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The Swiss Waters

Thermal Spring Water

Glacier Water

Wild Pond Water

Soft Spring Water

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1. General information regarding the Swiss waters

Switzerland, which is also known as the “water tower of Europe”, offers a large number of different types of water that boast a diverse range of interesting properties. Thanks to their unique geological situation, the Swiss waters offered by Botanica all have different stories to tell, and their origins are as diverse as Switzerland itself. Collected fresh at the source, we offer them ready to use for cosmetic purposes, or we can also transform them into exclusive plant extracts (e.g. edelweiss extract in glacier water).

1.1 Thermal Water from Zurzach

Archaeological excavations have shown that the region was inhabited around 3000 BC, undoubtedly as a result of the presence of its thermal springs. Much later, during the early 20th Century, a soft drinks factory drilling into the ground in the hope of finding salt reserves discovered a hot spring at a depth of 419 m. But it wasn’t until 1956 that drilling resumed, thanks to Dr Martin Erb, who went on to use water from Zurzach throughout his entire medical career. A magnificent spring was discovered at a depth of between 430 and 460 m underground, flowing at a rate of 500 l/min and at a temperature of 39.5°C. The spring was very quickly exploited, transforming this town into a spa retreat. Today, the Thermalquelle AG resort is visited by a large number of patients seeking treatment for heart conditions, rheumatism, motor and circulatory disorders and even skin conditions.

1.2 Glacier water

Titlis, which measures 3.238m at its highest point, is the largest summit in a long chain of mountains located in central Switzerland. It is capped with a glacier with a surface area of 1.7 km², which lies mainly on the west and north faces of the mountain. It is one of many alpine glaciers located in this region.

The water flowing from the Titlis glacier was formed by a very slow process that took place over several centuries. It is the result of the accumulation of layers of snowfall that have become compacted and transformed into ice over time as a result of the pressure exerted by the upper layers. In fact, this pressure pushes out air, and causes the ice crystals to break and fuse together, forming an impermeable substance: ice. The act of sliding over the rocky substrate, coupled with Pressure from the various layers, causes some of the ice to melt: the glacier water flows out in the form of a stream. This incredibly pure water flows into the Engelberg valley joining a river called the Engelberger Aa, which ends its journey at Buochs at the mouth of Lake Lucerne, which lies at

an altitude of 455 m. The purity of this water has been well known for a long time, as Benedictine monks founded a monastery in the town of Engelberg in 1120, which can still be visited today.

1.3 Wild Pond Water

While seeking out unique types of water, we found a mountain spring that provides exceptional water! It was discovered in the Entlebuch municipality in central Switzerland, between Bern and Lucerne, which was designated a biosphere reserve by UNESCO in 2001.

Reaching 1,408 m at its highest point, Napf is an alpine peak located in the east of the canton of Bern. The Napf gold deposits are some of the oldest known in Switzerland. The Helvetians, a Celtic people who lived in the area that is now Switzerland in the times before Christ, as well as the Romans, were already seeking out Napf gold. Today, the valleys and small streams in this area are extremely popular amongst gold panners. In this area characteristic of the “far west of Switzerland”, which comprises near-inaccessible gorges, jagged mountains and protected forests, and which has a developed area of less than 2%, this UNESCO reserve provides one of the most natural untouched spring waters, which is extremely rich in minerals.

1.4 Soft Spring Water

The Gotthard mountain range is located in the Swiss Alps in central Switzerland. It separates the north of Switzerland from the canton of Ticino in the south of Switzerland. At 16.9 kilometres in length, the Gotthard road tunnel, which links Göschenen in the north with Airolo in the south, is the longest road tunnel in the Alps. A large number of rivers rise in the Gotthard range, most notably the Rhône, the Ticino and the Reuss.

The spring water spends decades seeping through rocks, and therefore undergoes a process of natural filtration. This particular spring water is unusual in that it is extremely soft and originates from an especially pure mountain spring in the northern part of the Gotthard mountain range. Its benefits have already been known about for centuries, serving as a refreshing and revitalising spring for the numerous travellers crossing the Alps. The spring water owes its name to the mountain face that it flows down: Hellberg. In the local dialect, the word “Hell” has a meaning very close to the same English word and references the disconcerting appearance of the ravine.

The spring flows at the impressive rate of 1000 litres per minute. Since 1899, the spring water has been harnessed and redirected to Erstfeld through a complex network of wells. From there, the water is distributed throughout the whole of the Erstfeld municipality as well as to surrounding areas.

2. Composition

The composition of mineral water varies greatly from one source to the next and is dependent on the amount of time that the water takes to filter through the rock, as well as the type of rock it filters through. The water can be classified according to different criteria: mineral content and the physico-chemical composition of the water.
The mineral content of mineral water, which remains constant over time, represents the total quantity of salts dissolved in it. Mineral waters can be classified as follows:

- Water with very low mineral content: mineral content of less than 50 mg/l,
- Water with low mineral content: mineral content of between 50 and 500 mg/l,
- Water with average mineral content: mineral content of between 500 and 1,000 mg/l,
- Mineral water : mineral content of between 1,000 and 1,500 mg/l,
- Water with high mineral content: mineral content of more than 1,500 mg/l.

The four types of water referred to below are therefore all mineral waters, however their different levels of minerals lend them specific properties and applications.

