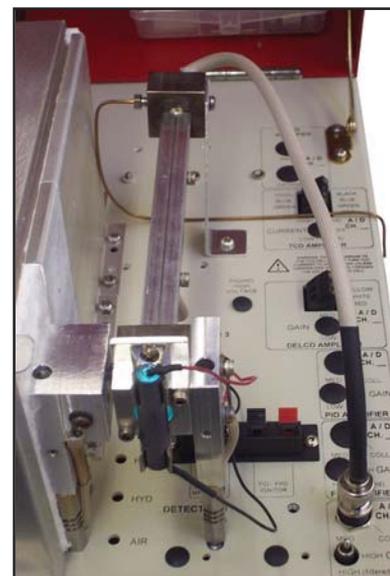


RGD - Reduction Gas Detector

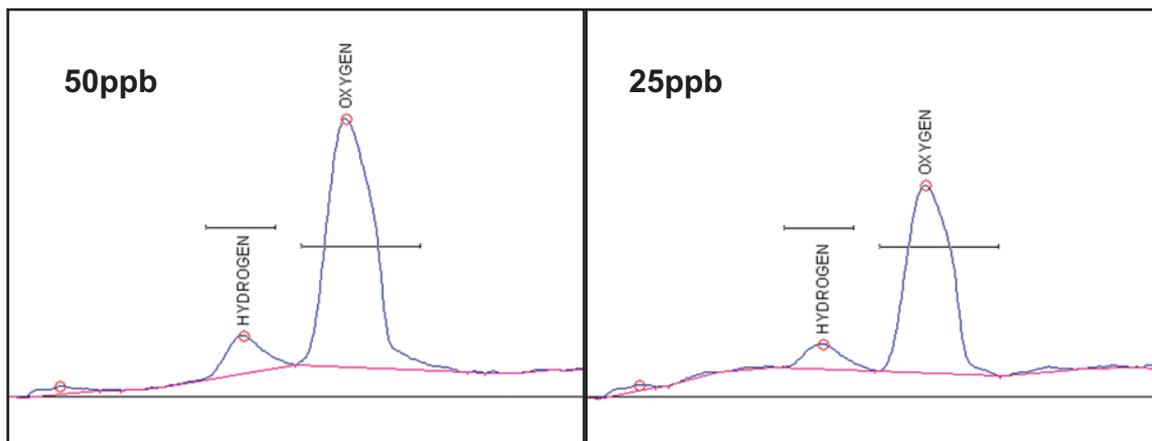
- **Detects Reducing Gases like hydrogen and CO down to the ppb level**
- **Heated UV detection cell with Absorbance Output**
- **User replaceable Reaction Tubes**

The SRI Reduction Gas Detector is sensitive to volatile reducing compounds down to the ppb level, and is often used to detect atmospheric CO and hydrogen. When compared to the FID detector, the RGD is 10 times more sensitive to unsaturated hydrocarbons. The RGD is also virtually unresponsive to saturated hydrocarbons. This combination of sensitivity and selectivity allows the analysis of atmospheric pollutants such as ethylene, benzene, carbonyl sulfide, phosphine, and methanol.

The SRI RGD uses a mercuric oxide reaction tube and a mercury lamp in a heated UV detector cell. When a reducing gas elutes from the column into the hot reaction tube, it reacts with the mercuric oxide to form mercury vapor. As it flows through the detector cell, the gaseous mercury absorbs the UV light from the mercury lamp inside the cell. The change in transmittance is converted by the data system into an absorbance output which is proportional to the amount of reducing gas.

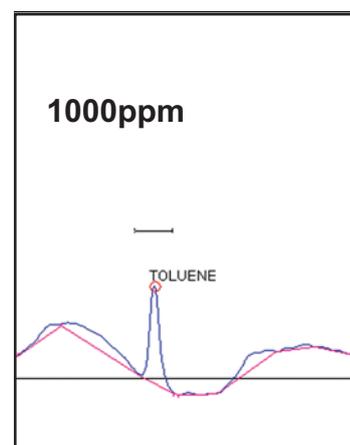


These chromatograms were produced by an SRI GC equipped with an RGD detector. Room air samples were diluted with nitrogen in Tedlar bags, then injected by gas sampling valve onto a Molecular Sieve packed column.



High concentrations of chlorinated and aromatic compounds can contaminate the mercuric oxide bed, resulting in the need for replacement. Reaction tubes are easily replaced, and blank reaction tubes can be economically packed by the user. Because this detector is designed for trace detection, the RGD exit tube is not factory equipped with a mercury vapor filter. Depending on the concentration of the reducing gases in the sample, you may want to add a filter for safety. The amount of mercury vapor produced is proportional to the concentration of reducing gases in the sample.

When operated without the Reaction tube, the RGD may be used as an aromatic selective UV detector. The chromatogram at right was produced by an RGD detector in UV mode. The RGD responds to the 1000ppm toluene in the sample, but is blind to nonaromatic compounds.



8690-0009

RGD detector

8670-0010

Blank reaction tube and sealing frits