DEPT. OF CHEMISTRY

GOVT.DEGREE COLLEGE

JAMMALAMADUGU

BEST PRATICES

TDS OF GROUND WATER
IN
JAMMALAMADUGU
AND
SURROUNDING VILLAGES

What is TDS in water?

TDS refers to Total Dissolved Solids. Any small particle in your water that is not pure H2O is put under TDS. On the other hand, large particles are put under Total Suspended Solids (TSS).

TDS in water is the total concentration of organic and inorganic substances like metals, minerals, and salts in water. When the rainwater descends to the ground, it absorbs minerals in rocks and soil as it traverses. These dissolved minerals present in the water can increase or decrease its TDS level. The most common minerals present in water are calcium, magnesium, and sodium, among others.

While it may appear that TDS only originates from natural sources, the truth is that it originates from sources, encompassing both natural and man-made. Natural sources of TDS include lakes, rivers, and soil, and man-made activities such as pesticide runoff from agricultural areas and chlorine introduced in water treatment plants can also elevate TDS levels in water.

How are Total Dissolved Solids Measured?

Total dissolved solids are measured by milligrams per liter:

- Freshwater < 1500 mg/L TDS
- Brackish water 1500 to 5000 mg/L TDS
- Saline water > 5000 mg/L TDS
- The EPA considers TDS levels of 500 milligrams per liter safe. TDS levels higher than 1000 mg/L are not fit for human consumption

What Are Total Dissolved Solids (TDS)?

Total dissolved solids (TDS) represents the combined total of all organic and inorganic substances found in drinking water. The total dissolved solids present in water is one of the leading causes of particles and sediments in drinking water, which give water its color, odor, and flavor, and can be a general indicator of water quality.

What makes up "Total Dissolved Solids"?	
Commonly Found	**Less Common**
Calcium	Strontium
Carbonate	Barium
Bicarbonate	Thallium
Nitrate	Arsenic
Phosphates	Lead
Sodium	
Sulfate	
Chloride	
Iron	
Manganese	
Magnesium	
Aluminum	

Most people think of TDS as being an aesthetic factor. In a study by the World Health Organization (WHO), a panel of tasters came to the following conclusions about the preferable level of TDS in water.

Levels of TDS (milligrams per litre)	Rating
Less than 300	Excellent
300 - 600	Good
600 - 900	Fair
900 - 1,200	Poor
Above 1,200	Unacceptable

Increased concentrations of dissolved solids can also have technical effects. Dissolved solids can produce hard water, which leaves deposits and films on fixtures and can corrode the insides of hot water pipes and boilers.

Effects of TDS in human health and home appliance

When comparing and discussing water, TDS is often mentioned as a standard quality metric. Total Dissolved Solids (TDS) measure the concentration of minerals, salts, and organic compounds that are naturally dissolved in the water. It is measured in milligrams per litre (mg/l). So, a high TDS indicates a high concentration of dissolved particles or solids in the water, which can have potential health complications. Besides affecting your health and well-being, high TDS levels in water can make your kitchen appliances ineffective. In this article, we will try to understand what TDS is, and also look at the effects of high TDS on health and home appliances.

How is TDS measured?

TDS is measured in milligrams per liter (mg/l) or parts per million (ppm), indicating the concentration of dissolved substances in a volume of water. According to the **United States Environmental Protection Agency (EPA)**, 500 ppm is the recommended amount of TDS in drinking water. This means water with TDS more than 500 ppm is unsafe for consumption.

TDS can be measured using a TDS meter, which indicates the amount of dissolved solids present in the water.

It's important to measure the TDS level of your home because high TDS in water can impact your health and well-being and your home's plumbing system which can in turn affect the health of your home appliances. Therefore, measuring the TDS level of your water provides you with a deeper understanding of water quality and empowers you to make informed decisions to address the water quality issues at home.

What are the Effects of High or Low TDS on Health?

