

A simple and rapid enzymatic analysis for L-glutamine and ammonia in a variety of biological fluids, e.g. for the monitoring and control of culture media and fermentation processes in biotechnology.

Bulletin Reference	TB – USA – Glutamine – Industrial – GMRD-151 – V.01
Order Code(s)	GMRD-151
Reagent Kit Size(s)	100 ml (140 analyzer cycles)
Instruments	All GM8 series analyzers
Samples	Aqueous solutions (pH 5 - 7), culture fluid, etc.
Sample Volume	25 µl
Analysis Time	20 seconds (from injection)
Working Range	0.5 - 20 mmol/L
Reagent Stability	Shelf-life unopened: 9 months stored at 0 - 5°C. Shelf-life reconstituted: GLDH/NADH/α-ketoglutarate, 7 - 10 days stored at 0 - 5°C; POD reagent 5-6 weeks at 0 - 5°C.
Note	2 vials of enzyme reagent are provided to maximize kit life. Sample opacity or turbidity presents no problem since the detection method is electrochemical rather than spectrophotometric.

## Principle

i) L-glutamine is converted to ammonia and L-Glutamate by the enzyme glutaminase (GLU) in a brief pre-reaction,



ii) Ammonia, either endogenous or liberated in the above reaction, forms L-glutamate with α-ketoglutarate in the presence of glutamate dehydrogenase (GLDH) and excess NADH,



iii) Under the conditions of the assay, the rate of oxidation of excess NADH by peroxidase (POD) is inversely proportional to the total ammonia present.