

Urea Analyzed by HPLC C18 in Aqueous Mobile Phase - AppNote

Date 7-May-201 Last Update: 11-FEBRUARY-2026

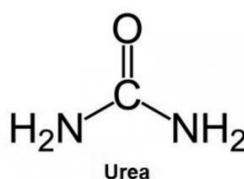
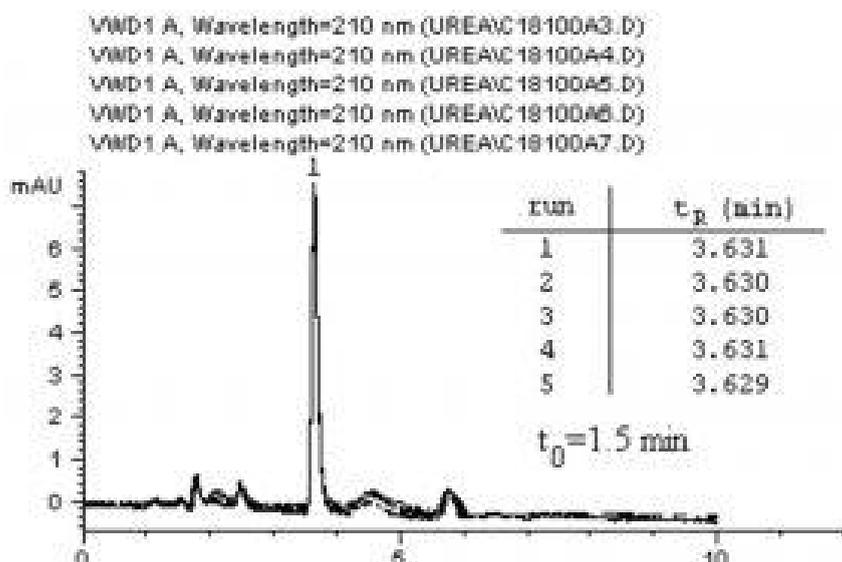
INTERNAL -

This App Note was reproduced and matched retention times, however, the solvent peak and peak of interest elute at the same time. A new Note has been made, Urea Analyzed by HPLC C18 in Aqueous Normal Phase - AppNote

Fast, Reproducible Method

In this Method Urea was retained when a 100% DI Water Mobile Phase was used. DI Water can be used as the complete Mobile Phase without fear of phase “de-wetting” and subsequent loss of retention time.

This Method has the advantage of being very simple, without time consuming derivatization or reaction steps when compared to other methods. Urea can be determined in complex mixtures using this fast, reproducible (see insert on the chromatogram) Method which could also be useful in the analysis of biological samples for diagnostic purposes.



Peak:

Urea

Method Conditions

Column: Cogent Bidentate C18™, 4µm, 100Å

Catalog No.: [40018-15P](#)

Dimensions: 4.6 x 150mm

Mobile Phase: DI Water (Isocratic run: 100% A)

Flow rate: 0.5mL /minute

Detection: UV @ 210nm

Injection vol.: 10µL

Sample Preparation: 1mg of Urea standard was added to 1ml of DI Water.

Note: *There is growing demand for a sensitive and reliable procedure for the determination of Urea in many matrices such as milk, soil extracts, seawater and wine. In addition there are several clinical applications for the analysis of this compound. The most common approach for measurement of Urea involves detection of ammonia (after hydrolysis) by color forming reactions – enzymatic, colorimetric Methods. The other techniques require noxious reagents and produce an unpleasant odor [1]. Newer Methods involve high-performance thin layer chromatography-densitometry, alkalimetric titration. HPLC is the most specific method but either organic Normal Phase Chromatography or Ion Pairing Chromatography have to be used to retain this very polar compound until this Method.*

[1] "Determination of urea using HPLC with fluorescence detection after automated derivatization with xanthyrol", S. Clark, P.S. Francis, X.A. Conlan, N.W. Barnett, J. Chromatography A, 1161 (2007) 207-213.



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