



EA MLA Signatory
Český institut pro akreditaci, o.p.s.
Olišanská 54/3, 130 00 Praha 3

issues

according to section 16 of Act No. 22/1997 Coll., on technical requirements for products, as amended

CERTIFICATE OF ACCREDITATION

No. 342/2022

Vodotech, spol. s r.o.
with registered office Mojmírovců 571/15, Mariánské Hory, 709 00 Ostrava, Company
Registration No. 64086348

to the Testing Laboratory No. **1259**
Central Laboratory

Scope of accreditation:

Chemical, microbiological and biological analysis of drinking, hot, ground, surface water, chemical analysis of waste water and sludge and water sampling to the extent as specified in the appendix to this Certificate.

This Certificate of Accreditation is a proof of Accreditation issued on the basis of assessment of fulfillment of the accreditation criteria in accordance with

ČSN EN ISO/IEC 17025:2018

In its activities performed within the scope and for the period of validity of this Certificate, the Body is entitled to refer to this Certificate, provided that the accreditation is not suspended and the Body meets the specified accreditation requirements in accordance with the relevant regulations applicable to the activity of an accredited Conformity Assessment Body.

This Certificate of Accreditation replaces, to the full extent, Certificate No.: 170/2022 of 6. 4. 2022, or any administrative acts building upon it.

The Certificate of Accreditation is valid until: **24. 5. 2023**

Prague: 7. 7. 2022



Lukáš Burda
Director of the Department
of Testing and Calibration Laboratories
Czech Accreditation Institute
Public Service Company

**The Appendix is an integral part of
Certificate of Accreditation No. 342/2022 of 07/07/2022**

Accredited entity according to ČSN EN ISO/IEC 17025:2018:

Vodotech, spol. s r.o.
Central Laboratory
Slavnickovců 571/21, 709 00 Ostrava - Mariánské Hory

Tests:

Ordinal number ¹	Test procedure/ method name	Test procedure/ method identification ²	Tested object
1*	Determination of temperature	M-CH 01 (ČSN 75 7342)	Drinking, surface, ground, hot, waste water, liquid sludge
2	Determination of colour by photometric method	M-CH 02 (ČSN EN ISO 7887)	Drinking, surface, ground, hot, waste water
3	Determination of turbidity by nephelometry	M-CH 03 (ČSN EN ISO 7027)	Drinking, surface, ground, hot water
4	Determination of electrical conductivity	M-CH 04 (ČSN EN 27888)	Drinking, surface, ground, hot, waste water
5	Determination of pH by potentiometric method	M-CH 05 a (ČSN ISO 10523)	Drinking, surface, ground, hot, waste water, liquid sludge
6	Determination of pH by potentiometric method	M-CH 05 b (ČSN EN 12176:1999)	Sludge
7	Determination of ANC _{4,5} and ANC _{8,3} by titration and calculation of CO ₂ forms, Langelier index from measured values ³⁾	M-CH 06 (ČSN EN ISO 9963-1)	Drinking, surface, ground, hot and waste water
8	Determination of BNC _{8,3} and BNC _{4,5} by titration	M-CH 07 (ČSN 75 7372)	Drinking, surface, ground, hot and waste water
9	Determination of absorbance at 254 nm	M-CH 08 (ČSN 75 7360)	Drinking, surface, ground water
10	Determination of COD _{Mn} by titration	M-CH 09 (ČSN EN ISO 8467)	Drinking, surface, ground, hot water
11	Determination of dissolved oxygen electrochemically	M-CH 10-II (ČSN EN ISO 5814)	Drinking, surface, ground, waste water
12	Determination of total hardness by complexometric titration	M-CH 11 (ČSN ISO 6059)	Drinking, surface, ground and hot water
13	Determination of calcium by complexometric titration and calculation of magnesium by measured values	M-CH 12 a (ČSN ISO 6058)	Drinking, surface, ground, hot and waste water, liquid sludge
14*	Determination of free and total chlorine by spectrophotometry using HACH set and bound chlorine by calculation from measured values.	M-CH 14 (HACH manual)	Drinking, surface, ground, hot water
15	Determination of chlorine dioxide by spectrophotometry using HACH set	M-CH 15 (HACH manual)	Drinking, surface, ground and hot water



