



REPORT OF WATER ANALYSIS

CLIENT:

Name: *HYD Rákkutató és Gyógyszerfejlesztő Kft.*
Address: *1118 Budapest, Villányi út 97.*

SAMPLE:

Name: *PREVENTA-45*
Sample: *Deuterium depleted drinking water*


SAMPLING:

Sampler: *Client*
Sampling: *Client*

Date of sampling: - Start of test: *13/05/2019*
Date of receive: *13/05/2019* End of test: *20/05/2019*



Date of issue: *20/05/2019, Budapest*


Szakács Imre
Head of Laboratory

This report only have connection with the sample(s) specified above. The sample identification is the Sampler's responsibility. This report may copy only in its entirety.

Name: **PREVENTA-45**Sample: **Deuterium depleted drinking water**

Date of sampling: -

REPORT OF MINERAL WATER ANALYSIS

| Cation | mg/l | meq/l | meq % | Anion | mg/l | meq/l | meq % |
|---|--------|-------|--------|-------------------------------|--------|-------|---------------------|
| Na ⁺ | 1,3 | 0,06 | 1,88 | NO ₃ ⁻ | 2,6 | 0,04 | 1,46 |
| K ⁺ | 1,0 | 0,03 | 0,85 | NO ₂ ⁻ | < 0,01 | 0,00 | 0,00 |
| Li ⁺ | - | | | Cl ⁻ | 90 | 2,54 | 88,28 |
| NH ₄ ⁺ | < 0,02 | 0,00 | 0,00 | Br ⁻ | < 0,02 | 0,00 | 0,00 |
| Ca ²⁺ | 38,8 | 1,94 | 64,25 | I ⁻ | < 0,01 | 0,00 | 0,00 |
| Mg ²⁺ | 12,1 | 1,00 | 33,02 | F ⁻ | < 0,05 | 0,00 | 0,00 |
| Fe _{soluted} | - | | | SO ₄ ²⁻ | < 0,1 | 0,00 | 0,00 |
| Mn _{soluted} | - | | | HCO ₃ ⁻ | 18 | 0,30 | 10,26 |
| Fe | < 0,05 | 0,00 | 0,00 | CO ₃ ²⁻ | | | |
| Mn | < 0,02 | 0,00 | 0,00 | PO ₄ ³⁻ | < 0,05 | 0,00 | 0,00 |
| | | | | S ²⁻ | - | | |
| Sum Cations | 53,20 | 3,01 | 100,00 | Sum Anions | 110,60 | 2,88 | 100,00 |
| Total cations and anions: | | 164 | mg/l | Spec. el. cond. 20°C | | 360 | µS/cm |
| Metaboric acid [HBO ₂] | - | Bmg/l | | pH | | 4,7 | |
| Metasilicic acid [H ₂ SiO ₃] | - | mg/l | | pH _{poise} | | | |
| Aluminium [Al] | - | µg/l | | Corrosion index: | | - | |
| Antimony [Sb] | - | µg/l | | M-alkalinity | | 0,3 | mmol/l |
| Arsenic [As] | - | µg/l | | P-alkalinity | | | mmol/l |
| Barium [Ba] | - | µg/l | | Total hardness | | 82 | CaO mg/l |
| Zinc [Zn] | - | µg/l | | Carbonate hardness | | 8 | CaO mg/l |
| Mercury [Hg] | - | µg/l | | Non-carbonate hardness | | 74 | CaO mg/l |
| Cadmium [Cd] | - | µg/l | | COD _{KMnO4/ac} | | 1,31 | O ₂ mg/l |
| Chromium [Cr] | - | µg/l | | Dry residues in 105°C | | - | mg/l |
| Nickel [Ni] | - | µg/l | | Dry residues in 180°C | | - | mg/l |
| Lead [Pb] | - | µg/l | | Dry residues in 260°C | | - | mg/l |
| Copper [Cu] | - | µg/l | | Total dissolved material | | - | mg/l |
| Selenium [Se] | - | µg/l | | TOC | | - | mg/l |
| Cobalt [Co] | - | µg/l | | Total phosphorus | | - | Pmg/l |
| Molybdenum [Mo] | - | µg/l | | Phenol index | | - | µg/l |
| | | | | TPH-oil index (GRO+DRO) | | - | µg/l |
| Free active chlorine [o] | - | mg/l | | ANA detergent | | - | mg/l |
| Total active chlorine [o] | - | mg/l | | Cyanide (total) | | - | µg/l |
| Combined active chlorine [o] | - | mg/l | | Free carbonic acid [o] | | - | mg/l |
| Chlorite | - | mg/l | | Dissolved oxygen [o] | | - | mg/l |
| Chlorate | - | mg/l | | Turbidity | | - | NTU |
| Bromate | - | µg/l | | Suspended Solids | | - | mg/l |
| Bromoform | - | µg/l | | Temperature [o] | | - | °C |
| Ozone | - | µg/l | | Nitrate/50+ nitrite/3 | | 0,05 | |

Physical characteristics: Colourless, clear.

Comments: [-] non tested component [o] onsite

From the tested compounds view the water sample according to the requirements of "Government Decree No. 201/2001. (X.25.) Korm. about the drinking water quality" is

[no mark]: suitable as "drinking water".

[*]: "non drinking water".

[+]: "criticised drinking water"

[o]: "if the water comes from the non protected layer, criticised drinking water".

