic
Analyzing Compounds	Diethylphthalate (DEP), Dimethylphthalate (DMP), Dipropylphthalate (DPP), Dibutylphthalate (DBP)

HPLC Column Used

3.2×100 mm, 5 µm, 100A