

Formaldehyde, Glycol, Hardness



HI 3812 - Total Hardness



HI 3840 - Total Hardness



HI 38033 - Total Hardness

Formaldehyde

Formaldehyde is used in many industrial processes, as in maintenance of reverse osmosis plants. It is also used as preservative or disinfectant.

Each application requires a specific quantity of formaldehyde, which must be monitored for process optimization. Formaldehyde is a carcinogenic and inflammable substance.

Glycol

Glycol is largely used in cooling systems and as an antifreeze. Its presence in motor oil indicates a leak in the cooling system or in the engine.

HANNA instruments' HI 3859 can be used for aqueous, as well as oily solutions, and determines the presence of glycol.

Hardness

Hardness in water is mainly due to the presence of Calcium and Magnesium ions. Calcium and Magnesium also contribute to the amount of total hardness. Monitoring and controlling hardness is fundamental in order to prevent scaling and corrosion.

Water is categorized as very soft (0-70 mg/L), soft (70-150 mg/L), slightly hard (150-250 mg/L), moderately hard (250-320 mg/L), hard (320-420 mg/L) and very hard (420 mg/L and above), according to the hardness scale.

HANNA instruments' kits cover all of these ranges.

HANNA instruments' offers the HI 3840-S, HI 3841-S and HI 3842-S chemical test kits packed in sachets offering a low cost alternative.

Parameter	Code	Method	Range*	Smallest Increment	Chemical Method	Number of Tests	Weight
Formaldehyde (as CH ₂ O)	HI 3838	Titration	0.00-1.00% 0.0-10.0%	0.01% 0.1%	Sodium Sulfite/ Hydrochloric Acid	approx. 110	910 g
Glycol	HI 3859	Visual	Present/Absent	—	Oxidation of glycolic group	25	380 g
Hardness (as CaCO₃)							
Total	HI 3812	Titration	0.0-30.0 mg/L 0-300 mg/L	0.3 mg/L 3 mg/L	EDTA	100	460 g
	HI 3840	Titration	0-150 mg/L	5 mg/L	EDTA	approx. 50	120 g
	HI 3841	Titration	40-500 mg/L	20 mg/L	EDTA	approx. 50	120 g
	HI 3842	Titration	400-3000 mg/L	100 mg/L	EDTA	approx. 50	120 g
	HI 38033	Titration	0-30 gpg	1 gpg	EDTA	100	457 g
	HI 38034	Titration	0.0-20.0 gpg 0.0-20.0 mg/L	0.2 gpg 0.2 mg/L	EDTA EDTA	100	567 g
Total & Calcium	HI 38035	Titration	Total: 0.0-20.0 gpg Calcium: 0.0-20.0 gpg	0.2 gpg 0.2 gpg	EDTA EDTA	100	960 g
Calcium (Ca) (irrigation water)	HI 38086	Turbidimetric	0-125 mg/L 0-250 mg/L	1 mg/L 2 mg/L	Turbidimetric	100	950 g
Magnesium (Mg) (irrigation water)	HI 38079	Titration	0.0-240.0 mg/L 0.0-725.0 mg/L	2.4 mg/L 7.3 mg/L	EDTA	approx. 100	873 g
Ca & Mg (irrigation water)	HI 38081	Titration	>0.0 meq/l	0.2 meq/l	EDTA	approx. 100	671 g
Ca & Mg (soil)	HI 38080	Titration	>0.0 meq/100 g	1.5 meq/100 g	EDTA	approx. 100	336 g

* 1 mg/L = 1 ppm; 1 gpg = 17 ppm CaCO₃

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