

FILTERSORB SP3

Cleaning with SP3 Water: Part IV

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PART IV

Cleaning, Washing and bathing with CO₂

Solubility and Adsorption of

WATER (H₂O)

Solubility
with

CARBON DIOXIDE (CO₂)

Adsorption
with

Cations

Calcium

Magnesium

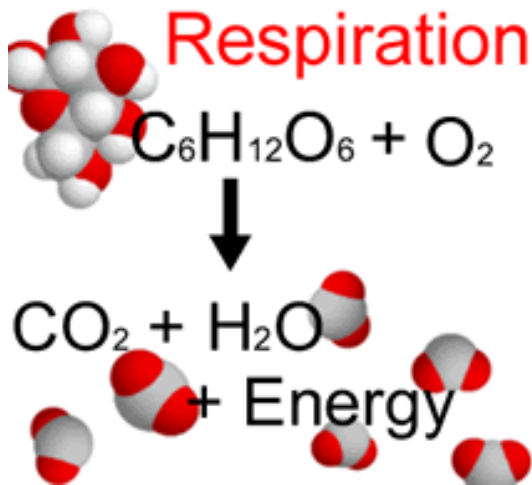
Anions

Bicarbonate

Temporary Hardness

What is „Natural CO₂“

The Natural CO₂ in the atmosphere which dissolves in the water mostly come from the „respiration“ of all living things. Everytime a person breathes out, he or she exhales CO₂ which lungs have removed from the blood stream, where it is the waste product left when cells burn carbohydrates to make „**Energy**“. The microbes that break down the dead plant matter in soil, release CO₂ as they digest it. The biggest source is plant respiration.



Natural CO₂ and Skin

The permeability of carbon dioxide (CO₂) against a cell membrane for example is 25 times greater than oxygen. Carbon dioxide easily dissolves in water (H₂O) and also easily in oil. It is one of the reason that Carbon dioxide is easily absorbed from the skin, which has a structure like a mixture of water and oil. Skin blood flow is improved by blood vessel dilation; therefore skin cell metabolism is activated and generally speaking skin become healthier. Beautiful skin has to be healthy skin first. That explains one of the reasons skin becomes more beautiful by Carbon Dioxide absorption.

Read more on PART V

Adsorption of Carbon Dioxide
THROUGH SKIN

We use the term „Carbon Dioxide Gas“ for better understanding of non-experts.

Solubility and Adsorption of carbon dioxide

As you have learned in previous lessons carbon dioxide easily dissolves in water (H_2O) and also emits from water. At room temperature CO_2 can exist in a form of a gas and is therefore used to carbonate soft drinks and other beverages. Natural CO_2 can also exist in Temporary hardness $\text{Ca}(\text{HCO}_3)$ dissolved in $\text{CaCO}_3 + \text{H}_2\text{O} + \text{CO}_2$, as liquid. Liquid CO_2 has a gas like consistency and a low surface tension allowing it to function as a very effective cleaning medium when combined with detergents.

The **SP3** system uses a specially designed pressure vessel and a granular beads which separates the liquid CO_2 from Calcium bicarbonate just before entering washing machines and dish washers and creates a gentle wash in this process of cleaning. It needs a less heating of the machines 30°C for the cloths and is therefore gentle to fabric. After a cycle time of 40 – 50 minutes, the cleaned garments are removed from the washing machines.

Performance

An independent performance testing has been conducted with great results. The performance information that is presented in study was provided by [Tensio Consult, Germany.](#)

Watch® Water Technologies **SP3** system offers excellent cleaning performance across most garment components and a wide range of stains and soils. Also, since CO₂ works best at room temperature, energy saving is huge cost savings.



Environmental, safety and health Impacts

Naturally occurring Carbon dioxide is generally available in all hard waters.

Read Texture of water with CO₂, Part III

The use of **SP3** water with CO₂ allows consumers and washing machine operators to avoid exposure to traditional dry cleaning solvents. The **FILTERSORB SP3** systems are used to make beverage classic waters and more than 50,000 systems are installed in different restaurants and other fountain beverage dispensers located across the world.

Environment stewardship is one of the hallmarks of Watch[®] Water **SOFT-NO-R** system. The wastewater generated by the **SP3** system is **ZERO** and does not use salt or chemicals for regeneration.

Because the **SP3** media works in residential and commercial applications. The **SP3** media is working under pressure all pressure vessels have **ASME** code for pressurized vessels and system. **SP3** has been tested to meet **NSF/ANSI-61 by WQA** (USA), **WRAS** (UK), **BS6920** (UK) and **MSZ 448-36:1985** (Hungary) standards.

SP3 media is absolutely Non toxic!

Capital Cost Comparison:

A primary concern for individuals considering the use of CO₂ for

- ✓ Cleaning
- ✓ Washing
- ✓ Bathing and
- ✓ Drinking water

in comparison to water softeners is almost same but there are no further operating costs and the high productivity associated with the **SP3** system ensure adequate return on investment in one month up to maximum one year depends on the size of **SP3** system.

Better for you and better for Environments!

How does CO₂ cleaning work?

CO₂ in **SP3** water uses natural carbon dioxide (recycled from temporary hardness) combined with recyclable cleaning agents (specially formulated by Watch Water) to wash the dirt, particulate and toxins from garments, (than flushing the waste into drain) with all **100% biodegradable** components. Oh! did we mention the **SP3 Systems** and the whole process is powered without any energy - pretty high tech stuff!

The entire cleaning process is done at a cool, room temperature. Other cleaning chemicals like phosphates, silicates, hydrocarbon, chlorine for bleaching are toxic chemicals that are known as **carcinogens** adds up back to surface and ground water contaminants. Additionally, most other processes and cleaners require **High Heat** to clean clothes. Heat degrades fabrics causing them to wear out, fade and pill and can actually cause stains to set permanently. Our **SP3 water** with CO₂ gets clothes cleaner than any other cleaning method. With CO₂ in water there's no fading, shrinking, pilling or stain setting. Pure CO₂ in **SP3 water** leaving garments fresh, odorless and **toxin free**.

Sounds Great!!

Wash and rinse your clothes in cold water

SP3 water with CO₂ cleans in cold water Temperature maximum 30°C or 86°F the same as hot water. Your clothes will come out just as clean using cold **SP3** water as they would using hot water, even better and whiter. That's because there are three factors in cleaning, less TDS (high TDS caused by water softeners), better detergents and the CO₂ for better Texture (more on Part III). Take away heat that is not needed. Ask for more details on Watch formulated Green detergents which works extremely great and are specially designed to be more effective in cold water as old detergents made from phosphate, silicates, chlorine for hot waters.

TAKE ACTION ! How to install **SP3** system at HOME

Thanks to **FILTERSORB SP3** !