

Thermal water

Water – the principle of all things

The principle of all things is the water; water is all and into water all will go back (Thales).

The human being has the deepest contact to the element water. The water protects us, it nurtures, it washes, it cools and it warms. Its versatility makes the water to a universal remedy. Already the pastor and natural healer Sebastian Kneipp passed on 100 different water treatments, one of it is the famous “water treading”.

On 16th May 2000 in the therapeutic bath Kneipp of Überlingen the decision was taken for the boring and opening of thermal water. The courage and the risk of this plan were rewarded. The productiveness of the source is 4.25 liters per second and is gained out of a depth of 1006 meters. The water has a temperature of 36.2 °C at the “Förderkopf” (wellhead). The source is originally pure and is qualified as natural curative water.

The water of the thermal boring in Überlingen shows in the tests out of the year 2002 a stability in mineralization, the gas conduction and the isotopic contents. According to the definitions – quality standards for the nomination of health resorts, resort towns and curative sources of the German “Heilbäderverbandes e.V.” and the German “Tourismusverbandes e.V.” of 13th October 1998 –for the characterization as curative water the dominating main criteria and especially balneologic value determining contents are efficient, if they reach certain concentrations. For the thermal water boring Überlingen this is valid for the content of sodium, hydrogen carbonate and chloride as well as for the fluoride concentration. The water obtains - in terms of the definition - the following nomination:

Thermal water containing fluoride sodium, hydrogen carbonate – chloride

The thermal water is used as bath water in the “Bodensee-Therme Überlingen”. It is appropriate for therapeutical purposes in the physical treatment for damages of the musculoskeletal system.

Curative appearance on:	Encourages:
<ul style="list-style-type: none">• Functional heart and vascular diseases• “Neurovegetativ” dysfunctions• Dysfunctions of the digestive organs• Non-phlogistic diseases of the musculoskeletal system• Age-related functional restraints• Distress	<ul style="list-style-type: none">• Therapy to increase resistance.• Regeneration of all body functional systems• Vein functions• Muscle-skeletal-system

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Testing report concerning the thermal boring on 18th July 2001 of « Hydo Data »

Testing of senses

* Appearance	clear
* Colour	transparent
* Odor	like sulfur

Physical, chemical testing

* Water temperature:	36.8 ° C
* ph-value at 36.8 °C	7.23
* Electrical conductivity at 25° C	(µS/cm) 1.580

Laboratory measurement

* ph-value at 22.3 ° C	7.35
* Electrical conductivity at 25° C	(µS/cm) 1.620

Chemical testing of the cations and anions

Cations	mg/l	mval/l	mval %
Sodium (Na ⁺)	280	12.17	74.8
Potassium (K ⁺)	4.4	0.112	0.7
Ammonium (NH ₄ ⁺)	0.43	0.024	0.1
Calcium (CA ²⁺)	56.1	2.799	17.2
Magnesium (Mg ²⁺)	13.6	1.119	6.9
Total iron (Fe ^{2+/3+})	1.59	0.057	0.4
Manganese (Mn ²⁺)	0.05	0.002	-
Total cations	356.17	16.283	100
Anions	mg/l	mval/l	mval %
Chloride (Cl ⁻)	235	6.629	41.0
Fluoride (F ⁻)	4.40	0.232	1.4
Bromide (Br ⁻)	0.23	0.003	-
Iodide (J)	0.20	0.002	-
Nitrate (NO ₃ ⁻)	<0.5	-	-
Hydrogen carbonate (HCO ₃ ⁻)	433	7.096	43.9
Sulfate (SO ₄ ²⁻)	106	2.207	13.7
Hydrogen phosphate (HPO ₄ ²⁻)	0.16	0.003	-
Total anions	778.99	16.172	100

Undissociated substances

BOR (HBO)	(mg/l)	2.3
Total of the dissolved mineral compound	(mg/l)	1137.46

Dissolved gaseous substances

Free dissolved carbon dioxide (CO)	(mg/l)	24.9
Oxygen (O)	(mg/l)	0.1