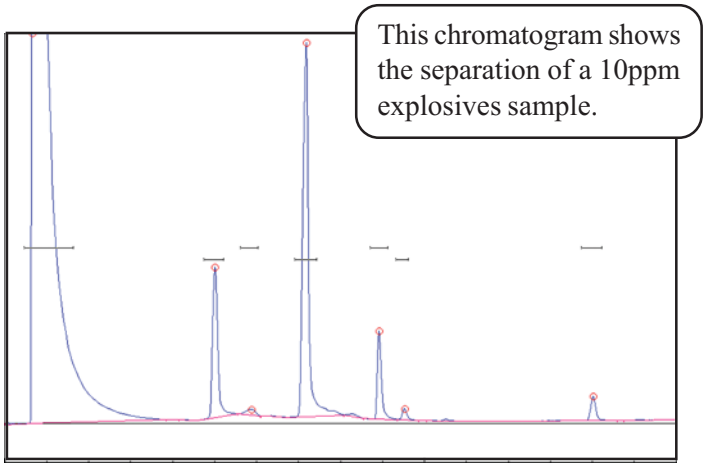
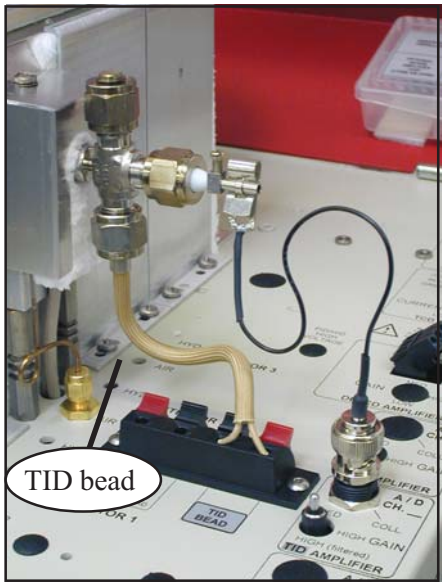
TID - Thermionic Ionization Detector

- **Highly Selective to Nitro Functional Groups**
- **Also responds to chlorinated phenols**
- **Detects down to 1ppb**
- **Convenient bead design**
- **Can be run Gasless in the field!**



This chromatogram shows the separation of a 10ppm explosives sample.



The TID is similar in design to the FID and NPD. The electrically heated thermionic bead (TID bead) is positioned so that the column effluent contacts the hot bead surface. Analyte molecules containing NO_2 (nitro) functional groups such as TNT (trinitrotoluene) undergo a catalytic surface chemistry reaction. The resulting ions are attracted to a collector electrode, amplified, and output to the data system.

The Thermionic Ionization Detector is extremely selective, having little or no response to most aromatic and aliphatic hydrocarbons. The TID also responds to chlorinated phenols such as pentachlorophenol (PCP) at slightly less sensitivity.

For best sensitivity, the TID requires air for operation. If air is used as the carrier gas, no other detector gases are required. An air makeup gas is provided so that nitrogen or another gas can be used as a carrier. The TID can also be operated in a nitrogen only environment with similar but not identical response characteristics.

(ETV) program for measuring explosives in soil!
Tested by the EPA's Environmental Technologies Verification

Download the ETV report and verification statement at www.epa.gov/etv/verifications/vcenter1-4.html
Also, download "On-Site Characterization of Explosive Residues in Soils and on Range Scrap Using GC-TID Analysis" by Alan Hewitt of the US Army Corps of Engineers at www.srigc.com

8690-0017	**TID detector**