



Water Quality required for trouble free Cooling Tower operation

The water must not contain solid particles which may deposit in the cooling water system.
Max size of solids particles 0.1mm.

The water must not nourish the growth of micro-organisms.

The water must not precipitate lime, gypsum or other materials into the cooling system at the highest water temperature in the cooling system.

The water must not contain fibers, oil or grease.

Maximum recommended values for circulating cooling water (with inhibitors in the water)

total hardness, carbonate hardness (ie carbonate and magnesium ions) expressed as calcium carbonate	500	ppm
carbonate hardness with the addition of stabilizers	1000	ppm
chlorides content approx. in case of austenitic steels approx.	300 50	ppml
pH-value for light metals	7 bis 8.3 7 bis 7,5	
sulphates content approx.	500	ppm
iron approx.	0,3	ppm
total dissolved solids (TDS) total minerals content	2000	ppml
suspended substances approx. (TSS)	50	ppm
conductivity max.	1200	µS/cm
total alkalinity (ie carbonate, bicarbonate and hydroxide ions) expressed as calcium carbonate	80 to 400	ppm
nitrites (if used as corrosion inhibitor)	200 to 700	ppm
langelier saturation index (without dispersants)	- 0	
typical maximum cycles of concentration	Melbouren Canberra & Sydney -10 Brisbane, Adelaide Perth -5	

In addition to above, the following has to be checked:

- Legal limits for bacteria and legionella for health reasons,