



la marzocco

HOME

la marzocco home – understanding water

La Marzocco cannot stress enough the importance of using appropriate water treatment to obtain both excellent espresso and increase the lifespan of our machines.

For optimum machine performance, the water properties should fall within the following parameters:

	min	max
total dissolved solids [ppm]	90	150
total hardness [ppm]	70	100
total iron [ppm]	0	0.02
free chlorine [ppm]	0	0.05
total chlorine [ppm]	0	0.1
pH	6.5	8
alkalinity [ppm]	40	80
total chlorides [ppm]	0	50

la marzocco water testing kit

Each new machine includes two La Marzocco water testing kits, one which will allow you to check your water before filtration to determine what your filtration needs are, and one for after filtration has been installed to ensure it is effective.

Please ensure you test your water by drawing samples from a tap dispensing COLD water, which is NOT filtered or softened. Use a fresh sample for every test. Remember to test water everytime you change location/water source for machinery, as water is highly variable from location to location, and can even change in time due to supply/reservoir changes.

Do not test any water from the groups or steam boiler.

When choosing a bottled water, ensure to check some minerals are present.

Bottled water that is too pure will not be recognised by the machine causing the blue water light to keep flashing or screen to indicate water is not present, despite the reservoir being full.

Results of your water tests can be entered into the la marzocco water calculator at <http://techcenter.lamarzocco.com/jsp/Template4/watercalculator.jsp>

Please see below a more detailed description of these various parameters and the direct effects these have on your espresso and equipment.

pH - concentration of H⁺ and OH⁻ ions in a substance, telling how acidic or alkaline that substance is. The more acidic the solution, the lower the pH (higher concentration of H⁺ ions). The more alkaline the solution, the higher the pH (higher concentration of OH⁻ ions). The pH of 7 is Neutral, which is an ideal value for water for a superior espresso brew.

When pH is higher than 8:

Effects on espresso: over-extracted, sapid espressos, with low aroma, very low pleasant acidity and unpleasant bitter taste, low sweetness.

Effects on equipment: if high pH is due to high salinity in combination with low hardness, corrosion will quickly appear.
If pH is due to high hardness, boiler will be prone to scale build-up.

When pH is lower than 6.5:

Effect on espresso: unpleasant sour taste.

Effects on equipment: greater concentration of H⁺ ions will increase the corrosive potential of the water against boilers and pipelines.

TDS: Total Dissolved Solids are the total content of organic and inorganic dissolved substances that may be found in a solution, like minerals, salts or metals dissolved in a given volume of water, expressed mg/L, also referred to as parts per million (ppm).

TDS higher than 150ppm:

Effects on espresso: unbalanced body and acidity, low aromas, harsh taste.

Effects on equipment: mineral build-up and slime into boilers.

TDS lower than 90ppm:

Effects on espresso: weak body, tart taste.

Effects on equipment: water becomes aggressive against espresso equipment's materials and speeds up corrosion phenomenon caused by other additional factors.

Total Hardness: the reflection of concentration of Ca²⁺ and Mg²⁺ ions PLUS other minerals in a solution. Hardness as measured by the La Marzocco test kit is expressed in parts per million (ppm), where one part per million is defined as one milligram calcium carbonate (CaCO₃) per litre of water. Calcium Carbonate is the main constituent responsible for limescale build up.

Total Hardness higher than 100ppm:

Effects on espresso: over-extraction, harsh and bitter taste.

Effect on equipment: excessive lime scale build-up.

Total Hardness lower than 70ppm:

Effects on espresso: flat body, low aromatics, little or no crema, unpleasant acidity.

Effects on equipment: water becomes aggressive and may cause/speed up corrosion in combination with other additional factors.

Total Iron: high iron content will give coffee (with added milk) a greenish tint and a bitter/metallic flavour. Water from the boilers may be rusty in colour.

Total Chloride: Chloride is an ion of chlorine. It occurs when chlorine gains an electron becoming Cl⁻. The most commonly known chloride is NaCl (SODIUM CHLORIDE) also known as TABLE SALT, which is very soluble in water. **THIS IS COMMON IN COASTAL AREAS AND GROUND WATER SUPPLIES, CHLORIDES CAN ONLY BE REMOVED BY REVERSE OSMOSIS.**

Chloride higher than 50ppm:

Effects on espresso: increase the perception of sourness and enhance phenolic compounds and astringency.

Effect on equipment: chlorides cause severe phenomenon of pitting corrosion, particularly in stainless steel.

Total Chlorine: Chlorine (Cl₂) is a chemical element that is a very inexpensive, effective and readily available disinfectant used by municipalities to kill bacteria present in the water, thus preventing the spread of waterborne diseases. **CAN BE REMOVED ONLY BY ACTIVE CARBON FILTERS**

Effects on espresso: chlorine combines with coffee's phenolic compounds causing a distinctive medicinal taste.

Effects on equipment: chlorine increases corrosive potential of the water.

If you have any questions regarding your water, please do not hesitate to give us a call or drop us an email
02 8396 6199 or home.australia@lamarzocco.com