2.1 Results expressed in mg/l

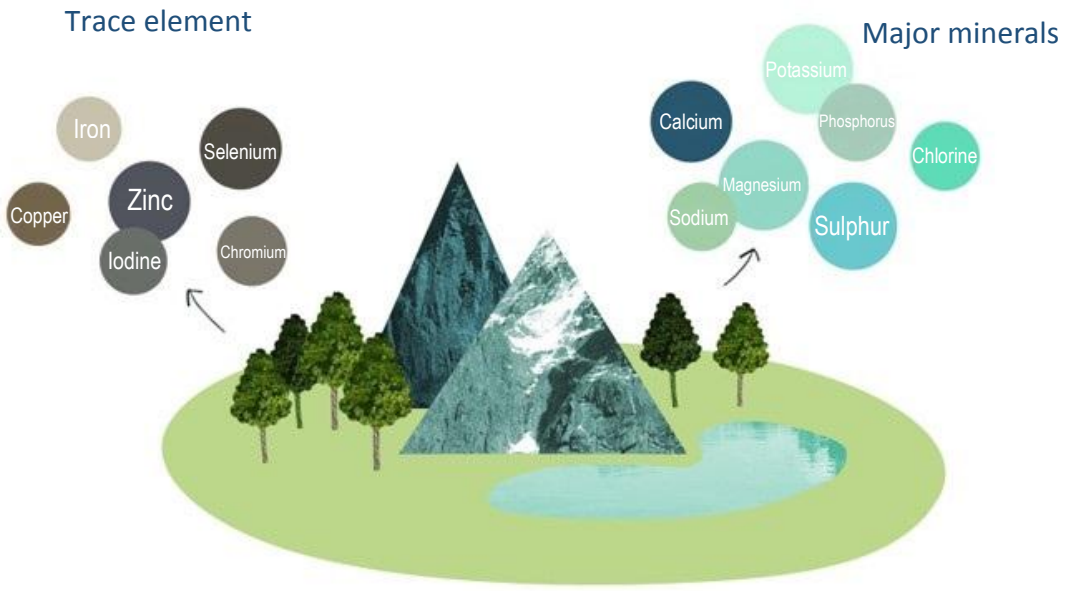
in mg/kg	Calcium	Sodium	Potassium	Magnesium	Iron	Selenium	Silicon
Thermal Spring Water P-00020542	18	1427	14.6	0.39	<0.1	0.76	9.8
Glacier Water P-00020382	59	1171	1.49	4.39	0.27	<0.1	0.8
Wild Pond Water P-00020412	103	1159	2.32	12.7	0.73	<0.1	2.75
Soft Spring Water P-00020413	23	1097	1.89	1.03	0.11	<0.1	2.44

in mg/kg	Copper	Manganese	Zinc	Phosphorus	Chlorides	Lithium
Thermal Spring Water P-00020542	<5	<5	<5	<20	<0,05	1,34
Glacier Water P-00020382	<5	<5	<5	<20	<0,05	<0,125
Wild Pond Water P-00020412	<5	<5	<5	<20	<0,05	<0,125
Soft Spring Water P-00020413	<5	<5	<5	<20	<0,05	<0,125

- The results are batch specific
- The water is preserved with 0.6% sodium benzoate (= 0.1% sodium)

2.2 The different minerals

Just like vitamins, **minerals** (or mineral salts) are **essential substances that ensure the correct functioning of the body**. The majority are found in unlimited quantities in natural sources such as rivers, lakes and oceans, as well as in the ground.
There are 22 of them in total, which make up approximately 4% of our body mass, and which fall into two categories.



The major minerals

So-called because your body requires them in quantities of more than 100 mg per day, there are 7 different major minerals, namely: **Calcium**, **Magnesium**, **Potassium**, **Phosphorus**, **Sulphur**, **Sodium** and **Chlorine**.

The trace elements

So-called because they are only found at trace levels, together representing less than 15 g of total body mass. There are 15 trace elements in total, the most important of which are: **Iron**, **Zinc**, **Copper**, **Fluorine**, **Iodine**, **Chromium**, **Manganese**, **Silicon** and **Selenium**.

3. Applications

Thermal Water: Extremely hydrating thanks to its abundance in Sodium and its Calcium – Potassium combination, it also possesses rebalancing and medicinal properties as a result of its Lithium content and is therefore also suitable for sensitive and damaged skin. In addition, it contains Selenium, a powerful antioxidant that helps to neutralize free radicals, which are released most notably as a result of attacks from pollution, sunlight, tobacco, etc. and which are responsible for skin ageing. Equally well-known for its ability to protect against sunburn and to aid tanning, Selenium is an essential element for keeping your skin in top condition. Finally, its high levels of Silicon lend it some exceptional properties: in fact Silicon helps the body to produce collagen, one of the main components of tissue, and also makes hair shine and strengthens nails. It also helps the skin to provide better protection against illnesses and inflammation.

Glacier Water: A truly rehydrating solution thanks to its high concentration of Potassium, which has been described as an essential element for recovery, particularly following strenuous activity, and in order to maintain healthy skin. A real boost for providing deep rehydration for the skin! Rich in all of the essential elements (Ca, Na, K, Fe, Si and Se), glacier water is the ideal choice for daily cosmetic use.

Wild Pond Water: A revitalising water, thanks to its combination of Calcium, Sodium, Potassium and also Magnesium, Silicon and a touch of Iron, this water can be used as a cure to revitalise pale skin.

Soft Spring Water: Spring water has a slightly lower mineral content than the other types of water, however the minerals that it does contain are perfectly balanced, making it ideal for all of your hydrating and balancing formulas, as well as for use as a medium for plant extracts.

Botanica water is preserved using 0.6% Sodium Benzoate coupled with 0.1% citric acid, which acts as a buffer for the medium, in order to guarantee a level of microbiological stability that complies with the European pharmacopeia.
These four types of water can be formulated without any limits on their use.
Botanica also uses them as a solvent during the creation of its plant extracts, thereby ensuring their high-end market position.

4. Specifications (see annexes)

5. Sources

www.nutrtiting.com
http://www.thermalbad.ch
www.wikipedia.com
www.guerir.org
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