CARING FOR YOUR HOUSEHOLD APPLIANCES AND AQUARIUMS

One of South East Water's main priorities is to provide high quality water to our customers. Sourced largely from protected catchments, our water is the envy of many.

This information sheet aims to familiarise you with language relating to our water supply which might impact on how you care for your household appliances such as dishwashers, washing machines, kettles, irons, hot water services and aquariums.

What are 'water hardness' and 'total dissolved solids'?

Household appliance instruction manuals usually mention 'water hardness' or 'total dissolved solids' (TDS) when referring to their operation and maintenance.

- Water hardness is a measure of the amount of calcium and magnesium salts in the water. Water with a concentration of these salts will have a high hardness value which can make it difficult to obtain a lather with soap or detergent and can cause scaling problems in hot water pipes, fittings and appliances.
- TDS is the measure of inorganic salts dissolved in water. The salts are typically sodium, chloride, calcium, magnesium, iron and silica. The higher the value the greater the dissolved material. High TDS values can cause scaling in pipes, fittings and appliances while excessive values can cause corrosion.

What are the values of water hardness and TDS in Melbourne?

In Australian cities the hardness can range between five and 380 milligrams per litre (mg/L) and TDS can range from 45 to 750 mg/L.

In Melbourne our water has low hardness and TDS values because of our excellent source water. The hardness ranges from 15 to 20 mg/L and the TDS ranges from 50 to 120 mg/L, which are both very low when compared with other Australian cities.

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HARDNESS VALUE OF MELBOURNE'S WATER FOR DIFFERENT MEASUREMENT UNITS USED AROUND THE WORLD

(These units may be referred to in the manufacturer appliance instruction manual)

Country where appliance is manufactured	Measurements and units used for water hardness	Hardness levels for Melbourne's water
Australia	as $CaCO_3$ (ppm or mg/L)	15 (described as very soft)
Germany	as German degree (°d)	0.84
England	as English degree (°e)	1.05
France	as English degree (°f)	1.5
International unit	**Alkaline – earth ions (mmo/L)**	**0.15**

What effect can these values have on operating and caring for my household appliances?

As mentioned earlier, water hardness can affect the operation and maintenance of household appliances by reducing the effectiveness of cleaning agents (soaps or detergents) used in these appliances. However, as Melbourne has low water hardness these cleaning agents perform very well with our water. That means you use less cleaning agents and there is no need to add additional 'softening' products to the water.

Dishwasher instruction manuals may refer to the hardness value of the water and settings to be used. The setting required for Melbourne would be 'low' for soft water (refer to table above).

The boiling or heating of any tap water used by kettles or steam irons causes mineral deposits to form on the interior surface, which may cause discolouration over time. To clean, refer to your appliance instruction manual.

For Hot Water Services the instruction manual may refer to the TDS composition of the water. Hot Water Services are manufactured to suit the water conditions of most metropolitan cities so your system will have an appropriate anode protection device fitted to suit Melbourne's low TDS. The anode will have a working life and may need replacement at a later date – refer to your manufacturer's instruction manual.

Is there anything I need to know about the water supply in caring for my aquarium?

Yes, in Melbourne chlorine is used to disinfect our water and as it moves through the system from the reservoir to customers' taps chlorine levels will naturally decrease. What this means is that the amount of chlorine remaining in the water varies between suburbs, time of day and season. While chlorine levels in our water are quite low, chlorine at any level isn't good for aquatic life.

Before topping up or filling your aquarium it is important that you make sure there are no traces of chlorine in the water. This can be done by storing the water in an open container and aerating it for a suitable time.

When filling an aquarium for the first time, owners may need to adjust the water chemistry to suit the type of fish being kept in the aquarium. To maintain their health, fish and plants generally require some dissolved minerals or salts be added to aquarium water.

An aquarium or pet shop can provide you with more information on setting up and maintaining your aquarium.

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