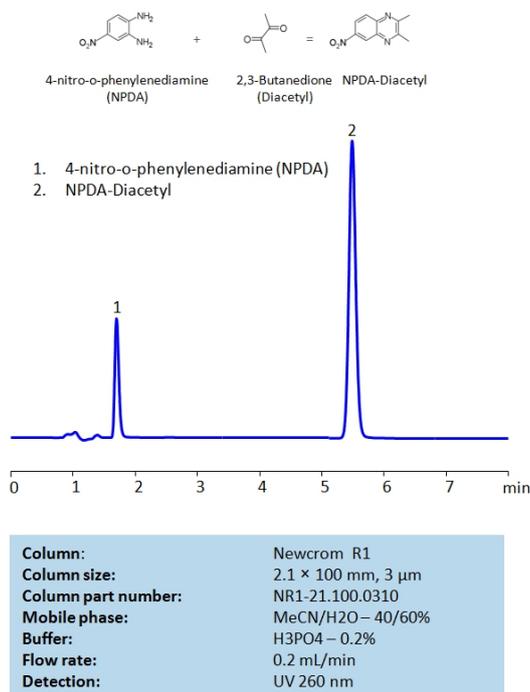


HPLC Determination of 2,3-Butanedione (Diacetyl) Using 4-Nitro-o-phenylenediamine as the Derivatization Reagent



High Performance Liquid Chromatography (HPLC) Method for Diacetyl.

Diacetyl is a natural by-product of fermentation and is known to be an important flavor compound in many food products. It is a reactive diketone in artificial butter flavors. The principal types of flavorings that use diacetyl are dairy flavors, particularly butter flavorings but also cheese, milk, and yogurt. Diacetyl is also sometimes an ingredient in the so-called brown flavors such as caramel, butterscotch, and coffee flavors.

The product of the derivatization of diacetyl with NPDA can be retained in HPLC on Newcrom R1 reverse-phase column with the simple isocratic mobile phase consisting of acetonitrile (MeCN), water and phosphoric acid (H₃PO₄). The analysis method can be UV detected at 260 nm.

Chemicals and Reagents

Derivatization Procedure

The total solution was sonicated for 20 minutes. The resulting solution was filtered through a 0.22 μm filter membrane and injected into the chromatographic system.

Method Parameters

| | |
|---------------------|---------------------------------------------------|
| Column | Newcrom R1, 2.1 x 100 mm, 3 µm, 100 Å, dual ended |
| Mobile Phase | MeCN – 40% |
| Buffer | H2SO4 – 0.2% |
| Flow Rate | 0.2 mL/min |
| Detection | UV 260 nm |

Quelle: <https://sielc.com/hplc-determination-of-23-butanedione-diacetyl-using-4-nitro-o-phenylenediamine-as-the-derivatization-reagent>