VÍZKUTATÓ VÍZKÉMIA KFT

1026 Budapest, Szilágyi E. fasor 43/b.
Tel./Fax: (1)-2124157, (1)-2148937
E-mail: posta@vizkemia.hu
www.vizkemia.hu

Analysis Number
41082/4

REPORT OF WATER ANALYSIS

CLIENT:

Name: ***Royal Water s.r.o.***

Address: ***Palatínova ul. 2732/61, 945 01 Komárno SLOVAKIA***

SAMPLE:

Name ***ROYAL IONIZED WATER MICROCLUSTERED***

Sample: ***A100124***

Depth [m]: -

Place of sample: -

Water flow rate [l/min]: -

SAMPLING:

Sampler: ***Client***

Sampling: ***Client***

Date of sampling:	-	Start of test:	***06/02/2018***
Date of receive:	***06/02/2018***	End of test	***13/02/2018***

COMMENTS:

From the point of the components examined, the water is suitable for bottling with a label **"small amount of mineral substances", "suitable for a low-sodium diet"** use as a food only exclusively with a label of "bottled natural mineral water" according to the requirements of 65/2004. (IV.27.) FVM-ESZCSM-GKM decree about "the bottling...of natural mineral water" point no. 1's requirements.

Date of issue: ***13/02/2018, 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.

VÍZKUTATÓ VÍZKÉMIA KFT

1026 Budapest, Szilágyi E. fasor 43/b.
Tel./Fax: (1)-2124157, (1)-2148937
E-mail: posta@vizkemia.hu
www.vizkemia.hu

Analysis Number
41082/4

Name: ***ROYAL IONIZED WATER MICROCLUSTERED***

Sample: ***A100124***

Depth[m]: -

Date of sampling: -

REPORT OF MINERAL WATER ANALYSIS

Cation	mg/l	meq/l	meq %
Na^+	2,5	0,11	4,60
K^+	0,7	0,02	0,76
Li^+	0,01	0,00	0,06
NH_4^+	< 0,02	0,00	0,00
Ca^{2+}	23,0	1,15	48,61
Mg^{2+}	13,2	1,09	45,97
Fe_{solute}	-		
Mn_{solute}	-		
Fe	< 0,05	0,00	0,00
Mn	< 0,02	0,00	0,00
Sum Cations	39,41	2,36	100,00

Anion	mg/l	meq/l	meq %
NO_3^-	< 1,0	0,00	0,00
NO_2^-	< 0,02	0,00	0,00
Cl^-	2,0	0,06	2,40
Br^-	< 0,02	0,00	0,00
I^-	< 0,01	0,00	0,00
F^-	< 0,05	0,00	0,00
SO_4^{2-}	9,3	0,19	8,25
HCO_3^-	79	1,30	55,17
CO_3^{2-}	24,0	0,80	34,08
PO_4^{3-}	0,07	0,00	0,09
S^{2-}	< 0,02	0,00	0,00
Sum Anions	114,37	2,35	100,00

Total cations and anions: 154 mg/l

Spec. el. cond. 20°C 188 µS/cm

Metaboric acid [HBO_2]	< 0,03	Bmg/l
Metasilicic acid [H_2SiO_3]	5,7	mg/l
Aluminium [Al]	-	µg/l
Antimony [Sb]	< 2,0	µg/l
Arsenic [As]	< 2,0	µg/l
Barium [Ba]	<20	µg/l
Zinc [Zn]	< 5	µg/l
Mercury[Hg]	< 0,10	µg/l
Cadmium [Cd]	< 0,2	µg/l
Chromium [Cr]	< 2,0	µg/l
Nickel [Ni]	< 2,0	µg/l
Lead [Pb]	< 2,0	µg/l
Copper [Cu]	<10	µg/l
Selenium [Se]	< 2,0	µg/l
Cobalt [Co]	-	µg/l
Molybdenum [Mo]	-	µg/l
Tin [Sn]	-	µg/l
Silver[Ag]	-	µg/l
Strontium [Sr]	-	µg/l
Chlorite	-	mg/l
Chlorate	-	mg/l
Bromate	-	µg/l
Bromoform	-	µg/l
Ozone	-	µg/l