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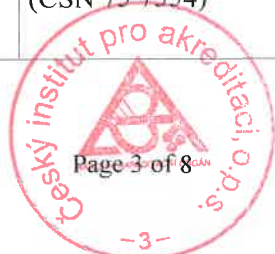
Ordinal number ¹	Test procedure/ method name	Test procedure/ method identification ²	Tested object
16*	Determination of odour and flavour - preliminary sensory analysis	M-CH 59 (ČSN 75 7340, ČSN EN 1622)	Drinking, surface, ground and hot water
17	Determination of chloride by silver-nitrate titration	M-CH 17 (ČSN ISO 9297)	Drinking, surface, ground, waste water
18	Reserved		
19	Determination of nitrate by salicylate by spectrophotometry and calculation of N-NO ₃ from measured values	M-CH 19 (ČSN ISO 7890-3)	Drinking, surface, ground and waste water, hot water, liquid sludge
20	Determination of nitrite by spectrophotometry and calculation of N-NO ₂ from measured values	M-CH 20 (ČSN EN 26777)	Drinking, surface, ground, hot and waste water, liquid sludge
21	Determination of ammonium by spectrophotometry and calculation of N-NH ₄ and total inorganic nitrogen from measured values	M-CH 21 (ČSN ISO 7150-1)	Drinking, surface, ground, hot, waste water, liquid sludge
22	Determination of total nitrogen by spectrophotometry	M-CH 48 (HACH manual)	Drinking, surface, ground and waste water, liquid sludge
23	Determination of total phosphorus by spectrophotometry	M-CH 23 (ČSN EN ISO 6878)	Drinking, surface, ground, hot, waste water, liquid sludge
24	Determination of sulphate by titration	M-CH 24 (ČSN 75 7477)	Drinking, surface, ground and waste water
25	Determination of fluoride by spectrophotometry	M-CH 25 ⁴⁾	Drinking, surface, ground water
26	Determination of humic substances by spectrophotometry	M-CH 26 (ČSN 75 7536)	Drinking, surface and underground water
27	Determination of phenols by spectrophotometry	M-CH 27 (ČSN ISO 6439)	Drinking, surface, ground, waste water, liquid sludge
28	Determination of anionic surfactants by spectrophotometry	M-CH 28 (ČSN EN 903)	Drinking, surface, ground, waste water, liquid sludge
29	Determination of total cyanide by spectrophotometry	M-CH 29 (ČSN 75 7415)	Drinking, surface, ground and waste water, liquid sludge
30	Determination of Fe, Mn, Zn by flame atomic absorption spectrometry	M-CH 30 a (ČSN 75 7385, ČSN ISO 8288)	Drinking, surface, ground, hot, waste water, liquid sludge

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Ordinal number ¹	Test procedure/ method name	Test procedure/ method identification ²	Tested object
31	Determination of Al by spectrophotometry	M-CH 31 (ČSN ISO 10566)	Drinking, surface, ground, waste water
32	Determination of Na by flame atomic absorption spectrometry	M-CH 33 (ČSN ISO 9964-1)	Drinking, surface, ground and waste water, liquid sludge
33	Determination of Cu, Ni, Pb by flame atomic absorption spectrometry	M-CH 36 a (ČSN ISO 8288)	Drinking, surface, ground, waste water, liquid sludge
34	Determination of Cr by flame atomic absorption spectrometry	M-CH 37 a (ČSN EN 1233)	Drinking, surface, ground and waste water, liquid sludge
35	Determination of Cd by flame atomic absorption spectrometry	M-CH 39 a (ČSN EN ISO 5961)	Drinking, surface, ground and waste water, liquid sludge
36	Determination of the sum of hydrocarbons C10 - C40 by gas chromatography (GC/FID)	M-CH 41 (ČSN EN ISO 9377-2)	Drinking, surface, ground, waste water
37	Determination of Hg by atomic absorption spectrometry AMA	M-CH 42 (ČSN 75 7440)	Drinking, surface, ground, waste water, sludge and liquid sludge
38	Determination of NEL by infrared spectroscopy	M-CH 43 (Nicolet manual)	Drinking, surface, ground and waste water, liquid sludge
39	Determination of TOL by gas chromatography (ECD, FID) and calculation of TOL from measured values ³⁾	M-CH 44 (ČSN EN ISO 10301)	Drinking, surface, ground and hot water
40	Determination of PAH by liquid chromatography (FLD) and calculation of the sum of PAH from measured values ³⁾	M-CH 45 a (ČSN 75 7554, ČSN EN ISO 17993)	Drinking, surface, ground and waste water
41	Determination of OCP and semi-volatile compounds by gas chromatography (MSD) and calculation of the sum of OCP from measured values ³⁾	M-CH 46 (ČSN EN ISO 6468)	Drinking, surface, ground water
42	Determination of PCB by gas chromatography (MSD) and calculation of the sum of PCB from measured values ³⁾	M-CH 47 a (ČSN EN ISO 6468)	Drinking, surface, ground and waste water
43	Determination of PAH by gas chromatography (MSD) and calculation of the sum of PAH from measured values ³⁾	M-CH 63 (ČSN 75 7554)	Drinking, surface, ground water



