

Water Comparison Information

Test	Guideline Values	Comments
pH	< 6.5	May be corrosive.
	< 8.4	Progressively decreases efficiency of chlorination.
	> 8.5	May cause scale and taste problems.
TDS	< 500mg/l	Regarded as good quality drinking water based on taste.
	500 – 1000mg/l	Is acceptable based on taste.
	> 1000mg/l	May be associated with excessive scaling and corrosion.
Hardness As Calcium (Ca)	0 – 20mg/l	Soft – Possibly corrosive.
	21 – 40mg/l	Moderately soft – Good.
	41 – 60mg/l	Slightly hard – Possible scaling problems
	61 – 80mg/l	Moderately hard – Scaling problems.
	81 – 120mg/l	Hard – Increased scaling problems.
	> 121mg/l	Very Hard – excessive scaling problems.
Hardness As Calcium Carbonate (CaCO₃)	0 – 50mg/l	Soft – Possibly corrosive.
	51 – 100mg/l	Moderately soft – Good.
	101 – 150mg/l	Slightly hard – Possible scaling problems.
	151 – 200mg/l	Moderately hard – Scaling problems.
	201 – 300mg/l	Hard – Increased scaling problems.
	> 300mg/l	Very Hard – excessive scaling problems.
Salinity	> 15us/cm	Pure rain water.
	200 – 800us/cm	Town water.
	< 800us/cm	Freshwater rivers.
	800 – 1600us.cm	Marginal river water.
	1600 – 4800us/cm	Brackish water
	> 4800us/cm	Saline water
Saturation Index (SI)	-5	Extreme corrosion.
	-4	Severe corrosion.
	-3	High corrosion.
	-2	Moderate corrosion.
	-1	Mild corrosion.
	0	Balanced.
	1	Mild scale coating.
	2	Moderate scale coating.
	3	High scale coating.
	4	Severe scale forming.

Soluble ions found in water are:

Cations

Calcium (Ca²⁺)
 Magnesium (Mg²⁺)
 Sodium (Na)
 Potassium (K)

Anions

Carbonates (CO₃²⁻) Nitrate (NO₃¹⁻)
 Bicarbonates (HCO₃¹⁻) Boron (B³⁺)
 Chloride (Cl¹⁻) Phosphate (P₀₄₃⁻)
 Sulfate (SO₄²⁻)

Cations – Is an ion with fewer electrons than protons, giving it a positive charge.

Anions – In an ion with more electrons than protons, giving it a negative charge.

Electrical Conductivity

Is an assessment of waters salinity or of all total dissolved salts (ions) but will reliably indicate the degree with which a salinity problem is likely to occur.

Totally Dissolved Solids (TDS)

Total Dissolved Salts is the sum of all the ions present in a sample of water and represents the total salt Content of the water (1mg/l = 1ppm).

Saturator Index

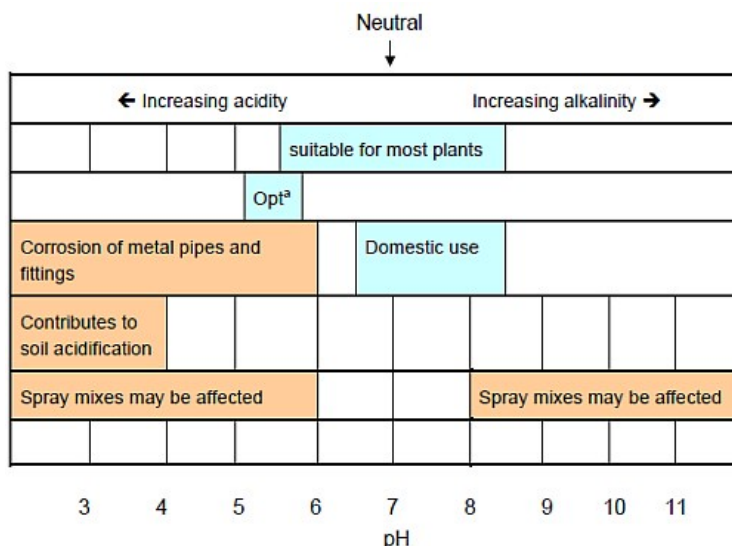
This gives the relationship between pH, salinity, alkalinity and hardness. It is used to assess the scaling (encrustation) or the corrosive potential of the water. If the index is between -0.5 and +0.5, there is little likelihood of either scaling or corrosion of pipes and fittings.

Total Alkalinity (CaCo₃)

If the Total Alkalinity is low the water may be aggressive and cause corrosion to pipe work and structures. If the Total Alkalinity is high the water may more readily promote scale formation.

pH

Measures the acidity or alkalinity of a water sample. This measures if water is acidic (<7, neutral (7) or alkaline (>7).



ªOptimum for hydroponic solutions is pH 5.2 to 5.9