pH	9,3	
pH_{poise}		
Corrosion index:		
M-alkalinity	2,1	mmol/l
P-alkalinity	0,4	mmol/l
Total hardness	63	CaO mg/l
Carbonate hardness	59	CaO mg/l
Non-carbonate hardness	4	CaO mg/l
$COD_{KMnO4/ac}$	0,32	O_2 mg/l
Dry residues in 105°C	-	mg/l
Dry residues in 180°C	121	mg/l
Dry residues in 260°C	93	mg/l
Total dissolved material	161	mg/l
TOC	-	mg/l
Total phosphorus	-	Pmg/l
Phenol index	-	µg/l
TPH-oil index (GRO+DRO)	-	µg/l
ANA detergent	-	mg/l
Cyanide (total)	-	µg/l
Free carbonic acid [o]	-	mg/l
Dissolved oxygen [o]	-	mg/l
Turbidity	-	NTU
Suspended Solids	-	mg/l
Temperature		°C
Nitrate/50+ nitrite/3	0,00	

Physical characteristics: Colourless, clear.

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

From the tested compounds view the water sample contains a small amount of mineral substances. The sample is a bit hard water of a calcium-magnesium-hydrogen-carbonate-carbonate character containing small amount of sodium.

Head of Department

12/02/2018, Budapest

Szakács Imre
Head of Laboratory

VÍZKUTATÓ VÍZKÉMIA KFT

1026 Budapest, Szilágyi E. fasor 43/b.
Tel./Fax: (1)-2124157, (1)-2148937
E-mail: posta@vizkemia.hu
www.vizkemia.hu

ANALYTICAL METHODS

Components	Method
Na^+	MSZ 1484-3:2006 6.
K^+	MSZ 1484-3:2006 6.
Li^+	MSZ 1484-3:2006 6.
NH_4^+	MSZ ISO 7150-1:1992
Ca^{2+}	MSZ 1484-3:2006 6.
Mg^{2+}	MSZ 1484-3:2006 6.
Fe^{3+}	MSZ 1484-3:2006 6. / MSZ EN ISO 15586:2004
Mn^{2+}	MSZ 1484-3:2006 6. / MSZ EN ISO 15586:2004

Smell, taste	MSZ EN 1622:2007
Colour	MSZ EN ISO 7887:1998 (withdrawn standard)
Free CO_2	MSZ 448-23:1983
Fixed CO_2	MSZ 448-23:1983
TOC	MSZ EN 1484:1998
HBO_2	MSZ 10889-2:1981
H_2SiO_3	MSZ 448-26:1991
Cyanide (total)	MSZ 260-30:1992 4.1.-4.6.
Phenol	MSZ 1484-1:2009
Anionic surf.	MSZ 448-49:1981
Total P	MSZ EN ISO 6878:2004 4.f.
Org. N	MSZ 448-27:1985 6.
Cr (VI)	MSZ 260-32:1989 2.
UV $SZOE_{cyclohexane}$	MSZ 12750-23:1976 4. (withdrawn standard)
Dissolved O	MSZ ISO 5813:1992 / MSZ EN 25814:1998 (withdrawn standard)
Turbidity	MSZ EN ISO 7027:2000 (withdrawn standard)

Aluminium	MSZ EN ISO 15586:2004
Antimony	MSZ EN ISO 15586:2004
Arsenic	MSZ EN ISO 15586:2004
Barium	MSZ EN ISO 15586:2004
Zinc	MSZ 1484-3:2006 6.
Silver	MSZ EN ISO 15586:2004 / MSZ 1484-3:2006 6.
Mercury	MSZ 1484-3:2006 9.f.
Cadmium	MSZ EN ISO 15586:2004 / MSZ 1484-3:2006 6.
Cobalt	MSZ EN ISO 15586:2004 / MSZ 1484-3:2006 6.