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Ordinal number ¹	Test procedure/ method name	Test procedure/ method identification ²	Tested object
44	Determination of total and dissolved organic carbon (TOC, DOC) using an analyzer with IR detector	M-CH 56 (ČSN EN 1484)	Drinking, surface, ground, hot, waste water
45	Determination of COD _{Cr} by titration	M-CH 49 (ČSN ISO 6060)	Drinking, surface, ground and waste water
46	Determination of BOD ₅ by electrochemical method	M-CH 51 (ČSN EN ISO 5815-1)	Drinking, surface, ground and waste water
47	Determination of dissolved solids and RAS by gravimetry	M-CH 52 a (ČSN 75 7346, ČSN 75 7347)	Drinking, surface, ground and waste water, liquid sludge
48	Determination of dry residue (total solids) and loss on ignition by gravimetry	M-CH 53 (ČSN EN 12880, ČSN EN 12879:2001)	Sludge
49	Determination of extractives by IR spectroscopy	M-CH 54 (ČSN 75 7506)	Drinking, surface, ground and waste water, liquid sludge
50	Determination of suspended solids by gravimetry	M-CH 61 a (ČSN EN 872)	Drinking, surface, ground, waste water, liquid sludge
51	Determination of suspended solids by gravimetry	M-CH 61 b (ČSN EN 872)	Sludge
52	Determination of metals (Al, As, B, Ca, Cd, Cr, Cu, Fe, K, Mg, Mn, Na, Ni, Pb, Sb, Se, Zn) by inductively coupled plasma optical emission spectrometry (ICP- OES) and water hardness by calculation from the measured values	M-CH 69 (ČSN EN ISO 11885, Spectro CS manual)	Drinking, surface, ground, waste water
53	Determination of FE by spectrophotometry with HACH set	M-CH 70 (Hach manual)	Drinking, surface, ground water
54	Determination of Mn by spectrophotometry with HACH set	M-CH 71 (Hach manual)	
55-60	Reserved		
61	Determination of bioseston by microscopic method	M-Bi 01 (ČSN 75 7712)	Drinking, surface, ground water
62	Determination of abioseston by microscopic method	M-Bi 02 (ČSN 75 7713)	Drinking, surface, ground water
63	Detection and enumeration of Coliform bacteria by membrane filtration	M-MBi 01 (ČSN 75 7837)	Drinking, surface, ground water
64	Detection and enumeration of intestinal enterococci by membrane filtration	M-MBi 07 (ČSN EN ISO 7899-2)	Drinking, surface, ground, hot water



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Ordinal number ¹	Test procedure/ method name	Test procedure/ method identification ²	Tested object
65	Detection and enumeration of thermotolerant coliform bacteria and <i>Escherichia coli</i> by membrane filtration method	M-MBi 08 (ČSN 75 7835)	Drinking, surface, ground, hot water
66	Detection and enumeration of <i>Pseudomonas aeruginosa</i> by membrane filtration	M-MBi 10 (ČSN EN ISO 16266)	Drinking, surface, ground, hot water
67	Enumeration of staphylococci by membrane filtration method	M-MBi 11 (ČSN EN ISO 6888-1)	Drinking, surface, ground, hot water
68	Enumeration of culturable microorganisms at 22 °C by inoculation in a nutrient agar culture medium at 22 °C at 36 °C	M-MBi 12 (ČSN EN ISO 6222) M-MBi 13 (ČSN EN ISO 6222)	Drinking, surface, ground, hot water
69	Detection and enumeration of <i>Escherichia coli</i> and coliform bacteria by membrane filtration method	M-MBi 14 (ČSN EN ISO 9308-1)	Drinking, surface, ground, hot water
70	Detection and enumeration of <i>Clostridium perfringens</i> by membrane filtration method	M-MBi 15 (MoH Reg. No. 252/2004 Coll.)	Drinking, surface, ground and hot water
71	Detection and enumeration of <i>Escherichia coli</i> and coliform bacteria by Colilert - 18 method	M-MBi 16 (ČSN EN ISO 9308-2)	Drinking, surface, ground, hot water