High TDS in water raises significant health concerns. It can contribute to kidney stones, heart diseases, diabetes, and gastrointestinal issues such as stomach pain and diarrhea. In addition to these health complications, high TDS can result in an unpleasant taste and odour in water, reducing your water intake, which can potentially lead to dehydration. This serious health issue might impact your cognitive abilities.

Meanwhile, having very low TDS levels (50 to 250 ppm) is also detrimental to health. That's because not all dissolved solids are unhealthy. Minerals like magnesium and calcium are beneficial for your health and well-being. Therefore, adopting a balanced approach to filtering TDS from your water is important.

What are the Effects of High TDS on Home Appliances?

The **United States Environmental Protection Agency (EPA)**, which sets the standards for US tap water, has put TDS on the national drinking water contaminants list. This means that TDS is a contaminant that can affect your health and well-being. In addition, it (high TDS) can stain surfaces and build up in pipes and appliances, which can in turn reduce the efficiency of your home appliances and shorten their lifespan.

How can you reduce high TDS?

There are different ways to reduce high TDS, but the most effective approach is to utilize a water purifier equipped with advanced filtration technologies such as Reverse Osmosis (RO) and Ultraviolet (UV). If you are looking for a water purifier to address your high TDS level woes, here are some Aquaguard water purifiers capable of tackling water with high TDS.

1. Aquaguard Glory RO+UV+UF+MTDS Water Purifiers

This Aquaguard water purifier comes with advanced Reverse Osmosis (RO), Ultraviolet (UV), and Ultrafiltration (UF) which enables it to treat water of up to 2000 mg/l TDS.

While RO removes new-age contaminants like lead and mercury and eliminates disease-causing viruses and bacteria, UV delivers water as safe as boiled water and UF makes your water safe from viral and bacterial contamination. Besides that, this water purifier comes with Aquaguard's patented Active Copper Booster Technology that infuses an adequate amount of copper into your water.

2. Aquaguard Marvel NXT RO+UV+MTDS+Alkaline+SS Water Purifier

Aquaguard Marvel NXT RO+UV+MTDS+Alkaline+SS water purifier has a six-stage purification along with Alkaline Booster Technology that instantly increases the pH level of the water, making it Alkaline. . The I-Filter removes fine suspended particles such as dust, dirt, mud, and sand from water. The Chemi-Block reduces excess chlorine and organic impurities in the water. It also helps in balancing the odour and taste of the water. The RO membrane reduces TDS, hardness, pesticides, and heavy metals like arsenic, lead, and mercury. The UV E-boiling delivers water as pure as boiled water. The TDS Regulator adjusts the TDS of

purified water to give you pure and safe water. Additionally, the water purifier comes with a high-grade 304 stainless steel tank that is durable and corrosive-free, ensuring your water stays fresh for longer intervals.

3. Aquaguard Nova RO+UV+MTDS Water Purifier

This water purifier delivers pure and safe water free of bacteria and viruses through its superior RO and UV Besides that, this water purifier comes with Aquaguard's patented Active Copper Booster Technology that infuses the right amount of copper into the water. Moreover, this water purifier has a mineral magnet cartridge that infuses water with essential minerals, so that your body can easily absorb the goodness of water.

Conclusion

By now you must have understood the effect of high TDS levels on home appliances and your health and well-being. But, you must also know that TDS is not the sole indicator of water purity. Water contains various contaminants such as mud, dust, rust, sand, bacteria, viruses, and heavy metals like lead and arsenic; and water purifiers are your go-to for purified water.

Aquaguard offers a wide range of **water purifiers** equipped with advanced technologies like RO and UV. While RO removes viruses, bacteria, and heavy metals like lead and arsenic, UV disinfects the water and delivers water as pure as boiled water. These water purifiers also come with Aquaguard's patented Active Copper Booster Technology that infuses the right amount of copper ions into your water. Therefore, if you are looking for a water purifier, opt for Aquaguard.