



Gas Analysis

GC Coupling with Hiden's HPR-20 QIC Gas Analysis System

Summary

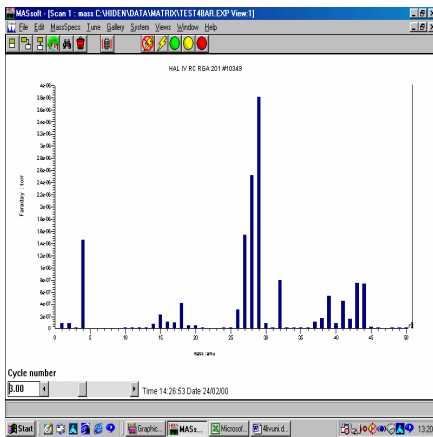
The following applications data is obtained from Hiden's HPR-20 Atmospheric Gas Analysis MS with unique quartz inert capillary inlet (QIC). The HPR-20 QIC inlet features dedicated sample bypass for optimum sensitivity selection across a wide range of flow conditions and superior response to permanent gases and vapours alike.

Manufactured in England by:

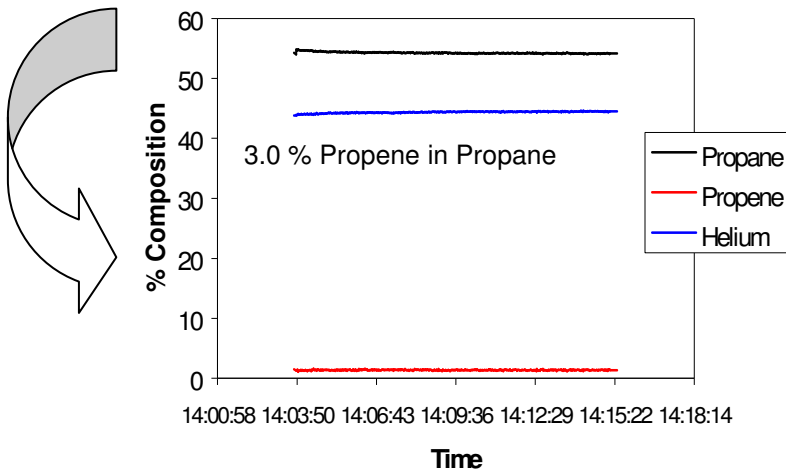
HIDEN ANALYTICAL LTD
420 Europa Boulevard, Warrington, WA5 7UN, England
t: +44 (0) 1925 445225 f: +44 (0) 1925 416518
e: info@hiden.co.uk w: www.HidenAnalytical.com

Propane Oxidation to Acrylic Acid

In this reaction the reactants are propane, oxygen and water. The oxygenated product compounds (acrolein, allyl alcohol, acrylic acid.....) are separated by multicapillary GC columns and the permanent gas products (CO, CO₂, propane and propene) are identified with Hiden's HPR-20 Mass Spectrometer system.

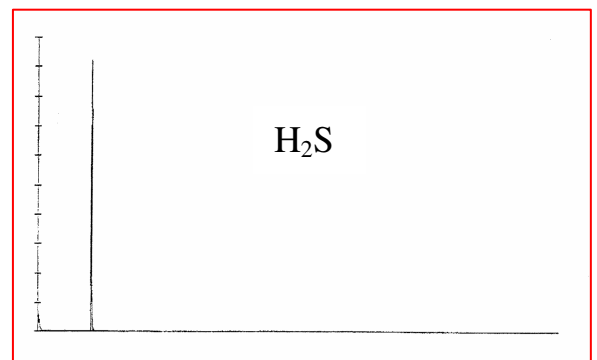


This plot shows a convoluted spectrum from which the various components are identified by use of a matrix inversion technique to provide the % composition traces below.



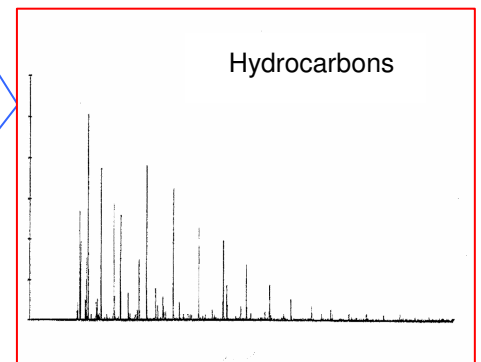
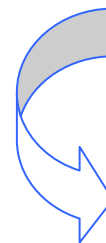
Sealed Vessel Pyrolysis of Kerogen

The following traces are sealed vessel pyrolysis products obtained from kerogen concentrates which range from C1 to C30+ and include various gas components. The column was a 50 metre OV-1 fused silica capillary column of 0.32 mm ID. Helium was used as the carrier gas. An open split coupling system was used between the GC and the HPR-20 MS ion source.



Mass 34 Vs time

The chromatograms show the time response (x-axis) of the HPR-20 when set to monitor mass 34, and mass 57.



Mass 57 Vs time