¹ asterisk at the ordinal number identifies the tests, which the Laboratory is qualified to carry out outside the permanent laboratory premises

² if the document identifying the test procedure is dated, only these specific procedures are used. If the document identifying the test procedure is not dated, the latest edition of the specified procedure is used (including any changes)

³ the range of determined parameters is specified at the end of the Appendix

⁴ method source: M.Horáková, P.Lischke, A.Grünwald – Chemical and Physical Methods for Water Analysis, SNTL, 1986, page 202



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Sampling:

Ordinal number	Sampling procedure name	Sampling procedure identification ¹	Sampled object
1	Drinking water sampling	M-V 01 (ČSN EN ISO 5667-1 ČSN EN ISO 5667-3, ČSN ISO 5667-5, ČSN EN ISO 5667-14, ČSN ISO 5667-21 ČSN EN ISO 19458)	Drinking and hot water
2	Waste water sampling (manual and by automatic sampler)	M-V 02 (ČSN EN ISO 5667-1 ČSN EN ISO 5667-3, ČSN ISO 5667-10, ČSN ISO 5667-13, ČSN EN ISO 5667-14, ČSN 75 7315)	Waste water, liquid sludge

¹ if the document identifying the sampling procedure is dated, only these specific procedures are used. If the document identifying the sampling procedure is not dated, the latest edition of the specified procedure is used (including any changes)

Range of determined parameters:

Test Ordinal Number

- 7 CO₂ forms: CO₂ free, bound, total, stable and aggressive, hydrogencarbonates, carbonates
- 39 Volatile Organic Compounds
trans-1,2-dichloroethene, 1,1-dichloroethane, cis-1,2-dichloroethene, benzene, 1,2-dichloropropane, toluene, chlorobenzene, ethylbenzene, m,p – xylene, styrene,
1,1-dichloroethene, dichloromethane, chloroform, 1,1,1-trichloroethane, tetrachloromethane, 1,2-dichloroethane, trichloroethene, bromodichloromethane, tetrachloroethene, dibromochloromethane, bromoform, 1,4-dichlorobenzene, 1,2-dichlorobenzene
- 40 Polyaromatic Hydrocarbons:
fluoranthene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3- c,d)pyrene, benzo(g,h,i)perylene

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- 41 Organochlorine pesticides and semivolatile compounds:
hexachlorobenzene (HCB), heptachlor, p,p'-DDT, p,p'-DDD, p,p'-DDE,
methoxychlor, aldrin, o,p'-DDT, dieldrin, α -endosulfan, β -endosulfan, endrin,
 α -hexachlorocyclohexane (α -HCH), β -hexachlorocyclohexane, lindan (γ -
HCH),
heptachloro-epoxide, pentachlorobenzene, pentachloronitrobenzene
(quintozene),
1,2,4,5-tetrachlorobenzene, 1,2,4-trichlorobenzene
- 42 Polychlorinated Biphenyls:
congener 28, congener 52, congener 101, congener 118, congener 138,
congener 153, congener 180
- 43 Polyaromatic Hydrocarbons:
fluoranthene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene,
indeno(1,2,3- c,d)pyrene, benzo(g,h,i)perylene, naphthalene, fluorene,
phenanthrene, anthracene, pyrene, benzo(a)anthracene, chrysene,
dibenzo(a,h)anthracene, acenaphthene, acenaphthylene

Explanations:

M-CH	Chemical Method
M-MBi	Microbiological Method
M-Bi	Biological Method
M-V	Sampling Method
TNV	Branch Technical Standard of Water Management
MoH	Ministry of Health
UV	Ultraviolet
NEL	Nonpolar Extractives
AMA	Automatic Mercury Analyzer
IR	Infrared
COD _{Cr}	Chemical Oxygen Demand using dichromate
COD _{Mn}	Chemical Oxygen Demand using permanganate
BOD ₅	Biochemical Oxygen Demand
ANC	Acid Neutralizing Capacity (alkalinity)
BNC	Base Neutralizing Capacity (acidity)
VOC	Volatile Organic Compounds
PAH	Polyaromatic Hydrocarbons
OCP	Organochlorine Pesticides



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PCB	Polychlorinated Biphenyls
FID	Flame Ionization Detector
ECD	Electron Capture Detector
FLD	Fluorescence Detector
MSD	Mass Detector
Sludge	Sludge with dry matter content over 15%
Liquid sludge	Sludge with dry matter content up to 15%
RAS	Dissolved Inorganic Salts
TOC	Total Organic Carbon
DOC	Dissolved Organic Carbon

