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QUALITEST™

Gas Chromatography Tester

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Gas Chromatography Tester - QT-GCH-9800

QT-GCH-9800 Gas Chromatography Tester is designed to separate organic solvents. It can test solvent residues of printed packaging material or the purity of a single solvent.

APPLICATIONS

The QT-GCH-9800 Gas Chromatography Tester is engineered for the separation and quantitative analysis of organic solvents, making it an ideal solution for quality control in industries such as flexible packaging, pharmaceuticals, chemicals, and environmental monitoring.

This system is particularly useful for detecting residual solvents in printed packaging materials and for verifying the purity of individual solvents used in production. Its stable temperature control and programmable heating capabilities allow for precise, repeatable analysis under various testing conditions.

The unit supports a wide range of detectors and sample injection options, giving users the flexibility to adapt the system to specific test requirements. This makes it a valuable tool in both research laboratories and industrial QC settings where accurate chromatographic analysis is essential.

Whether applied to regulatory compliance, material validation, or product development, the QT-GCH-9800 provides a reliable platform for detailed solvent analysis with minimal operator effort.

FEATURES

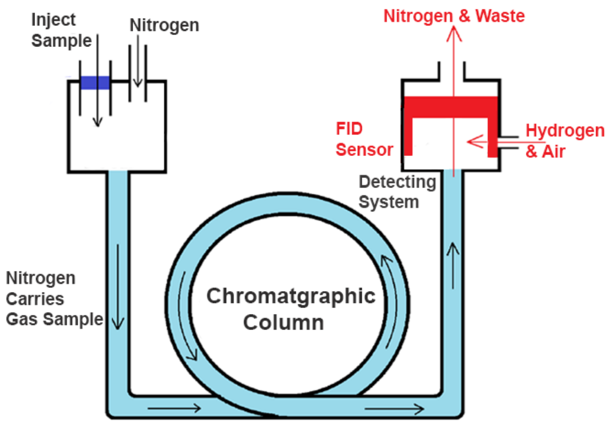
- Four-way microcomputer temperature controller with digital display.
- Two set of commonly used detectors are optional at the same time.

- Temperature can be maintained close to room temperature (room temperature +10°C).
- Oven column with large capacity has auto opening door in the back. Machine can perform three-period program heating.
- Optional configurations: packed column sample injector, capillary column sample injector, gas sample injector etc.
- With self-diagnosis function, fault location and fault nature can be displayed at any time.
- Over temperature protection. When temperature (any way of the four ways) exceeds the set value, the heating will stop automatically.

THEORY & METHOD

Carrier gas from the gas cylinder (or the gas generator) flows out through the pressure reducer . After the disposal of gas purifier, removing moisture and oxygen, it flows into the instrument from the carrier gas entrance joint and passes through stabilizing pressure valve, needle valve (or steady flow valve) and manometer.

Finally, it flows into the vaporizer at a constant flow rate. Of course, liquid sample will be vaporized to gas sample after being injected into vaporizer with micro injector. Later, it will be separated through the chromatographic column.



When using TCD, carrier gas with the separated fractional compositions enters into TCD one after another. Due to the different thermal conductivity coefficient between carrier gas and the compositions, original thermal balance of tungsten-rhenium component in the TDC is destroyed. Accordingly, bridge circuit generates the corresponding electric signals, which is direct proportional to componential concentration, and recorded by recording meter, chromatographic data processor or chromatographic working station.

When using FID, the analyzed compositions are brought into ion chamber by carrier gas one by one. Under the help of Air, those compositions will meet the hydrogen gas at the quartz nozzle entrance and will combust while flowing out of the nozzle. If organic compositions containing C and H element burn in the hydrogen flame, the C and H will be ionized to positive ion and electron, thus weak ion current will be produced because of high-voltage between the two poles in nozzle.

The voltage signals can be taken out from a high resistance (107-1010Ω). After amplified, the recording meter will record it, and then we can make qualitative and quantitative analysis. Gas sample can flow into gas circuit through flat six-way valve. To macromolecule material sample, cracking injection way can be used.

TECHNICAL SPECIFICATIONS

Model	QT-GCH-9800
Temperature Range	Room temperature +10°C to 400°C
Temperature Accuracy	±0.5%
Temperature Resolution	0.1°C
Temperature Rise Speed	0~39°C /minute
Program Period Number	3 Period
Repeatability of Temperature Programming	≤1%
Oven Column Dimensions	250 × 250 × 180mm (L × W × H)
Unit Dimensions	500 × 540 × 480mm (L × W × H)
Unit Weight	35kg
Power	1500W

	Thermal Conductivity Detector (TCD)	Flame Ionization Detector (FID)	Electron Capture Detector (ECD)	Flame Photometric Detector (FPD)
Sensitivity (limitation of detection)	≥3000mv.mL/mg (benzene)	≤1×10-11g/s (hexadecane)	1×10-13g/ml(γ-666)	5×10-12g/s(P) 5×10-11g/s(S)
Baseline Noise	≤10μV	≤1×10-13A	≤40μV	≤40μV
Baseline Shift	≤60μv /30min	≤6×10-13A/30min	≤100μv/30min	≤100μv/30min
Linearity Range	105	107	104	104
Settling Time	≤2h	≤1h	≤2h	≤1h

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