

5360/5360A XSD™

HALOGEN SPECIFIC GC DETECTOR

The 5360 and 5360A Halogen Specific Detectors (XSD™) were 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 5360A XSD heated base assembly provides improved baseline stability and easy column installation. The enhanced venting option attains a venting efficiency of nearly 100%, 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.



Operating Principle

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.

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 5360/5360A 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. hydrocarbon simplifies analyses and minimizes or eliminates the need for sample preparation
- 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
- Enhanced venting option diverts solvent before entry into reactor

Principal Applications

- Halogenated compounds
- Volatile Organic Compounds
- Pesticides
- PCBs
- QA/QC testing
- Field GC detector
- Process control/testing
- Residual solvents

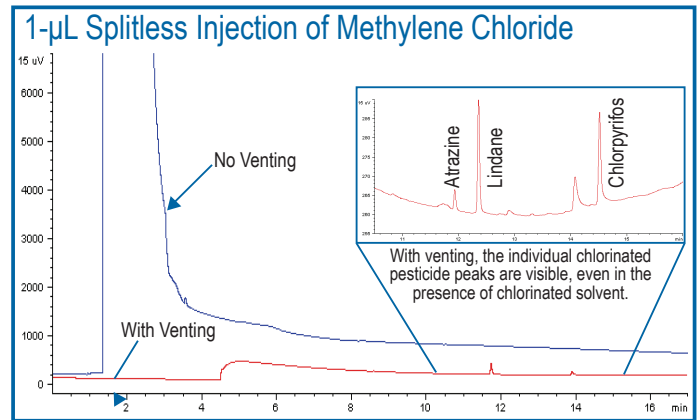
Specifications

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 1-10V
Gas Requirements	Air 20-30 mL/min (ultrahigh purity)
Power Requirements	90-260 (±10%) V _{AC} , 47-63 Hz, 200W
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	3 kg (5.5 lb)
Controller	3.8 kg (8.4 lbs)
Detector	0.36 kg (0.8 lbs)
Options	Venting Option

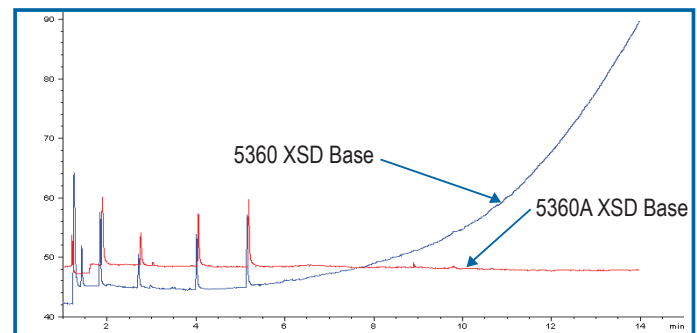
Note

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

Venting Capability Demonstrated by Complete Venting of a 1-µL Splitless Injection of Methylene Chloride (Pesticide Analysis)



OI Analytical VOC Test Standard Diluted 1:100 in Acetone



Detector

5360A XSD compared to 5360 XSD

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

50 °C for 1 min,
to 50-250 °C at 20 °C/min,
hold at 250 °C for 5 min

Sample

1 mL split 10:1



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