

## Popular GC Detectors

Detector	Description	Sensitivity	Limit of Detection	Dynamic Range	Linearity Range
PID	Photo Ionization Detector	Ions compounds by photo dissociation	$10^{-12}$ g/s	$10^7$	$10^6$
FID	Flame Ionization Detector	Most organic compounds	$10^{-12}$ g carbon/s	$10^7$	$10^7$
TCD	Thermal Conductivity Detector	Universal	$10^{-9}$ g/mL	$10^5$	$<10^5$
NPD	Nitrogen/Phosphorus Detector	Nitrogen or phosphorus	$10^{-12}$ g nitrogen/s	$10^5$	$10^5$
FPD	Flame Photometric Detector	Phosphorus or sulfur	$10^{-13}$ g phosphorus/s $10^{-12}$ g nitrogen/s	$10^4$ $10^3$	$10^4$ for p Non-linear for S
ECD	Electron Capture Detector	Halogens, nitrates and conjugated carbonyls	$10^{-14}$ g/mL	$10^5$	$10^4$
SCD	Sulfur Chemiluminescence Detector	Sulfur	$10^{-12}$ g sulfur/s	$10^5$	$>10^4$
NCD	Nitrogen Chemiluminescence Detector	Nitrogen	$10^{-12}$ g nitrogen/s	$10^5$	$>10^4$
AED	Atomic Emission Detector	Atomic emission	$10^{-12}$ - $10^{-10}$ g/s	$10^3$ - $10^4$	$10^3$ - $10^4$
MS	Mass Spectrometer	Ionized Molecular Fragments	$10^{-13}$ g	$10^6$	$10^6$
ICP-MS	Inductively Coupled Plasma Mass Spectrometer	Ionized Atom	$10^{-14}$ g/s	$10^6$	$10^6$
ELCD	Electrolytic Conductivity Detector	Halogens	$10^{-15}$ g/s	$10^6$	$10^5$
IRD	Infrared Detector	Molecular vibrations	$10^{-9}$ g/mL	$10^5$	$10^4$

Source: <https://www.sepscience.com/Techniques/GC/Articles/831-/GC-Solutions-4-GC-Detectors>