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5370 XSD

Halogen Specific GC Detector

The 5370 Halogen Specific Detector (XSD) was developed for the selective detection of halogen-containing compounds eluting from a GC capillary column in the subpicogram to microgram range. The XSD installs in the standard detector port of most GC brands and models.

The 5370 XSD heated base assembly provides improved baseline stability and easy column installation. This detector offers enhanced venting that is nearly 100% efficient, even in the case of a chlorinated solvent injection. Unlike other halogen selective detectors, the XSD contains no radioactive source and does not use organic solvents. XSDs do not require catalyst tubes, solvents, resin cartridges, pumps, or transfer lines. Wipe testing and complicated record keeping are eliminated.

Principal Applications

- Pesticides
- PCBs
- QA/QC Testing
- Mobile/Field Lab
- Process Control/Testing
- Residual Solvents

Operating principal

The reactor is operated in an oxidative mode, pyrolyzing the effluent from a GC column. This oxidative pyrolysis efficiently converts compounds containing halogens to their oxidation products and free halogen atoms.

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The cathodic surface is activated by neutralization of alkali ions emitted from the anodic surface. The adsorption and reaction of free chlorine atoms with this alkali-sensitized cathodic surface yields an increased thermionic emission comprised of free electrons and halogen ions. The total cathodic current is measured by the 5370 electrometer and converted to a 0-1 V or 0-10V output signal, which can be readily coupled to a chromatographic data handling system.

XSD™ Capabilities

- High halogen selectivity vs. hydrocarbons keeps sample preparation to a minimum.
- High detector sensitivity permits very low-level selective analysis of halogen-containing (Cl, Br, F) compounds.
- Unique jet design minimizes peak tailing due to unswept dead volumes.
- Requires only air to operate.
- Designed to operate on most GC brands and models.
- No routine maintenance required.

5370 XSD™ Specifications

Dynamic range	> 10^5
Linear range	> 10^4
Detectivity	<1 pg Cl/second
Selectivity	Cl:HC > 10^4
Reactor operating temperature	900-1100 ˚C in 100 ˚C increments
Flow rate	20-30 mL/min air
Communications signal output	0-1 V or 1-20 V
Gas requirements	Air 20-30 mL/min (ultrahigh purity)
Power requirements	90-260 (±10%) VAC, 47-63 Hz, 200 W
Controller dimensions	21.2 cm H x 12.8 cm W x 30.8 cm D (8.25” H x 5.0” W x 12.0” D
Weight Controller Detector	3 kg (5.5 lb) 3.8 kg (8.4 lbs) 0.36 kg (0.8 lbs)

Note
Performance is affected by several factors, including GC, column, gas flow rate, gas supply, compound class, and reactor temperature.

Reactor
1000 ˚C

Column
Rtx® - 5 30 m x 0.32 mm I.D.
x .25 mm film thickness

Gases
2 mL/min Carrier; 20 mL/min Air

Oven
Rtx® - 502.2, 105 m x 0.53 mm I.D.
x 3.0-µm film thickness

Sample
1 mL split 10:1

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