

2019

**Emile Berries** 



### Interesting facts about Magnesium

#### Magnesium instead of Calcium to prevent lime scale formation!

Although not only Calcium but also Magnesium belongs to the so called hardneners, magnesium carbonate has a lower tendency to form lime scale than calcium carbonate.

#### Magnesium is a flavor carrier!

The magnesium mineralized drinking water brings the aroma of tea and coffee to their best advantage. Also enjoyed pure it convinces with a gourmet taste. Thanks to magnesium, the water is perceived as particularly natural, balanced and fresh.

#### Magnesium for a better well-being and higher performance every day!

- maintenance of bodily nerves, muscles and bones
- Magnesium is vital for sustaining a normal heart beat
- reducing osteoporosis, eclamptic seizures, and maintenance of sugar level
- positive effects on asthma, diabetes, constipation, back pain and various psychiatric disorders

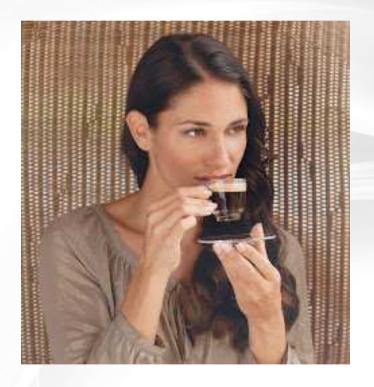




## Flavor enhancement by softening

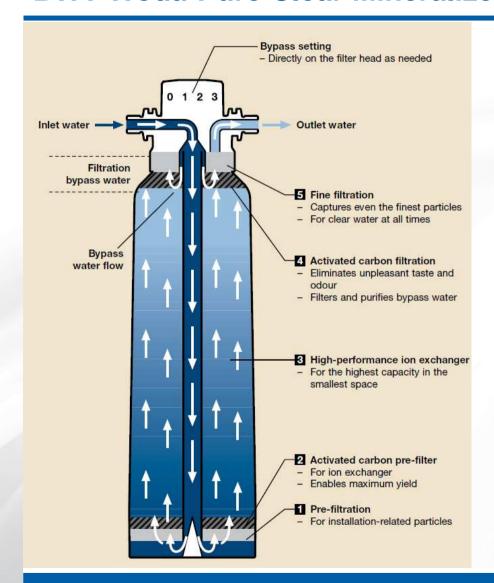
and Magnesium

enrichment





#### **BWT Woda-Pure Clear Mineralizer**



#### **High efficient Exchanger**

#### $Ca^{2+} -> Mg^{2+}$

- 1. Particle Retention
- 2. Organics (taste and odor) and Chlorine removal
- Removal of Ca<sup>2+</sup>-lons and replacement by H<sup>+</sup> and Mg<sup>2+</sup>-lons
  - -> Softening by Magnesium-Enrichment
- Organics (taste and odor) and Chlorine removal for the blending water
- 5. Particle Retention for the blending water

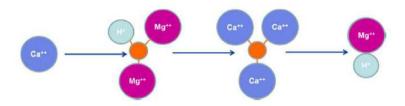
#### Please note:

- Head with bypass blending <u>required</u> (for adjusting the residual hardness to the optimal taste level)
- Prefiltration (~5µm) required



### The core filter media – weak acid cation exchanger

#### Ion exchange process:



- = calcium-ions
- = magnesium-ions
- = hydrogen-ions
- = weak acid cation exchanger

- Selective Cation Exchanger
- Organic Polymer Material
- Replacing Ca<sup>2+</sup> by Mg<sup>2+</sup> and H<sup>+</sup> (and not by Na<sup>+</sup> as a standard softener resin)
- Also restraining Cu<sup>2+</sup> and Zn<sup>2+</sup> lons if present in the water
- Please note: By enriching with Hydrogen (H+) lons the pH-value is slightly decreased ->
  higher corrosion potential -> SS tap after cartridge required



#### **Application areas**

# Taste enhancement by water softening – Calcium reduction and Magnesium enrichment

- Drinking Water
  - the water is perceived as particularly natural, balanced and fresh.
- Tea Water
  - No taste disturbances and protection of boiler systems
- Coffee Water
  - No taste disturbances and protection of boiler systems



