TOTAL DISSOLVED SOLIDS (TDS)
TECHNICAL ASSESSMENT GUIDELINES

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1.0. What is TDS?

Total Dissolved Solids (TDS) is a measure of the combined amount of dissolved inorganic and organic substances in a liquid. In simpler terms, it tells you how much stuff is dissolved in your water, excluding the water molecules themselves. These dissolved substances can include minerals, salts, metals, and organic matter. TDS is usually measured in parts per million (ppm).

2.0. What is the Normal TDS of Water?

There isn't a single "normal" TDS level for water. The concentration of dissolved solids can vary greatly depending on the source of the water. Here's a breakdown of how TDS can differ:

2.1. **Freshwater:** Generally considered to have a TDS below 1,000 ppm.

2.2. **Brackish Water:** This water falls between 1,000 ppm and 10,000 ppm of TDS. It's a mix of fresh and saltwater and may not be suitable for drinking without treatment.

2.3. **Saline Water (Ocean Water):** TDS in seawater can range from 10,000 ppm to 35,000 ppm. High salinity makes it unsuitable for drinking.

2.4. **Hypersaline Water:** This water has a TDS exceeding 35,000 ppm and is saltier than seawater. Even within freshwater sources, TDS levels can vary. Natural springs and wells picking up minerals from rocks can have a higher TDS than rainwater or surface water from lakes and rivers. Additionally, municipal water supplies may have minerals added during treatment, slightly elevating TDS levels.

3.0. What is a Good TDS Reading for Drinking Water?

The World Health Organization (WHO) recommends a TDS level below 500 ppm for optimal drinking water quality. However, it's important to understand that TDS is not the only factor affecting water quality. The following is a closer look at what TDS levels generally indicate for drinking water:

3.1. **Below 50 ppm:** Very low TDS water may taste bland and can be slightly corrosive to pipes.

3.2. **50 ppm - 150 ppm:** Generally considered excellent for drinking. This range offers a good balance of minerals and taste.

3.3. **150 ppm - 250 ppm:** Considered good quality drinking water. You might start to notice a slight mineral taste as TDS increases.

3.4. **250 ppm - 500 ppm:** Still considered fair drinking water quality. The taste may become more noticeable with higher TDS.

3.5. **Above 500 ppm:** May not be preferred for drinking due to taste and potential for laxative

effects in some people. However, it can still be safe for consumption.

4.0. Is 100 TDS Safe for Drinking Water?

Yes, 100 ppm TDS is considered safe for drinking water and falls within the recommended range by the WHO. At this level, the water should be pleasant tasting and unlikely to cause any health concerns.

5.0. Is TDS Below 50 Bad?

While very low TDS water (below 50 ppm) is safe to drink, it may not be ideal. Here's why:

5.1. **Taste:** Very low TDS water can taste flat or bland due to a lack of minerals.

5.2. **Corrosiveness:** Extremely pure water can be slightly corrosive to plumbing pipes, potentially leaching metals into the water.

6.0. What is TDS and pH in Water?

TDS and pH are two different water quality parameters:

6.1. **TDS:** Measures the total dissolved solids in water, indicating the concentration of various minerals, salts, and organic matter.

6.2. **pH:** Indicates the water's acidity or alkalinity on a scale of 0 to 14. A pH of 7 is considered neutral, below 7 is acidic, and above 7 is alkaline.

There is no direct relationship between TDS and pH. High TDS water can be acidic, alkaline, or neutral.

7.0. Why is TDS Important?

While TDS is not a definitive measure of water safety, it provides a general indication of the water's mineral content and potential taste. Here's why it's important:

7.1. **Taste:** TDS can influence the taste of water. Generally, higher TDS results in a more mineral-like taste.

7.2. **Mineral Intake:** Water can contribute to our daily mineral intake. Certain minerals like calcium and magnesium are beneficial, and very low TDS water may not provide enough.

7.3. **Scalding:** Higher TDS water can reduce the risk of pipe corrosion and scaling in appliances.

7.4. **Disinfection:** Very low TDS water can make it slightly more challenging to disinfect with chlorine.

8.0. Good TDS for RO Water

Reverse Osmosis (RO) filtration systems are very effective at removing dissolved solids from water.