Head of Department

20/05/2019, Budapest


Head of Laboratory



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ANALYTICAL METHODS

| Components | Method | Components | Method |
|---------------------------------|---|---|---|
| Na ⁺ | MSZ 1484-3:2006 6. f. | NO ₃ ⁻ | MSZ 1484-13:2009 5.2.sz. / EPA Method 300.1-1:1999 / MSZ EN ISO 10304-1:2009 |
| K ⁺ | MSZ 1484-3:2006 6.f. | NO ₂ ⁻ | MSZ 1484-13:2009 6.2.sz. / EPA Method 300.1-1:1999 / MSZ EN ISO 10304-1:2009 |
| Li ⁺ | MSZ 1484-3:2006 6.f. | Cl ⁻ | EPA Method 300.1-1:1999 / MSZ EN ISO 10304-1:2009 |
| NH ₄ ⁺ | MSZ ISO 7150-1:1992 | Br ⁻ | EPA Method 300.1-1:1999 / MSZ EN ISO 10304-1:2009 |
| Ca ²⁺ | MSZ 1484-3:2006 6.f. | I ⁻ | MSZ EN ISO 10304-3:1999 |
| Mg ²⁺ | MSZ 1484-3:2006 6.f. | F ⁻ | EPA Method 300.1-1:1999 / MSZ EN ISO 10304-1:2009 |
| Fe ³⁺ | MSZ 1484-3:2006 6.f. | SO ₄ ²⁻ | EPA Method 300.1-1:1999 / MSZ EN ISO 10304-1:2009 |
| Mn ²⁺ | MSZ 1484-3:2006 6.f. | HCO ₃ ⁻ | MSZ 448-11:1986 6.2.sz. |
| | | CO ₃ ²⁻ | MSZ 448-11:1986 6.2.sz. |
| | | o.PO ₄ ³⁻ | MSZ EN ISO 6878:2004 4.f. / EPA Method 300.1-1:1999 / MSZ EN ISO 10304-1:2009 |
| | | S ²⁻ | MSZ 448-14:1990 3.f. |
| Smell, taste | MSZ EN 1622:2007 C.mell. | pH | MSZ 1484-22:2009 8.1.szakasz |
| Colour | MSZ EN ISO 7887:1998 2.f.(vsz) | m-alkalinity | MSZ 448-11:1986 |
| Free CO ₂ | MSZ 448-23:1983 2.f. | p-alkalinity | MSZ 448-11:1986 |
| Fixed CO ₂ | MSZ EN ISO 7027:2000 6.f. (vsz) | Total hardness | MSZ 448-21:1986 Függelék 4.f., 5.f. |
| TOC | MSZ EN 1484:1998 | Carb. hardness | MSZ 448-21:1986 4.f. |
| HBO ₂ | MSZ 10889-2:1981 | Non-carb. hard. | MSZ 448-21:1986 5.f. |
| H ₂ SiO ₃ | MSZ 448-26:1991 5.f. | Spec. el. cond. | MSZ EN 27888:1998 |
| Cyanide (total) | MSZ 260-30:1992 4.1.-4.6. szakasz | COD _{KMnO4/ac} | MSZ 448-20:1990 |
| Phenol | MSZ 1484-1:2009 3.f., 4.f. | COD _{Cr} | ISO 15705:2002 |
| Anionic surf. | MSZ 448-49:1981 | Dry residues | MSZ 448-19:1986 |
| Total P | MSZ EN ISO 6878:2004 7.f. | Floating substance | MSZ 448-33:1985 |
| Org. N | MSZ 448-27:1985 5.2.2.sz. 6.f., MSZ ISO 7150-1:1992 | Temperature | MSZ 448-2:1967 1.f. (vsz) |
| Cr (VI) | MSZ 260-32:1989 2.f. | Active chlorine | MSZ EN ISO 7393-2:2000 |
| UV SZOE _{cyclohexane} | MSZ 12750-23:1976 4.f. (vsz) | Ozone | DIN 38408-G3-2:1993 |
| Dissolved O | MSZ ISO 5813:1992 / MSZ EN 25814:1998 (vsz.) | Chlorite, chlorate | EPA Method 300.1-1:1999 / MSZ EN ISO 10304-4:2000 |
| Turbidity | ASTM D1498:2014 | Bromate | EPA Method 300.1-1:1999 / EN ISO 15061:2001 |
| Aluminium | MSZ EN ISO 15586:2004 | Chromium | MSZ EN ISO 15586:2004 |
| Antimony | MSZ EN ISO 15586:2004 | Molybdenum | MSZ EN ISO 15586:2004 |
| Arsenic | MSZ EN ISO 15586:2004 | Nickel | MSZ EN ISO 15586:2004 |
| Barium | MSZ EN ISO 15586:2004 | Lead | MSZ EN ISO 15586:2004 |
| Zinc | MSZ 1484-3:2006 6.f. | Tin | MSZ EN ISO 15586:2004 |
| Silver | MSZ EN ISO 15586:2004 | Copper | MSZ 1484-3:2006 6.f. |
| Mercury | MSZ 1484-3:2006 9.f. | Strontium | MSZ EN ISO 15586:2004 |
| Cadmium | MSZ EN ISO 15586:2004 | Selenium | MSZ EN ISO 15586:2004 |
| Cobalt | MSZ EN ISO 15586:2004 | Vanadium | MSZ EN ISO 15586:2004 |
| BTEX / GC-FID, -MS | MSZ EN ISO 17943:2016 | CH ₄ , O ₂ , N ₂ , CO ₂ | MSZ 448-43:1985 |
| VOCI / GC-ECD, -MS | MSZ EN ISO 17943:2016 | methane, ethane propane, butane, pentane, hexane | MSZ ISO 6974-3:2001 |
| Oil index / GC | EPA 8015C / ASTM D6520:2000 | | |

(vsz) = withdrawn standard

06.07.2018

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A NAH által NAH-1-1217/2018 számon Akkreditált Vizsgálólaboratórium.