BTEX / GC-FID, -MS	MSZ 1484-4:1998 / ASTM D6520:2000 (WS)
VOCl / GC-ECD, -MS	MSZ 1484-5:1998 / ASTM D6520:2000 (WS)
Oil index / GC	EPA 8015C / ASTM D6520:2000

Components	Method
NO_3^-	MSZ 1484-13:2009 / EPA Method 300.1:1999 / MSZ EN ISO 10304-1:2009
NO_2^-	MSZ 1484-13:2009 / EPA Method 300.1:1999 / MSZ EN ISO 10304-1:2009
Cl^-	MSZ 1484-15:2009 / EPA Method 300.1:1999 / MSZ EN ISO 10304-1:2009
Br^-	US Stand. Meth.: 4500-Br^- / EPA Method 300.1:1999 / MSZ EN ISO 10304-1:2009
I^-	MSZ 448-16:1987 (withdrawn standard) / MSZ EN ISO 10304-3:1999
F^-	MSZ 448-17:1986 2. / EPA Method 300.1:1999 / MSZ EN ISO 10304-1:2009
SO_4^{2-}	MSZ 448-13:1983 3. / EPA Method 300.1:1999 / MSZ EN ISO 10304-1:2009
HCO_3^-	MSZ 448-11:1986
CO_3^{2-}	MSZ 448-11:1986
o.PO_4^{3-}	MSZ EN ISO 6878:2004 4. / EPA Method 300.1:1999 / MSZ EN ISO 10304-1:2009
S^{2-}	MSZ 448-14:1990 3.

pH	MSZ 1484-22:2009
m-alkalinity	MSZ 448-11:1986
p-alkalinity	MSZ 448-11:1986
Total hardness	MSZ 448-21:1986
Carb. hardness	MSZ 448-21:1986
Non-carb. hard.	MSZ 448-21:1986
Spec. el. cond.	MSZ EN 27888:1998
$COD_{KMnO4/ac}$	MSZ 448-20:1990
COD_{Cr}	ISO 15705:2002
Dry residues	MSZ 448-19:1986
Floating substance	MSZ 448-33:1985
Temperature	MSZ 448-2:1967 (withdrawn standard)
Active chlorine	MSZ EN ISO 7393-2:2000
Ozone	US Standard Methods: 4500-O_3 / DIN 38408-G3 2.
Chlorite, chlorate	EPA Method 300.1:1999 / MSZ EN ISO 10304-4:2000
Bromate	EPA Method 300.1:1999 / EN ISO 15061:2001

Chromium	MSZ EN ISO 15586:2004 / MSZ 1484-3:2006 6.
Molybdenum	MSZ EN ISO 15586:2004
Nickel	MSZ EN ISO 15586:2004 / MSZ 1484-3:2006 6.
Lead	MSZ EN ISO 15586:2004 / MSZ 1484-3:2006 6.
Tin	MSZ EN ISO 15586:2004
Copper	MSZ EN ISO 15586:2004 / MSZ 1484-3:2006 6.
Strontium	MSZ EN ISO 15586:2004 / MSZ 1484-3:2006 6.
Selenium	MSZ EN ISO 15586:2004
Vanadium	MSZ EN ISO 15586:2004

CH4, O2, N2, CO2	MSZ 448-43:1985
methane, ethane propane, butane, pentane, hexane	MSZ ISO 6974-3:2001

04.04.2017 [e_1.0]

WS= withdrawn standard

Vízkutató VÍZKÉMIA KFT. Vizsgálólaboratóriuma
A NAH által NAH-1-1217/2014 számon akkreditált vizsgálólaboratórium. (accredited laboratory)