

SAR, Silica

SAR (Sodium Absorption Ratio)

Sodium is one of the most studied elements because of its toxic effects to soil texture and crops. High concentrations of sodium disperses soil colloidal particles, rendering the soil hard and resistant to water penetration.

The build-up of osmotic pressure in soil due to high sodium concentration hinders water absorption by plant roots.

High amounts of sodium can be mitigated with the distribution of gypsum directly on soil or as an additive to irrigation water.

The HANNA instruments® test kit determines Sodium Hazard in irrigation water by calculation of SAR (Sodium Absorption Ratio) in relation to Calcium and Magnesium concentration.

The kit is supplied with our DiST®4 Conductivity Tester, to quickly determine the conductivity of irrigation water.

The kit's manual also supplies information about practical actions to take from the results obtained.

Silica

Silicon does not occur freely in nature, but rather as Silica (SiO₂) in crystalline forms, combined with other oxides and metals in a variety of silicates.

Silicon is usually reported as Silica when rocks, sediments, soil and water are analyzed.

Silica is only slightly soluble in water. The solubility and form of Silica in water depend on the pH of water and on the minerals containing Silica, in contact with the water.

Heating plants and reverse osmosis processes need an accurate monitoring of the silica concentration in water.



HI 38067 - Silica

Parameter	Code	Method	Range*	Smallest Increment	Chemical Method	Number of Tests	Weight
SAR	HI 38078	DiST®4+ test kit	> 0.0 meq/L	0.2 meq/L	Titration	approx. 100	785 g
Silica	HI 38066	Checker disc	0.00-1.00 mg/L	0.02 mg/L	Colorimetric	100	580 g
	HI 38067	Checker disc	0-40 mg/L 0-800 mg/L	1 mg/L 40 mg/L	Colorimetric	100	712,5 g

* 1 mg/L = 1 ppm

For spare reagents, see section V. For accessories, see section U.