# EXTRACTIVE SPECTROPHOTOMETRIC DETERMINATION OF BENZYLPENICILLIN IN THE INJECTION FORMULATION.

BY

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# ABSTRACT

The β-lactam ring of the benzylpenicillin molecule is split by reaction with hydroxylaminehydrochloride (2 % w/w), gives a corresponding hydroxamic of the benzylpenicillin acid that is extractable into n-butanol. The n-butanol extract (hydroxamic acid) reacts with vanadium (V) in pH 4.0 ($NH_3$ + $H_2SO_4$) and forms orange-red colour complex possessing an absorption maximum at 445 nm. The molar absorptivity of the complex under optimum conditions at 445 nm was

$2.2 \times 10^2$ $dm^3mol^{-1}cm^{-1}$. The system obeys Beer's law over the concentration range of BPS $2.83 \times 10^{-4} - 28.20 \times 10^{-4}$ mol $dm^{-3}$

The proposed method consists of two extractions and validation of the method is employed using a standard method available in BP (2000) which is a High Performance Liquid Chromatography method.

Application of the proposed method to the determination of benzylpenicillin sodium in several branded products have been investigated and results were compared with the standard method with good satisfactory agreement.

The proposed method is simpler than the automated hydroxylamine method for antibiotic in USP for routine analysis and it requires less test materials, can be employed in any normal quality control laboratory as a routine test because it requires only a colorimeter.