Mayura Analytical LLP
Specialists in Analytical Instrumentation

Gas Chromatograph - Model DGA II

Gas Chromatography system for Dissolved Gas Analysis

*Mayura Analytical LLP is a leading organisation in analytical instrumentation that provides solutions to research institutions and industries to diagnose and resolve their analytical needs. Our pioneering products are made in India for the Indian market and beyond since our inception in 1984. We are widely acknowledged for our approach to chemical analysis and to customer troubleshooting. As recognised suppliers of analytical equipment to the **Indian Institute of Science (IISc), Bangalore and Indian Institute of Technology (All India**), preeminent research and technology institutions of India as well as large industries such as **BIOCON**, we have cemented our standing in the market with our cutting edge expertise and solution focussed approach.*

In Dissolved Gas Analysis, the most common problem of the complex gas mixture analysis is the separation of H_2, O_2, CO and CO_2 mixture without requiring multiple injections and analyses (this complexity is recorded even by ASTM). The *Mayura Analytical DGA-II* has proved to be the most economical solution for the analysis of H_2, O_2, N_2, CO, CO_2, CH_4, C_2H_2, C_2H_4 and C_2H_6 mixture using a _single injection technique_. The column switching mechanism has ensured that the analysis to detect very low to very high PPM levels can be achieved at the press of a button on the sample injection. **Central Power Research Institute (C.P.R.I, Bangalore), TransGear, JSW Steel, Excel Industries**, **TELK Cochin** and many other transformer oil analyses laboratories have proven to be successful as a result of our techniques and unique design.

Features of the digitally controlled and computer interfaced GC

- Single shot injection technique for the analysis of H_2, O_2, N_2, CO, CO_2, CH_4, C_2H_2, C_2H_4 and C_2H_6 mixture
- Dual column with dual detection technology
- Simultaneous TCD and FID analysis - all done in one injection
- Built in Methanator
- Built in auto column selector to detect very low to very high PPM levels
- Auto data collection system

Specifications

Column oven[1]

- Air circulated compact oven to accommodate 2 packed columns

- Dimensions   :   200 x 170 x 150 mms (Height x Width x Depth)

- Volume   :   5.1 litres

- Temperature Range   :   5°C above ambient to 200°C and above as required up to a maximum of 400^0C
  Accuracy of $\pm$ 0.1°C

Injection system

- Packed Columns (1/8" O.D) Hayasep A and Molecular Sieve 13x

Detectors

Flame Ionisation Detector

- High sensitivity ionisation electronic amplifier with range control

- Signal output   : $\pm$ 1 Volt

- Signal range   :   High and Low

- Sensitivity   :   1 PPM Methane

Thermal Conductivity Detector

- Four filament (Gow-Mac) 32 Ohms Wheatstone network with reference flow in and flow out with auto cut off when gas pressure drops

- Amplifier with High and Low range control with high sensitivity in PPM range

- Range   :   High and Low

- Signal output   : $\pm$ 1 Volt

- Sensitivity   :   Less than 1 PPM Oxygen

Methanator[1]

- High Capacity low dead volume unit with temperature controller

- High efficiency catalyst with catalyst life of minimum 5 years

- Temperature setting of ambient to 400°C

- Temperature Setting   :   0.1°C

- Temperature Accuracy   :   Better than ±0.2°C

Pneumatics (Digital Pressure Display)

- Carrier gas (Argon/Helium) :   0-4 Kg/cm² pressure regulator for main carrier and column with imported differential flow controllers and digital pressure gauge of 0.1 PSI resolution

- Hydrogen   :   0-4 Kg/cm² with fixed flow restrictor and digital pressure gauge of 0.1 PSI resolution

- Air   :   0-4 Kg/cm² with fixed flow restrictor and digital pressure gauge of 0.1 PSI resolution

- Accuracy   :   ± 0.2 PSI

- Flow range   :   0 – 99 ml/min with accuracy of ± 1 ml

Column Switching Unit

- Auto column switching with timer control of 0 – 999 seconds

- Auto column switching with motorised mechanism for high speed column switching

- Reversal after each analysis.

- Molecular Sieve Column should work for minimum 6 months before each conditioning with continuous usage of up to 20 injections per day

[1] Optional computer connectivity via RS232 port for Column Oven and Methanator