

A rapid high performance analysis for Alcohol (Ethanol).

Bulletin Reference	TB – Alcohol – Clinical – GMRD-113 – V.01
Order Code(s)	GMRD-113, GMRD-113J, GMRD-113CJ
Reagent Kit Size(s)	50 ml (70 analyser cycles), 8 x 50 ml (8 x 70 analyser cycles), 4 x 175 ml (4 x 250 analyser cycles)
Instruments	All GM7, AM1 and GL5 series analysers
Samples	Plasma, serum, urine, precipitated whole blood (neutralised)
Sample Volume	5 µl (variable 2.5 - 10 µl)
Analysis Time	20 seconds
Linearity	43.0 mmol/L (ca. 200 mg/dl) for 5 µl samples; 86.0 mmol/L (ca. 400 mg/dl) for 2.5 µl samples
Detection Limit	1 mmol/L (ca. 4.5 mg/dl)
Precision (Within Run)	C.V. of 2.5 % @ 18.5 mmol/L (ca. 85 mg/dl) (whole blood)
Accuracy	i) Method comparison for whole blood (neutralised PCA extract) vs GC: y (Analox) = 1.039x + 0.28 mmol/L, r = 0.991, n = 27 ii) Urine Recovery Data: y (Analox) = 0.981x + 0.19 mmol/L, r = 0.999, n = 17
Reagent Stability	Shelf-life unopened: 6 months stored at 0 - 5°C. Shelf-life reconstituted: AOD/buffer reagent, ca. 5 days stored at 0 - 5°C.
Note	Alcohol oxidase is non-specific towards ethanol. This assay will also detect other low molecular weight alcohols, e.g. methanol.

Principle

In the presence of molecular oxygen, ethanol is oxidised by the enzyme alcohol oxidase (AOD) to acetaldehyde and hydrogen peroxide,



Under the conditions of the assay, the rate of oxygen consumption is directly proportional to ethanol concentration.