

Gas Tension Devices

Gas Tension Devices

Gas Tension Device (GTD) instruments measure total dissolved gas pressure. The total dissolved gas pressure in seawater is the sum of the partial pressures of all dissolved gases. The GTD works by equilibrating a small volume of air trapped behind a semi-permeable membrane that is resistant to seawater. When the air sample is isolated from hydrostatic pressure, the measured pressure is solely from the gases in the seawater. This internal pressure is measured using a very stable pressure sensor. Using the total pressure of all gases, the partial pressure of nitrogen is estimated by subtracting the partial pressure of oxygen (and by making some assumptions for other gases such as CO₂).