



## Total Dissolved Solids

### ***What are Total Dissolved Solids?***

Total Dissolved Solids (TDS) refers to the combined content of all inorganic and organic substances present in water. These substances can include:

- Salts
- Minerals
- Metals
- Ions

TDS is typically measured in milligrams per liter (mg/L) or parts per million (ppm). Water with high TDS may appear cloudy and can have an unpleasant taste.

### ***What is the Significance of Total Dissolved Solids?***

Understanding TDS is crucial for assessing water quality in various contexts. High TDS levels can indicate pollution, while low levels can signify good water quality. Key points include:

- **Drinking Water:** High TDS can affect taste and health.
- **Aquatic Life:** Certain species thrive in specific TDS ranges.
- **Agriculture:** TDS affects soil quality and crop growth.

### ***How Does a Total Dissolved Solids Sensor Work?***

TDS sensors work by measuring the conductivity of water. Conductivity increases with the concentration of dissolved solids. Here's how it works:

1. **Electrodes:** The sensor has two electrodes that measure electrical conductivity.
2. **Conductivity Calculation:** The sensor converts conductivity readings into TDS values using a conversion factor.
3. **Display:** The TDS level is displayed in mg/L or ppm.

### ***Why Should You Measure Total Dissolved Solids?***

Measuring TDS is essential for several reasons:

- **Health Safety:** Ensures drinking water is safe.
- **Environmental Monitoring:** Helps assess the health of aquatic ecosystems.
- **Agricultural Practices:** Guides irrigation and crop management.

### ***Extension activities***

- [Conductivity and Circuits](#)
- [Save Our Shoreline](#)

### ***More information / additional resources***

- [Chloride, Salinity, and Dissolved Solids | U.S. Geological Survey \(usgs.gov\)](#)
- [What is TDS in Water & Why Should You Measure It? | Los Angeles Public Library \(lapl.org\)](#)
- [EPA Water Quality Standards](#)
- [Understanding TDS in Water \(Video\)](#)
- [TDS and Its Impact on Aquatic Life](#)

## Glossary





- **Conductivity:** A measure of how well water can conduct an electrical current, often related to the concentration of dissolved solids.
- **ppm (parts per million):** A unit of measurement used to express very dilute concentrations of substances.
- **Electrodes:** Conductive materials that are used in sensors to measure electrical properties of solutions.

