



**SNS COLLEGE OF TECHNOLOGY**  
**(An Autonomous Institution)**  
**Coimbatore.**

**Unit I - Topic 2 & 3**

**Water for beverages: Types of water required for beverages**

The key to a tasteful drink and beverage starts simply from water. The composition of water in a typical carbonated soft drink (CSD) is an estimated 90% (98% for sugar free drinks). As such, the quality of water is critical on the taste, appearance, physical and microbiological stability of the product.

There are more than 50 legal quality standards ensuring the safety of drinking water. However, outside of these standards, trace amounts of various elements can directly affect taste. Some possible effects of this can be illustrated:

<b>Characteristic</b>	<b>Effect</b>
Suspended Matter	Visible haze/ or particles Foaming during filling <i>Gushing</i> on opening packaged product
Taste and Odour (e.g. from chlorination/ or chlorophenols)	Off-tastes
Alkalinity	Reduced product acidity Scaling of boilers, heaters and jets
Bacteria	Spoilage Health risk
Organic Matter	Deposits in product Neck rings

Water should have no impurities of any nature or kind to interfere with taste, colour, physical appearance and carbonation of the drink. Bottling plants use various equipments and techniques to remove impurities and standardize the water quality.

**The minimum water requirement used for drinks and beverages are:**

- free from high levels of elements and mineral salts;
- free from tastes and odours;
- free from organic material;
- free from dissolved oxygen;
- free from micro-organisms (aka sterile);
- clear and colourless.



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**The treated water in bottling plants should be tested for:**

- Conductivity,
- Turbidity;
- Microbiological levels;
- Taste, odour and appearance;
- Hardness: soft (<50 pp, as CaCO<sub>3</sub>) to medium soft (50–100 ppm as CaCO<sub>3</sub>);
- Alkalinity (< 50 ppm of total dissolved solids) and chlorine-free;
- Total mineral solids: < 350 ppm; free from iron, sulfur, manganese etc.

**The target standards for treated water (for CSD)**

Alkalinity	50 ppm
Hardness	100 ppm
Total Solids	350 ppm
Iron	0.3 ppm
Manganese	0.05 ppm
Taste and Odour	None
Chloramines (as Cl <sub>2</sub> )	None
Carbon Tetrachloride	None
Nitrate	10 ppm
pH	6.5 – 8.5
Sulfate	250 ppm
Aluminum	0.05 – 0.2 ppm
Turbidity	2.0 NTU
Total Trihalomethanes	0.080 ppm
Organic Matter	None
Yeast	None
Moulds	None